EASA
European Union Aviation Safety Agency

Air Operations (IR + AMC/GM & CS/GM)

eRules

Easy Access Rules for Air Operations

EASA eRules: aviation rules for the 21st century

Rules are the core of the EU civil aviation system. The aim of the **EASA eRules** project is to make them **accessible** to stakeholders in an efficient and reliable way.

EASA eRules is a comprehensive, single system for structuring, sharing, and storing of rules. It is the single, easy-access online database for all aviation safety rules applicable to European airspace users.

Easy Access Rules (**EAR**) are the output of the eRules project. They are consolidated versions of those rules, combining EU regulations with EASA certification specifications (CSs), acceptable means of compliance (AMC), and guidance material (GM) in an easy-to-read format with advanced navigation features through links and bookmarks. EAR are regularly updated, following the adoption of an official publication.

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— in PDF format;

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The **EASA eRules** system is developed and implemented in close cooperation with the Member States and aviation industry to ensure that all its capabilities are relevant and effective.

Published November 2022[1]

[1] The published date represents the date when the consolidated version of the document was generated.

[2] Euro-Lex, Important Legal Notice: http://eur-lex.europa.eu/content/legal-notice/legal-notice.html.

DISCLAIMER

This document is issued by the European Union Aviation Safety Agency (referred to as both 'EASA' and 'the Agency') to provide its stakeholders with an updated, consolidated, and easy-to-read publication. It has been prepared by putting together the officially published EU regulations with the related EASA certification specifications (CSs), acceptable means of compliance (AMC) and guidance material (GM) (including their amendments) adopted so far. However, this document is not an official publication, and EASA accepts no liability for damage of any kind resulting from the risks inherent in its use.

NOTE FROM THE EDITOR

The content of this document is arranged as follows: the cover regulation (recitals and articles) of the implementing rule (IR) or delegated rule (DR) appears first, then the IR or DR annex points, followed by the related acceptable means of compliance (AMC) and guidance material (GM).

In case of certification specifications (CSs), a CS is followed by the related GM.

All elements (i.e. articles, IRs, DRs, AMC, CSs, and GM) are colour-coded and can be identified according to the illustration below. The EU regulation or EASA Executive Director (ED) decision through which the article, IR, DR, CS, AMC, or GM was introduced or last amended is indicated below the article, IR, DR, CS, AMC, or GM title in *italics*.

Cover regulation article

EU regulation

Implementing rule annex or delegated rule annex

EU regulation

Certification specification

ED decision

Acceptable means of compliance

ED decision

Guidance material

ED decision

Note:

Rules that have a future applicability date are marked with purple. The respective applicability date is indicated below the rule text in purple, in square brackets '[]', and in *italics*.

This document will be updated regularly to incorporate further amendments.

The format of this document has been adjusted to make it user-friendly and for reference purposes. Any comments should be sent to erules@easa.europa.eu.

INCORPORATED AMENDMENTS

IMPLEMENTING RULES (IRS) (COMMISSION REGULATIONS)

Commission Regulation	Affected Annex	Applicability date[1]
Regulation (EU) No 965/2012	Annex I (Definitions) Annex II (Part-ARO) Annex III (Part-ORO) Annex IV (Part-CAT) Annex V (Part-SPA)	28/10/2012
Regulation (EU) No 800/2013 (NCC, NCO)	Annex I (Definitions) Annex II (Part-ARO) Annex III (Part-ORO) Annex V (Part-SPA) Annex VI (Part-NCC) Annex VII (Part-NCO)	25/8/2013 Opt-out: 25/08/2016
Regulation (EU) No 71/2014 (OSD)	Annex III (Part-ORO) Annex V (Part-SPA)	17/2/2014 Not later than 18 Dec. 2018 or 2 years after the OSD was approved, whichever is the latest
Regulation (EU) No 83/2014 (FTL)	Annex II (Part-ARO) Annex III (Part-ORO)	18/2/2016 Opt-out: ORO.FTL.205(e): 17/02/2017
Regulation (EU) No 379/2014 (SPO, CAT A-A, Sailplanes and balloons)	Annex I (Definitions) Annex II (Part-ARO) Annex III (Part-ORO) Annex IV (Part-CAT) Annex V (Part-SPA) Annex VI (Part-NCC) Annex VII (Part-NCO) Annex VIII (Part-SPO)	1/7/2014 CAT, non-commercial ops and SPO with balloons: 08/4/2018 CAT, non-commercial ops and SPO with sailplanes: 08/04/2019
Regulation (EU) 2015/140 (Sterile flight deck procedures)	Annex I (Definitions) Annex III (Part-ORO) Annex IV (Part-CAT) Annex VII (Part-NCO) Annex VIII (Part-SPO)	19/2/2015 Cover Reg. 'Art. 9b Review': 18/2/2016
Regulation (EU) 2015/640 (Part 26)	Annex III (Part-ORO)	14/5/2015 Some rules in Part-26
Regulation (EU) 2015/1329 (Dry-lease; FDM AOC aeroplanes)	Annex II (Part-ARO) Annex III (Part-ORO) Annex IV (Part-CAT)	1/10/2015 Opt-out: ORO.AOC.110(d): 25/08/2017

[1] *This is the main date of application (i.e. the date from which an act or a provision in an act produces its full legal effects) as defined in the relevant cover regulation article. However, some provisions of the regulations may be applicable at a different date (deferred applicability). Additionally, there may be some opt-outs (derogations from certain provisions) notified by the Member States.*

Regulation (EU) 2015/2338 (Flight recordings, aircraft tracking system, ULD)	Annex I (Definitions) Annex IV (Part-CAT) Annex VI (Part-NCC) Annex VIII (Part-SPO)	5/1/2016 CAT.GEN.MPA.205: - 16/12/2018 CAT.IDE.A.185: - (b): 31/12/2018; - (c), (d): 01/01/2019 - (h): 16/06/2018 CAT.IDE.A.190(e), 195(d): - 16/06/2018 CAT.IDE.A.285: - 01/01/2019 CAT.IDE.H.185: - (c): 01/01/2019 - (g): 01/01/2020 CAT.IDE.H.190, 195: - 01/01/2020 NCC.IDE.A/H.160, 165, 170: - 01/01/2020 SPO.IDE.A/H.140, 145, 150: - 01/01/2020
Regulation (EU) 2016/1199 (PBN, HOFO, Aeronautical data (Part-DAT) et al.)	Annex I (Definitions) Annex II (Part-ARO) Annex IV (Part-CAT) Annex V (Part-SPA) Annex VI (Part-NCC) Annex VII (Part-NCO) Annex VIII (Part-SPO)	25/8/2016 HOFO: 01/07/2018 Part-DAT: 01/01/2019
Regulation (EU) 2017/363 (CAT SET-IMC et al.)	Annex II (Part-ARO) Annex III (Part-ORO) Annex IV (Part-CAT) Annex V (Part-SPA)	22/3/2017
Regulation (EU) 2018/394 (Deletion of balloon requirements)	Annex I (Definitions) Annex II (Part-ARO) Annex III (Part-ORO) Annex IV (Part-CAT) Annex VII (Part-NCO) Annex VIII (Part-SPO)	8/4/2019
Regulation (EU) 2018/1042 (Support programmes, psychological assessment of flight crew (FC), systematic and random testing of psychoactive substances of FC and CC members	Annex I (Definitions) Annex II (Part-ARO) Annex IV (Part-CAT) Annex VI (Part-NCC) Annex VII (Part-NCO) Annex VIII (Part-SPO)	14/8/2020 TAWS in CAT.IDE.A.150 and SPO.IDE.A.130: applicable from 14/08/2018
Regulation (EU) 2018/1975 (Deletion of sailplane requirements; Electronic Flight Bags)	Annex I (Definitions) Annex II (Part-ARO) Annex III (Part-ORO) Annex IV (Part-CAT) Annex V (Part-SPA) Annex VI (Part-NCC) Annex VII (Part-NCO) Annex VIII (Part-SPO)	9/7/2019

Regulation (EU) 2019/1384 (Update Air Ops rules, use of aircraft listed on an AOC by other operators for non-CAT operations et al.)	Annex I (Definitions) Annex II (Part-ARO) Annex III (Part-ORO) Annex IV (Part-CAT) Annex V (Part-SPA) Annex VI (Part-NCC) Annex VII (Part-NCO) Annex VIII (Part-SPO)	24/9/2019
Regulation (EU) 2019/1387 (Aeroplane landing performance, lightweight flight recorders et al.)	Annex I (Definitions) Annex II (Part-ARO) Annex III (Part-ORO) Annex IV (Part-CAT) Annex V (Part-SPA) Annex VI (Part-NCC) Annex VII (Part-NCO) Annex VIII (Part-SPO)	25/9/2019 The following rules **shall apply from 5/11/2020**: CAT.OP.MPA.300; CAT.OP.MPA.301; CAT.OP.MPA.303; CAT.OP.MPA.311; CAT.POL.A.105(d); CAT.POL.A.255; CAT.POL.A.355.
Regulation (EU) 2020/745 (postponement of application date of certain measures of Reg. (EU) 2018/1042 in the context of COVID-19 pandemic)	Annex II (Part-ARO) Annex IV (Part-CAT) Annex VI (Part-NCC) Annex VII (Part-NCO) Annex VIII (Part-SPO)	The changes to the following rules *shall apply from 14 February 2021*: Article 4; Some definitions in Annex I; ARO.RAMP.106; CAT.GEN.MPA.100(c)(1); CAT.GEN.MPA.170; CAT.GEN.MPA.175; CAT.GEN.MPA.215; CAT.GEN.MPA.100(b)(1); NCC.GEN.105(e)(2); NCO.SPEC.115(e)(2); SPO.GEN.105(e)(2).
Regulation (EU) 2020/1176 (postponement of application date of certain measures of Reg. (EU) 2019/1387 in the context of COVID-19 pandemic)	Annex IV (Part-CAT)	The changes to the following rules *shall apply from 12 August 2021*: CAT.OP.MPA.300; CAT.OP.MPA.301; CAT.OP.MPA.303; CAT.OP.MPA.311; CAT.POL.A.105(d); CAT.POL.A.255; CAT.POL.A.355.

Regulation (EU) 2020/2036 (Evidence-based training (EBT) and postponement of application date of certain measures of Reg. (EU) 965/2012 related to some cockpit voice recorder requirements in the context of COVID-19 pandemic)	Annex I (Definitions) Annex II (Part-ARO) Annex III (Part-ORO) Annex IV (Part-CAT) Annex VI (Part-NCC) Annex VIII (Part-SPO)	1/1/2021 *The following rules have changed the date of application to 1 Jan 2022:* CAT.IDE.A.185 (c)(1) NCC.IDE.A.160 (b)(1) SPO.IDE.A.140 (b)(1)
Regulation (EU) 2021/1296 (Fuel/energy planning and management, support programmes and psychological assessment of flight crew, as well as testing of psychoactive substances)	Annex I (Definitions) Annex II (Part-ARO) Annex III (Part-ORO) Annex IV (Part-CAT) Annex V (Part-SPA) Annex VI (Part-NCC) Annex VII (Part-NCO) Annex VIII (Part-SPO)	30 October 2022 14 February 2021 — definition (98b) reintroduced into Annex I (Definitions)
Regulation (EU) 2021/2237 (All-weather operations (AWO) and flight crew training and checking)	Annex I (Definitions) Annex II (Part-ARO) Annex III (Part-ORO) Annex IV (Part-CAT) Annex V (Part-SPA) Annex VI (Part-NCC) Annex VII (Part-NCO) Annex VIII (Part-SPO)	30 October 2022
Regulation (EU) 2022/2203 (postponing the applicability of the requirements for locating an aircraft in distress)	Annex IV (Part-CAT)	4 December 2022

INCORPORATED AMC & GM (ED DECISIONS)

Annex (Part)	ED Decision	Issue no / Amendment no	Applicability date
GM to Cover Regulation	2014/019/R	**Issue 1 (initial)**	1/7/2014
	2018/003/R	Amendment 1	8/4/2019
	2018/012/R	Amendment 2	14/8/2020
	2019/019/R	Amendment 3	18/9/2019
GM to Definitions for terms used in Annexes II to VIII	2012/015/R	**Issue 1 (initial)**	24/10/2012
	2013/017/R	Amendment 1	23/8/2013
	2015/002/R	Amendment 2	31/1/2015
	2015/012/R	Amendment 3	4/5/2015
	2016/016/R	Amendment 4	3/8/2016
	2016/022/R	Amendment 5	1/7/2018
	2017/005/R	Amendment 6	31/3/2017
	2017/023/R	Amendment 7	15/12/2017
	2019/005/R	Amendment 8	20/12/2019
	2019/007/R	Amendment 9	1/9/2019
	2019/008/R	Amendment 10	9/7/2019
	2019/019/R	Amendment 11	18/9/2019
	2021/002/R	Amendment 12	3/3/2021
	2021/005/R	Amendment 13	24/4/2021
	2021/008/R	Amendment 14	30/6/2021
	2022/005/R	Amendment 15	30/10/2022
	2022/012/R	Amendment 16	30/10/2022
AMC&GM to Part-ARO	2014/025/R	**Issue 3**	28/10/2014
	2015/022/R	Amendment 1	1/10/2016
	2016/008/R	Amendment 2	3/5/2016
	2016/014/R	Amendment 3	3/8/2016
	2016/022/R	Amendment 4	1/7/2018
	2017/004/R	Amendment 5	10/3/2017
	2017/006/R	Amendment 6	31/3/2017
	2018/003/R	Amendment 7	8/4/2019
	2018/012/R	Amendment 8	14/8/2020
	2019/007/R	Amendment 9	1/9/2019 except for AMC1 ARO.RAMP.200(c), which applies from 1/1/2020)
	2019/019/R	Amendment 10	18/9/2019
	2021/002/R	Amendment 11	3/3/2021
	2022/005/R	Amendment 12	30/10/2022
	2022/012/R	Amendment 13	30/10/2022
AMC&GM to Part-ORO	2014/017/R	**Issue 2**	1/7/2014
	2015/005/R	Amendment 1	31/1/2015
	2015/012/R	Amendment 2	4/5/2015
	2015/022/R	Amendment 3	1/10/2016
	2015/027/R	Amendment 4	20/12/2015

	2015/030/R	Amendment 5	18/12/2015
	2016/004/R	Amendment 6	23/1/2020
	2016/008/R	Amendment 7	3/5/2016
	2016/019/R	Amendment 8	3/8/2016
	2016/022/R	Amendment 9	1/7/2018
	2017/004/R	Amendment 10	10/3/2017
	2017/007/R	Amendment 11	31/3/2017
	2017/023/R	Amendment 12	15/12/2017
	2019/005/R	Amendment 13	20/12/2019
	2019/008/R	Amendment 14	9/7/2019
	2019/019/R	Amendment 15	18/9/2019
	2019/025/R	Amendment 16	20/8/2020
	2021/002/R	Amendment 17	3/3/2021
	2021/005/R	Amendment 18	24/4/2021
	2022/005/R	Amendment 19	30/10/2022
	2022/012/R	Amendment 20	30/10/2022
	2022/014/R	Amendment 21	30/10/2022 (except for AMC2 ORO.FC.105(b)(2);(c), GM2 ORO.FC.105(b)(2), AMC1 ORO.FC.105(b)(3), AMC1 ORO.FC.115, AMC1 ORO.FC.120, AMC3 ORO.FC.120, AMC1 ORO.FC.125(b), AMC1 ORO.FC.130, AMC1 ORO.FC.135, AMC1 ORO.FC.145(a), GM1 ORO.FC.145(a), AMC2 ORO.FC.145(d), GM1 ORO.FC.145(d), AMC2 ORO.FC.146, AMC1 ORO.FC.215, AMC1 ORO.FC.220, AMC3 ORO.FC.220, AMC1 ORO.FC.230, AMC3 ORO.FC.230, GM1 ORO.FC.230, AMC1 ORO.FC.A.245, AMC1 ORO.FC.A.245(d);(e)(2), AMC1 ORO.FC.320, AMC1 ORO.FC.325, AMC1 ORO.FC.330 GM1 ORO.FC.330 AMC1 ORO.CC.115(e), which apply from 26/3/2023)
	2022/017/R	Amendment 22	3/9/2022
CS-FTL.1	2014/002/R	**Issue 1 (initial)**	10/2/2014
AMC&GM to Part-CAT	2014/015/R	**Issue 2**	1/7/2014
	2014/029/R	Amendment 1	27/9/2014
	2015/007/R	Amendment 2	31/1/2015

	2015/021/R	Amendment 3	13/10/2015
	2015/030/R	Amendment 4	18/12/2015
	2016/004/R	Amendment 5	23/7/2017
	2016/015/R	Amendment 6	3/8/2016
	2016/012/R	Amendment 7	14/9/2016
	2016/022/R	Amendment 8	1/7/2018
	2017/002/R	Amendment 9	9/3/2017
	2017/003/R	Amendment 10	1/1/2019
	2017/004/R	Amendment 11	10/3/2017
	2017/008/R	Amendment 12	31/3/2017
	2017/023/R	Amendment 13	15/12/2017
	2018/003/R	Amendment 14	8/4/2019
	2018/012/R	Amendment 15	14/8/2020
	2019/008/R	Amendment 16	9/7/2019
	2019/019/R	Amendment 17	18/9/2019
	2021/005/R	Amendment 18	24/4/2021
	2021/008/R	Amendment 19	30/6/2021
	2022/005/R	Amendment 20	30/10/2022
	2022/012/R	Amendment 21	30/10/2022
	2022/014/R	Amendment 22	30/10/2022
AMC&GM to Part-SPA	2012/019/R	**Issue 1 (initial)**	24/10/2012
	2013/020/R	Amendment 1	23/8/2013
	2015/022/R	Amendment 2	1/10/2016
	2016/020/R	Amendment 3	3/8/2016
	2016/022/R	Amendment 4	1/7/2018
	2017/004/R	Amendment 5	10/3/2017
	2017/009/R	Amendment 6	31/3/2017
	2019/008/R	Amendment 7	9/7/2019
	2019/019/R	Amendment 8	18/9/2019
	2021/005/R	Amendment 9	24/4/2021
	2021/008/R	Amendment 10	30/6/2021
	2022/005/R	Amendment 11	30/10/2022
	2022/012/R	Amendment 12	30/10/2022
	2022/014/R	Amendment 13	30/10/2022
AMC&GM to Part-NCC	2013/021/R	**Issue 1 (initial)**	23/8/2013
	2014/030/R	Amendment 1	27/9/2014
	2015/003/R	Amendment 2	30/01/2015
	2015/021/R	Amendment 3	13/10/2015
	2015/030/R	Amendment 4	18/12/2015
	2016/017/R	Amendment 5	3/8/2016
	2016/012/R	Amendment 6	14/9/2016
	2016/022/R	Amendment 7	1/7/2018
	2017/002/R	Amendment 8	9/3/2017
	2017/003/R	Amendment 9	1/1/2019
	2017/010/R	Amendment 10	31/3/2017
	2019/008/R	Amendment 11	9/7/2019

	2019/019/R	Amendment 12	18/9/2019
	2021/005/R	Amendment 13	24/4/2021
	2021/008/R	Amendment 14	30/6/2021
	2022/005/R	Amendment 15	30/10/2022
	2022/012/R	Amendment 16	30/10/2022
	2022/014/R	Amendment 17	30/10/2022
AMC&GM to Part-NCO	2014/016/R	**Issue 2**	1/7/2014
	2014/031/R	Amendment 1	27/9/2014
	2015/004/R	Amendment 2	31/1/2015
	2016/018/R	Amendment 3	3/8/2016
	2016/022/R	Amendment 4	1/7/2018
	2017/003/R	Amendment 5	1/1/2019
	2017/011/R	Amendment 6	31/3/2017
	2018/003/R	Amendment 7	8/4/2019
	2019/008/R	Amendment 8	9/7/2019
	2019/019/R	Amendment 9	18/9/2019
	2021/005/R	Amendment 10	24/4/2021
	2021/008/R	Amendment 11	30/6/2021
	2022/005/R	Amendment 12	30/10/2022
	2022/012/R	Amendment 13	30/10/2022
	2022/014/R	Amendment 14	30/10/2022
AMC&GM to Part-SPO	2014/018/R	**Issue 1 (initial)**	1/7/2014
	2014/032/R	Amendment 1	27/9/2014
	2015/006/R	Amendment 2	31/1/2015
	2015/021/R	Amendment 3	13/10/2015
	2015/030/R	Amendment 4	18/12/2015
	2016/021/R	Amendment 5	3/8/2016
	2016/012/R	Amendment 6	14/9/2016
	2016/022/R	Amendment 7	1/7/2018
	2017/003/R	Amendment 8	1/1/2019
	2017/012/R	Amendment 9	31/3/2017
	2018/003/R	Amendment 10	8/4/2019
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	2021/008/R	Amendment 14	30/6/2021
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	2022/012/R	Amendment 16	30/10/2022
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COVER REGULATION

COMMISSION REGULATION (EU) No 965/2012

of 5 October 2012

laying down technical requirements and administrative procedures related to air operations pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council

Regulation (EU) No 965/2012

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EC) No 216/2008 of the European Parliament and of the Council of 20 February 2008 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency, and repealing Council Directive 91/670/EEC, Regulation (EC) No 1592/2002 and Directive 2004/36/EC[1], and in particular Articles 8(5) and 10(5) thereof,

Whereas:

(1) Operators and personnel involved in the operation of certain aircraft have to comply with the relevant essential requirements set out in Annex IV to Regulation (EC) No 216/2008.

(2) Regulation (EC) No 216/2008 requires that Member States, in addition to their oversight of certificates that they have issued, conduct investigations, including ramp inspections, and shall take any measure, including the grounding of aircraft, to prevent the continuation of an infringement.

(3) In accordance with Regulation (EC) No 216/2008 the Commission should adopt the necessary implementing rules for establishing the conditions for the safe operation of aircraft.

(4) In order to ensure a smooth transition and a high level of civil aviation safety in the European Union, implementing measures should reflect the state of the art, including best practices, and scientific and technical progress in the field of air operations. Accordingly, technical requirements and administrative procedures agreed under the auspices of the International Civil Aviation Organisation (hereinafter 'ICAO') and the European Joint Aviation Authorities until 30 June 2009, as well as existing legislation pertaining to a specific national environment, should be considered.

(5) It is necessary to provide sufficient time for the aeronautical industry and Member State administrations to adapt to the new regulatory framework and to recognise under certain conditions the validity of certificates issued before this Regulation applies.

(6) As this Regulation constitutes an implementing measure referred to in Articles 8(5) and 10(5) of Regulation (EC) No 216/2008, Annex III to Council Regulation (EEC) No 3922/91[2] and Directive 2004/36/EC of the European Parliament and of the Council[3] shall be considered repealed in accordance with Article 69(3) and 69(5) of Regulation (EC) No 216/2008. However, Annex III should remain in place temporarily until the transitional periods foreseen in this Regulation have expired and for those areas for which no implementing measures have yet been adopted.

1 OJ L 79, 19.3.2008, p. 1.

2 OJ L 373, 31.12.1991, p. 4.

3 OJ L 143, 30.4.2004, p. 76.

Similarly, Directive 2004/36/EC should remain applicable temporarily until the transitional periods foreseen in this Regulation have expired.

(7) The European Aviation Safety Agency prepared draft implementing rules and submitted them as an opinion to the Commission in accordance with Article 19(1) of Regulation (EC) No 216/2008.

(8) The measures provided for in this Regulation are in accordance with the opinion of the Committee established by Article 65 of Regulation (EC) No 216/2008,

HAS ADOPTED THIS REGULATION:

Article 1 - Subject matter and scope

Regulation (EU) 2018/1975

1. This Regulation lays down detailed rules for air operations with aeroplanes and helicopters, including ramp inspections of aircraft of operators under the safety oversight of another State when landed at aerodromes located in the territory subject to the provisions of the Treaties.

2. This Regulation also lays down detailed rules on the conditions for issuing, maintaining, amending, limiting, suspending or revoking the certificates of operators of aircraft referred to in points (b) (i) and (ii) of Article 2(1) of Regulation (EU) 2018/1139, except for balloons and sailplanes, engaged in commercial air transport operation, the privileges and responsibilities of the holders of certificates as well as conditions under which operations shall be prohibited, limited or subject to certain conditions in the interest of safety.

3. This Regulation also lays down detailed rules on the conditions and procedures for the declaration by operators engaged in commercial specialised operations of aeroplanes and helicopters or in non-commercial operation of complex motor-powered aircraft, including non-commercial specialised operations of complex motor-powered aircraft, of their capability and the availability of the means to discharge the responsibilities associated with the operation of aircraft, and for the oversight of such operators.

4. This Regulation also lays down detailed rules on the conditions under which certain high risk commercial specialised operations shall be subject to authorisation in the interest of safety, and on the conditions for issuing, maintaining, amending, limiting, suspending or revoking the authorisations.

5. This Regulation shall not apply to air operations within the scope of Article 1(2)(a) of Regulation (EC) No 216/2008.

6. This Regulation shall not apply to air operations with airships.

7. This Regulation shall not apply to air operations with balloons and sailplanes. However, in respect of such air operations with balloons, other than tethered gas balloons, and sailplanes, the requirements in respect of oversight of Article 3 shall apply.

Article 2 - Definitions

Regulation (EU) 2019/1384

For the purposes of this Regulation:

(1) ‘aeroplane’ means an engine-driven fixed-wing aircraft heavier than air that is supported in flight by the dynamic reaction of the air against its wings;

(1a) ‘helicopter’ means a heavier-than-air aircraft supported in flight chiefly by the reactions of the air on one or more power-driven rotors on substantially vertical axes;

(1b) 'balloon' means a manned lighter-than-air aircraft which is not power-driven and sustains flight through the use of either a lighter-than-air gas or an airborne heater, including gas balloons, hot-air balloons, mixed balloons and, although power-driven, hot-air airships;

(1c) 'sailplane' means a heavier-than-air aircraft that is supported in flight by the dynamic reaction of the air against its fixed lifting surfaces, the free flight of which does not depend on an engine;

(1d) 'commercial operation' means any operation of an aircraft, in return for remuneration or other valuable consideration, which is available for the public or, when not made available to the public, which is performed under a contract between an operator and a customer, where the latter has no control over the operator;

(1e) 'tethered gas balloon' means a gas balloon with a tether system that continuously anchors the balloon to a fixed point during operation;

(2) 'performance class B aeroplanes' means aeroplanes powered by propeller engines with a maximum operational passenger seating configuration of nine or less and a maximum take-off mass of 5 700 kg or less;

(3) 'public interest site (PIS)' means a site used exclusively for operations in the public interest;

(4) 'operation in performance class 1' means an operation that, in the event of failure of the critical engine, the helicopter is able to land within the rejected take-off distance available or safely continue the flight to an appropriate landing area, depending on when the failure occurs;

(5) 'performance-based navigation (PBN)' means area navigation based on performance requirements for aircraft operating along an ATS route, on an instrument approach procedure or in a designated airspace;

(6) 'air taxi operation' means, for the purpose of flight time and duty time limitations, a non-scheduled on demand commercial air transport operation with an aeroplane with a maximum operational passenger seating configuration ('MOPSC') of 19 or less;

(7) 'specialised operation' means any operation, other than commercial air transport operation, where the aircraft is used for specialised activities such as agriculture, construction, photography, surveying, observation and patrol, aerial advertisement, maintenance check flights;

(8) 'high risk commercial specialised operation' means any commercial specialised aircraft operation carried out over an area where the safety of third parties on the ground is likely to be endangered in the event of an emergency, or, as determined by the competent authority of the place where the operation is conducted, any commercial specialised aircraft operation that, due to its specific nature and the local environment in which it is conducted, poses a high risk, in particular to third parties on the ground;

(9) 'introductory flight' means any operation against remuneration or other valuable consideration consisting of an air tour of short duration for the purpose of attracting new trainees or new members, performed either by a training organisation referred to in Article 10a of Commission Regulation (EU) No 1178/2011[1] or by an organisation created with the aim of promoting aerial sport or leisure aviation;

[1] Commission Regulation (EU) No 1178/2011 of 3 November 2011 laying down technical requirements and administrative procedures related to civil aviation aircrew pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council (OJ L 311, 25.11.2011, p. 1).

(10) 'competition flight' means any flying activity where the aircraft is used in air races or contests, as well as where the aircraft is used to practice for air races or contests and to fly to and from racing or contest events;

(11) 'flying display' means any flying activity deliberately performed for the purpose of providing an exhibition or entertainment at an advertised event open to the public, including where the aircraft is used to practice for a flying display and to fly to and from the advertised event.

Additional definitions are laid down in Annex I for the purposes of Annexes II to VIII.

GM1 Article 2(1)(d) Definitions

ED Decision 2019/019/R

NON-COMMERCIAL OPERATIONS — EXAMPLES

The following examples of operations are not covered by the definition of commercial operations or by that of specialised operations. They are identified as non-commercial operations. Some of these flights are listed by an AOC holder in its operations manual Part-A, ch. 8.7 as non-commercial operations (as specified in AMC3 ORO.MLR.100) and covered by the provisions of ORO.AOC.125.

Some of these operations are performed on an irregular basis. The operator and its crew members may consider them as non-routine operations, situated outside their operational routine. This constitutes a risk that the operator should include in its risk assessment process.

The operations listed below are performed with aircraft having a certificate of airworthiness or a permit to fly and being already listed on an AOC or on a declaration. They are grouped by the purpose of the flight.

Demonstration flights

(a) A flight performed with the purpose of demonstrating:

(1) an aircraft's handling, performance and functionalities to buyers or lessees;

(2) an aircraft's flying characteristics or the operational procedures to the competent authority, for verification of compliance with the operational requirements, as per ARO.GEN.310(a).

Other terms used: (route) proving flight; operational evaluation flight.

(b) Flight at the end of lease or upon transfer of ownership: a flight performed at the request of the operator to verify compliance of the aircraft with the contractual specifications of the lessee/lessor or buyer.

Other term used: acceptance flight.

(c) 'Public relations (PR) flight': a flight carrying official or media representatives as non-paying passengers. Sometimes personnel of the operator are included. The PR flight is performed in the interest of the operator's own business.

Testing the results of maintenance work is outside the scope of demonstration flights. Such flights are not expected to execute flight manoeuvres where the aircraft might react with an unexpected behaviour. This is covered by a maintenance check flight (listed below).

Maintenance check flights

(d) Maintenance check flight (MCF)

The definition of an MCF is provided in Annex I to Regulation (EU) No 965/2012. The provisions on MCF are developed in Annex VII (Part-NCO), Subpart E Section 6 and Annex VIII (Part-SPO), Subpart E Section 5.

Ferry flights – flights changing the location of the aircraft

A ferry flight could be performed for the following purposes:

(e) The aircraft is moved to and from a maintenance base. The aircraft may be operated under the permit-to-fly conditions.

Examples:

(1) unpressurised flight,

(2) gear-down flight,

(3) flight with one engine inoperative.

(f) The aircraft is moved from one location to another, e.g. from the manufacturer, refurbishment location, previous owner, lessor/lessee, long-term storage to the operator's base.

Other term used: delivery flight.

(g) The aircraft and its aircrew are positioned to an aerodrome from which a further commercial air transport (CAT) operation will be performed.

Other term used: positioning flight.

(h) The aircraft is moved from its current location to a secure location for various reasons (e.g. to remove it from a hazardous area).

Other term used: recovery flight.

Training flights

(i) A flight for instructional purposes for the operator's own flight crew.

Operator training and checking flight: a flight performed by the operator with the purpose of training, checking and/or familiarising a flight crew member with the operator's procedures linked to the aircraft being operated. A training flight is conducted using the procedures detailed in the operator's documentation.

Line flying under supervision (LIFUS), line checks and similar flights are not included in this category, as they are usually performed during commercial operations (CAT flights).

Other non-commercial flights

(j) 'Corporate flight': a flight conducted for business purposes: the operator may carry its own personnel and/or property in the interest of business.

Other terms used: business flight, private flight.

(k) 'Leisure flight': a flight operated by an operator for personal or recreational purposes, not associated with a business or a profession.

Other term used: private flight.

(l) Managed flight: a flight operated by an operator for the business purposes of the aircraft owner, with no remuneration or other valuable consideration involved.

Charity flights, humanitarian flights

(m) 'Charity flight': a flight performed for the benefit of a registered charity organisation, carrying persons and/or goods. For such a flight, the proceeds of the raffled flight go to the charity. Any additional proceeds are limited to the recovery of direct costs of the flight.

(n) 'Humanitarian flight': a flight with the purpose of carrying relief personnel and/or life-saving supplies (basic necessities) during or after an emergency or a natural disaster, or to evacuate persons from an endangered area.

Article 3 - Oversight capabilities

Regulation (EU) 2018/394

1. Member States shall designate one or more entities as the competent authority within that Member State with the necessary powers and allocated responsibilities for the certification and oversight of persons and organisations subject to Regulation (EC) No 216/2008 and its implementing rules.

   The administration and management systems of the competent authorities of the Member States and of the Agency shall comply with the requirements specified in Annex II.

2. If a Member State designates more than one entity as competent authority:

   (a) the areas of competence of each competent authority shall be clearly defined in terms of responsibilities and geographic limitation; and

   (b) coordination shall be established between those entities to ensure effective oversight of all organisations and persons subject to Regulation (EC) No 216/2008 and its implementing rules within their respective remits.

3. Member States shall ensure that the competent authority(ies) has(ve) the necessary capability to ensure the oversight of all persons and organisations covered by their oversight programme, including sufficient resources to fulfil the requirements of this Regulation.

4. Member States shall ensure that competent authority personnel do not perform oversight activities when there is evidence that this could result directly or indirectly in a conflict of interest, in particular when relating to family or financial interest.

5. Personnel authorised by the competent authority to carry out certification and/or oversight tasks shall be empowered to perform at least the following tasks:

   (a) examine the records, data, procedures and any other material relevant to the execution of the certification and/or oversight task;

   (b) take copies of or extracts from such records, data, procedures and other material;

   (c) ask for an oral explanation on site;

   (d) enter relevant premises, operating sites or means of transport;

   (e) perform audits, investigations, assessments, inspections, including ramp inspections and unannounced inspections;

   (f) take or initiate enforcement measures as appropriate.

6. The tasks under paragraph 5 shall be carried out in compliance with the legal provisions of the relevant Member State.

GM1 Article 3(5)(e) Oversight capabilities

ED Decision 2019/019/R

INSPECTIONS BY PERSONNEL AUTHORISED BY THE COMPETENT AUTHORITY

Inspections performed by personnel authorised by the competent authority to perform oversight or certification tasks means announced or unannounced inspections, including in-flight inspections, to oversee any operations in accordance with this Regulation.

Article 4 - Ramp inspections

Regulation (EU) 2018/1042

1. Ramp inspections of aircraft of operators under the safety oversight of another Member State or of a third country shall be carried out in accordance with Subpart RAMP of Annex II.

2. Member States shall ensure that alcohol testing of flight crew and cabin crew members is carried out with regard to operators under their own oversight as well as with regard to operators under the oversight of another Member State or of a third country. Such testing shall be performed by ramp inspectors within the framework of the ramp inspection programme of Subpart RAMP of Annex II.

3. By way of derogation from paragraph 2, Member States may ensure alcohol testing of flight crew and cabin crew members to be carried out by other authorised officials and outside the framework of the ramp inspection programme of Subpart RAMP of Annex II, provided that such alcohol testing meets the same objectives and adheres to the same principles as tests carried out under the framework of Subpart RAMP of Annex II. Results of such alcohol tests shall be included in the centralised database in accordance with point (b) of ARO.RAMP.145.

4. Member States may carry out additional testing for psychoactive substances other than alcohol. In that case, the Member State shall notify the European Aviation Safety Agency ('the Agency') and the Commission.

GM1 Article 4(3) Ramp inspections

ED Decision 2018/012/R

GENERAL — ALCOHOL TESTING

If alcohol testing of flight crew and cabin crew is carried out by other authorised officials, e.g. by the police, and outside the framework of the ramp inspection programme of Subpart RAMP of Annex II, those other authorised officials do not need to comply with the requirements for qualification of inspectors of Subpart RAMP of Annex II. Member States should ensure that these officials are qualified for carrying out alcohol tests.

Article 5 - Air operations

Regulation (EU) 2021/2237

1. Operators shall only operate an aeroplane or a helicopter for the purpose of commercial air transport (hereinafter "CAT") operations as specified in Annexes III and IV.

1a. Operators engaged in CAT operations starting and ending at the same aerodrome/operating site with Performance class B aeroplanes or non-complex helicopters shall comply with the relevant provisions of Annexes III and IV.

2. Operators shall comply with the relevant provisions of Annex V when operating:
   (a) aeroplanes and helicopters used for:
      (i) operations using performance-based navigation (PBN);
      (ii) operations in accordance with minimum navigation performance specifications (MNPS);
      (iii) operations in airspace with reduced vertical separation minima (RVSM);
      (iv) low-visibility operations (LVOs) or operations with operational credits;
   (b) aeroplanes and helicopters used for the transport of dangerous goods (DG);
   (c) two-engined aeroplanes used for extended range operations (ETOPS) in commercial air transport;
   (d) helicopters used for commercial air transport operations with the aid of night vision imaging systems (NVIS);
   (e) helicopters used for commercial air transport hoist operations (HHO);
   (f) helicopters used for commercial air transport emergency medical service operations (HEMS);
   (g) helicopters used for offshore operations (HOFO).
3. Operators of complex motor-powered aeroplanes and helicopters involved in non-commercial operations shall declare their capability and means to discharge their responsibilities associated with the operation of aircraft and operate the aircraft in accordance with the provisions specified in Annex III and Annex VI. Such operators when engaged in non-commercial specialised operations shall operate the aircraft in accordance with the provisions specified in Annex III and VIII instead.
4. Operators of other-than-complex motor-powered aeroplanes and helicopters involved in non-commercial operations, including non-commercial specialised operations, shall operate the aircraft in accordance with the provisions set out in Annex VII.
5. Training organisations referred to in Article 10a of Regulation (EU) No 1178/2011 and having their principal place of business in a Member State shall, when conducting flight training into, within or out of the Union, operate:
   (a) complex motor-powered aeroplanes and helicopters in accordance with the provisions specified in Annex VI;
   (b) other aeroplanes and helicopters in accordance with the provisions specified in Annex VII.
6. Operators shall only operate an aeroplane or a helicopter for the purpose of commercial specialised operations in accordance with the requirements specified in Annexes III and VIII.
7. Flights taking place immediately before, during or immediately after specialised operations and directly connected to those operations shall be operated in accordance with paragraphs 3, 4 and 6, as applicable. Except for crew members, persons other than those indispensable to the mission shall not be carried on board.

Article 6 - Derogations

Regulation (EU) 2019/1384

2. By way of derogation from Article 5(1), aircraft referred to in Article 4(5) of Regulation (EC) No 216/2008 shall, in the case of aeroplanes, be operated under the conditions set out in Commission Decision C(2009) 7633 of 14 October 2009 when used in CAT operations. Any change to the operation that affects the conditions set out in that Decision shall be notified to the Commission and the European Aviation Safety Agency (hereinafter 'the Agency') before the change is implemented.

   A Member State, other than an addressee of Decision C(2009)7633, which intends to use the derogation provided for in that Decision shall notify its intention to the Commission and the Agency before the derogation is implemented. The Commission and the Agency shall assess to what extent the change or the intended use deviates from the conditions of Decision C(2009)7633 or impacts on the initial safety assessment performed in the context of that Decision. If the assessment shows that the change or the intended use does not correspond to the initial safety assessment done for Decision C(2009)7633, the Member State concerned shall submit a new derogation request in accordance with Article 14(6) of Regulation (EC) No 216/2008.

3. By way of derogation from Article 5 of this Regulation and without prejudice to point (b) of Article 18(2) of Regulation (EU) 2018/1139 and to Subpart P of Annex I to Commission Regulation (EU) No 748/20121 concerning the permit to fly, the following flights shall continue to be operated under the requirements specified in the national law of the Member State in which the operator has its principal place of business, or, where the operator has no principal place of business, the place where the operator is established or resides:

   (a) flights related to the introduction or modification of aeroplane or helicopter types conducted by design or production organisations within the scope of their privileges;

   (b) flights carrying no passengers or cargo, where the aeroplane or helicopter is ferried for refurbishment, repair, inspections, delivery, export or similar purposes, provided that the aircraft is not listed on an air operator certificate or on a declaration.

4. Notwithstanding Article 5, Member States may, until 30 June 2018, continue to require a specific approval and additional requirements regarding operational procedures, equipment, crew qualification and training for CAT helicopter offshore operations in accordance with their national law. Member States shall notify the Commission and the Agency of the additional requirements being applied to such specific approvals. Those requirements shall not be less restrictive than those of Annexes III and IV.

4a. By way of derogation from Article 5(1) and (6), the following operations with other-than-complex motor-powered aeroplanes and helicopters, may be conducted in accordance with Annex VII:

   (a) cost-shared flights by private individuals, on the condition that the direct cost is shared by all the occupants of the aircraft, pilot included and the number of persons sharing the direct costs is limited to six;

   (b) competition flights or flying displays, on the condition that the remuneration or any valuable consideration given for such flights is limited to recovery of direct costs and a

[1] Commission Regulation (EU) No 748/2012 of 3 August 2012 laying down implementing rules for the airworthiness and environmental certification of aircraft and related products, parts and appliances, as well as for the certification of design and production organisations (OJ L 224, 21.8.2012, p. 1).

proportionate contribution to annual costs, as well as prizes of no more than a value specified by the competent authority;

(c) introductory flights, parachute dropping, sailplane towing or aerobatic flights performed either by a training organisation having its principal place of business in a Member State and referred to in Article 10a of Regulation (EU) No 1178/2011, or by an organisation created with the aim of promoting aerial sport or leisure aviation, on the condition that the aircraft is operated by the organisation on the basis of ownership or dry lease, that the flight does not generate profits distributed outside of the organisation, and that whenever non-members of the organisation are involved, such flights represent only a marginal activity of the organisation.

5. Until 2 September 2017, exemptions granted before 22 March 2017 in accordance with Article 8(2) of Regulation (EEC) No 3922/91, as provided for in Article 6(5) of Regulation (EU) No 965/2012 as applicable before 22 March 2017, shall be considered to constitute approvals referred to in point (a) of CAT.POL.A.300 of Annex IV (Part-CAT). After 2 September 2017, those exemptions shall no longer be valid for the operation of single-engined aeroplanes.

   If any change to the operation of those aeroplanes that affects the conditions set out in those exemptions is envisaged between 22 March 2017 and 2 September 2017, that envisaged change shall be notified to the Commission and the Agency before it is implemented. The Commission and the Agency shall assess the envisaged change in accordance with Article 14(5) of Regulation (EC) No 216/2008.

6. Existing helicopter operations to/from a public interest site (PIS) may be conducted in derogation to CAT.POL.H.225 of Annex IV whenever the size of the PIS, the obstacle environment or the helicopter does not permit compliance with the requirements for operation in performance class 1. Such operations shall be conducted under conditions determined by Member States. Member States shall notify the Commission and the Agency of the conditions being applied.

7. [deleted with Reg. EU 2016/1199]

8. By way of derogation from the first sentence of Article 5(3), operators of complex motor-powered aeroplanes with a maximum certificated take-off mass (MCTOM) at or below 5 700 kg, equipped with turboprop engines, involved in non-commercial operations, shall operate those aircraft only in accordance with Annex VII.

9. By way of derogation from Article 5(5)(a), training organisations shall, when conducting flight training on complex motor-powered aeroplanes with a maximum certificated take-off mass (MCTOM) at or below 5 700 kg, equipped with turboprop engines, operate those aircraft in accordance with Annex VII.

GM1 Article 6.4a Derogations

ED Decision 2018/003/R

OTHER-THAN-COMPLEX MOTOR-POWERED AIRCRAFT

The term ‘other-than-complex motor-powered aircraft’ is used synonymously with the terms ‘other-than complex motor-powered aircraft’ and ‘other than complex motor-powered aircraft’. Whenever one of these terms is used, it includes also non-motor-powered aircraft such as sailplanes.

GM2 Article 6.4a(a);(b) Derogations

ED Decision 2014/019/R

DIRECT COST

'Direct cost' means the cost directly incurred in relation to a flight, e.g. fuel, airfield charges, rental fee for an aircraft. There is no element of profit.

GM3 Article 6.4a(a);(b) Derogations

ED Decision 2014/019/R

ANNUAL COST

'Annual cost' means the cost of keeping, maintaining and operating the aircraft over a period of one calendar year. There is no element of profit.

GM1 Article 6.4a(c) Derogations

ED Decision 2014/019/R

ORGANISATION CREATED WITH THE AIM OF PROMOTING AERIAL SPORT OR LEISURE AVIATION

An 'organisation created with the aim of promoting aerial sport or leisure aviation' means a non-profit organisation, established under applicable national law for the sole purpose of gathering persons sharing the same interest in general aviation to fly for pleasure or to conduct parachute jumping. The organisation should have aircraft available.

GM2 Article 6.4a(c) Derogations

ED Decision 2014/019/R

MARGINAL ACTIVITY

The term 'marginal activity' should be understood as representing a very minor part of the overall activity of an organisation, mainly for the purpose of promoting itself or attracting new students or members. An organisation intending to offer such flights as regular business activity is not considered to meet the condition of marginal activity. Also, flights organised with the sole intent to generate income for the organisation, are not considered to be a marginal activity.

Article 7 - Air operator certificates

Regulation (EU) No 965/2012

1. Air operator certificates (AOCs) issued by a Member State to CAT operators of aeroplanes before this Regulation applies in accordance with Regulation (EEC) No 3922/91 shall be deemed to have been issued in accordance with this Regulation.

   However, no later than 28 October 2014:

   (a) operators shall adapt their management system, training programmes, procedures and manuals to be compliant with Annexes III, IV and V, as relevant;

   (b) the AOC shall be replaced by certificates issued in accordance with Annex II to this Regulation.

2. AOCs issued by a Member State to CAT operators of helicopters before this Regulation applies shall be converted into AOCs compliant with this Regulation in accordance with a conversion report established by the Member State that issued the AOC, in consultation with the Agency.

The conversion report shall describe:

(a) the national requirements on the basis of which the AOCs were issued;

(b) the scope of privileges that were given to the operators;

(c) the differences between the national requirements on the basis of which the AOCs were issued and the requirements of Annexes III, IV and V, together with an indication of how and when the operators will be required to ensure full compliance with those Annexes.

The conversion report shall include copies of all documents necessary to demonstrate the elements set out in points (a) to (c), including copies of the relevant national requirements and procedures.

Article 8 - Flight time limitations

Regulation (EU) 2018/394

1. CAT operations shall be subject to the requirements of Subpart FTL of Annex III.

2. By way of derogation from paragraph 1, air taxi, emergency medical service and single pilot CAT operations by aeroplanes shall be subject to the requirements specified in the national law referred to in Article 8(4) of Regulation (EEC) No 3922/91 and in Subpart Q of Annex III to that Regulation.

3. By way of derogation from paragraph 1, CAT operations with helicopters and CAT operations with sailplanes shall comply with the requirements specified in the national law of the Member State in which the operator has its principal place of business.

4. Non-commercial operations, including non-commercial specialised operations, with complex motor-powered aeroplanes and helicopters, as well as commercial specialised operations with aeroplanes, helicopters and sailplanes shall comply as regards flight time limitations, with the requirements specified in the national law of the Member State in which the operator has its principal place of business, or, where the operator has no principal place of business, the place where the operator is established or resides.

Article 9 - Minimum equipment lists

Regulation (EU) No 71/2014

Minimum equipment lists ('MEL') approved by the State of Operator or Registry before the application of this Regulation, are deemed to be approved in accordance with this Regulation and may continue to be used by the operator.

After the entry into force of this Regulation any change to the MEL referred to in the first subparagraph for which a Master Minimum Equipment List ('MMEL') is established as part of the operational suitability data in accordance with Commission Regulation (EU) No 748/2012[1] shall be made in compliance with point ORO.MLR.105 of Section 2 of Annex III to this Regulation at the earliest opportunity and not later than 18 December 2017 or two years after the operational suitability data was approved, whichever is the latest.

Any change to an MEL referred to in the first subparagraph, for which an MMEL has not been established as part of the operational suitability data, shall continue to be made in accordance with the MMEL accepted by the State of Operator or Registry as applicable.

[1] OJ L 224, 21.8.2012, p. 1.

Article 9a - Flight and cabin crew training

Regulation (EU) No 71/2014

Operators shall ensure that flight crew and cabin crew members who are already in operation and have completed training in accordance with Subparts FC and CC of Annex III which did not include the mandatory elements established in the relevant operational suitability data, undertake training covering those mandatory elements not later than 18 December 2017 or two years after the approval of the operational suitability data, whichever is the latest.

Article 9aa - Flight crew requirements for maintenance check flights

Regulation (EU) 2019/1387

A pilot having acted, before 25 September 2019, as a pilot-in-command on a maintenance check flight that in accordance with the definition in point SPO.SPEC.MCF.100 in Annex VIII is categorised as a Level A maintenance check flight, shall be given credit for the purpose of complying with point SPO.SPEC.MCF.115(a)(1) of that Annex. In that case, the operator shall ensure that the pilot-in-command receives a briefing on any differences identified between the operating practices established before 25 September 2019 and the obligations provided in Section 5 of Subpart E of Annex VIII to this Regulation including those derived from the related procedures established by the operator.

Article 9b - Review

Regulation (EU) 2021/1296

1. The Agency shall conduct a continuous review of the effectiveness of the provisions concerning flight and duty time limitations and rest requirements contained in Annexes II and III. No later than 18 February 2019 the Agency shall produce a first report on the results of this review.

   That review shall involve scientific expertise and shall be based on operational data gathered, with the assistance of Member States, on a long-term basis after the date of application of this Regulation.

   The review shall assess the impact of at least the following on the alertness of aircrew:

   (a) duties of more than 13 hours at the most favourable times of the day;

   (b) duties of more than 10 hours at less favourable times of the day;

   (c) duties of more than 11 hours for crew members in an unknown state of acclimatisation;

   (d) duties including a high level of sectors (more than 6);

   (e) on-call duties such as standby or reserve followed by flight duties; and

   (f) disruptive schedules.

2. The Agency shall conduct a continuous review of the effectiveness of the provisions concerning support programmes, the psychological assessment of flight crew and the systematic and random testing of psychoactive substances to ensure the medical fitness of flight crew and cabin crew members set out in Annexes II and IV. No later than 14 August 2023, the Agency shall produce a first report on the results of this review.

   That review shall involve relevant expertise and shall be based on data gathered, with the assistance of Member States and the Agency, on a long-term basis.

Article 10 - Entry into force[1]

Regulation (EU) 2021/2237

1. This Regulation shall enter into force on the third day following that of its publication in the *Official Journal of the European Union*.

   It shall apply from 28 October 2012.

Amending Regulation (EU) No 800/2013 shall apply from 25 August 2013[2].

Amending Regulation (EU) No 71/2014 shall enter into force on 17 February 2014[3]. It shall apply not later than 18 December 2017 or two years after the approval of the operational suitability data, whichever is the latest.

Amending Regulation (EU) No 83/2014 shall apply from 18 February 2016, except for the provisions of ORO.FTL.205(e), which shall apply only from 17 February 2017 by way of derogation[4].

Amending Regulation (EU) No 379/2014 shall apply from 1 July 2014[5].

Amending Regulation (EU) 2015/140 shall apply from 18 February 2015, except for the provisions of Article 9b 'Review', which shall apply from 18 February 2016[6].

Amending Regulation (EU) 2015/640 shall apply from 14 May 2015[7].

Amending Regulation (EU) 2015/1329 shall apply from 1 October 2015, except for the provisions of ORO.AOC.110(d), which shall apply only from 25 August 2017 by way of derogation[8].

Amending Regulation (EU) 2015/2338 shall apply from 5 January 2016[9].

Amending Regulation (EU) 2016/1199 shall apply from 25 August 2016[10], except for the provisions related to the helicopter offshore operations, which shall apply from 1 July 2018, and the provisions related to the certification and oversight of data services providers, which shall apply from 1 January 2019.

Amending Regulation (EU) 2017/363 shall apply from 22 March 2017[11].

Amending Regulation (EU) 2018/394 shall apply from 8 April 2019[12].

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1 This version of Article 10 is a compilation of the provisions related to the entry into force and application of all previous amendments to Regulation (EU) No 965/2012 to date. For the official version of each amending regulation, please consult the Official Journal.

2 Please consult Regulation (EU) No 800/2013 for the official version.

3 Please consult Regulation (EU) No 71/2014 for the official version.

4 Please consult Regulation (EU) No 83/2014 for the official version.

5 Please consult Regulation (EU) No 379/2014 for the official version.

6 Please consult Regulation (EU) 2015/140 for the official version.

7 Please consult Regulation (EU) 2015/640 for the official version.

8 Please consult Regulation (EU) 2015/1329 for the official version.

9 Please consult Regulation (EU) 2015/2338 for the official version.

10 Please consult Regulation (EU) 2016/1199 for the official version.

11 Please consult Regulation (EU) 2017/363 for the official version.

12 Please consult Regulation (EU) 2018/394 for the official version.

Amending Regulation (EU) 2018/1042 shall apply from 14 August 2020, except for the provisions related to CAT.IDE.A.150 and SPO.IDE.A.130, which shall apply from 14 August 2018[1].

Amending Regulation (EU) 2018/1975 shall apply from 9 July 2019[2].

Amending Regulation (EU) 2019/1384 shall enter into force on 24 September 2019[3].

Amending Regulation (EU) 2019/1387 shall enter into force on 25 September 2019[4].

The following points of the Annex to Regulation (EU) 2019/1387 shall apply from 25 September 2019:

— point (4)(a);

— point (6)(b);

— point (8)(b).

The following points of point (4) of the Annex to Regulation (EU) 2019/1387 shall apply from 5 November 2020:

— point (c);

— point (d);

— point (e);

— point (f);

— point (g);

— point (n);

— point (q).

Regulation (EU) 2020/745, amending the dates of application of Regulation (EU) 2018/1042, shall enter into force on 5 June 2020[5].

Regulation (EU) 2020/1176, amending the dates of application of Regulation (EU) 2019/1387, shall enter into force on 11 August 2020[6].

Regulation (EU) 2020/2036 shall enter into force on 1 January 2021[7].

Regulation (EU) 2021/1296 shall enter into force on 25 August 2021[8].

Regulation (EU) 2021/2237 shall enter into force on 5 January 2022[9].

Regulation (EU) 2022/2203 shall enter into force on 4 December 2022[10].

1 Please consult Regulation (EU) 2018/1042 for the official version.

2 Please consult Regulation (EU) 2018/1975 for the official version.

3 Please consult Regulation (EU) 2019/1384 for the official version.

4 Please consult Regulation (EU) 2019/1387 for the official version.

5 Please consult Regulation (EU) 2020/745 for the official version.

6 Please consult Regulation (EU) 2020/1176 for the official version.

7 Please consult Regulation (EU) 2020/2036 for the official version.

8 Please consult Regulation (EU) 2021/1296 for the official version.

9 Please consult Regulation (EU) 2021/2237 for the official version.

10 Please consult Regulation (EU) 2022/2203 for the official version.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Done at Brussels, 5 October 2012.

For the Commission

The President

José Manuel BARROSO

ANNEX I – DEFINITIONS

Annex I Definitions for terms used in Annexes II to VIII

Regulation (EU) 2021/2237

For the purpose of this Regulation, the following definitions shall apply:

(1) 'accelerate-stop distance available (ASDA)' means the length of the take-off run available plus the length of stopway, if such stopway is declared available by the State of the aerodrome and is capable of bearing the mass of the aeroplane under the prevailing operating conditions;

(2) 'acceptable means of compliance (AMC)' means non-binding standards adopted by the Agency to illustrate means to establish compliance with Regulation (EC) No 216/2008 and its Implementing Rules;

(3) 'acceptance checklist' means a document used to assist in carrying out a check on the external appearance of packages of dangerous goods and their associated documents to determine that all appropriate requirements have been met with;

(4) 'adequate aerodrome' means an aerodrome on which the aircraft can be operated, taking account of the applicable performance requirements and runway characteristics;

(5) For the purpose of passenger classification:

  (a) 'adult' means a person of an age of 12 years and above;

  (b) 'child/children' means persons who are of an age of two years and above but who are less than 12 years of age;

  (c) 'infant' means a person under the age of two years;

(6) 'aerodrome operating minima' means the limits of usability of an aerodrome for:

  (a) take-off, expressed in terms of runway visual range (RVR) and/or visibility and, if necessary, ceiling;

  (b) landing in 2D instrument approach operations, expressed in terms of visibility and/or RVR, minimum descent altitude/height (MDA/H) and, if necessary, ceiling;

  (c) landing in 3D instrument approach operations, expressed in terms of visibility and/or RVR and decision altitude/height (DA/H) as appropriate to the type and/or category of the operation;

(7) 'aided night vision imaging system (NVIS) flight' means, in the case of NVIS operations, that portion of a visual flight rules (VFR) flight performed at night when a crew member is using night vision goggles (NVG);

(8) 'aircraft' means a machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth's surface;

(8a) 'aircraft tracking' means a ground based process that maintains and updates, at standardised intervals, a record of the four dimensional position of individual aircraft in flight;

(8b) 'aircraft tracking system' means a system that relies on aircraft tracking in order to identify abnormal flight behaviour and provide alert;

(8c) 'alternate aerodrome' means an adequate aerodrome to which an aircraft may proceed when it becomes either impossible or inadvisable to proceed to or land at the aerodrome of intended landing, where the necessary services and facilities are available, where aircraft performance

requirements can be met, and which is operational at the expected time of use; 'alternate aerodrome' includes the following:

(a) 'take-off alternate aerodrome': an alternate aerodrome at which an aircraft would be able to land if it becomes necessary shortly after take-off and it is not possible to use the aerodrome of departure;

(b) 'en route alternate (ERA) aerodrome': an alternate aerodrome at which an aircraft would be able to land if a diversion becomes necessary while en route;

(c) 'fuel/energy en route alternate (fuel/energy ERA) aerodrome' means an ERA aerodrome that is required at the planning stage for use in the calculation of fuel/energy;

(d) 'destination alternate aerodrome': an alternate aerodrome at which an aircraft would be able to land if it becomes either impossible or inadvisable to land at the aerodrome of intended landing;

(9) 'alternative means of compliance' means those means that propose an alternative to an existing acceptable means of compliance or those that propose new means to establish compliance with Regulation (EC) No 216/2008 and its Implementing Rules for which no associated AMC have been adopted by the Agency;

(10) 'anti-icing', in the case of ground procedures, means a procedure that provides protection against the formation of frost or ice and accumulation of snow on treated surfaces of the aircraft for a limited period of time (hold-over time);

(11) [deleted with Reg. (EU) 2021/2237]

(11a) [deleted with Reg. (EU) 2018/1975]

(12) 'cabin crew member' means an appropriately qualified crew member, other than a flight crew or technical crew member, who is assigned by an operator to perform duties related to the safety of passengers and flight during operations;

(13) [deleted with Reg. (EU) 2021/2237]

(14) [deleted with Reg. (EU) 2021/2237]

(15) [deleted with Reg. (EU) 2021/2237]

(16) [deleted with Reg. (EU) 2021/2237]

(17) 'category A with respect to helicopters' means a multi-engined helicopter designed with engine and system isolation features specified in the applicable certification specification and capable of operations using take-off and landing data scheduled under a critical engine failure concept that assures adequate designated surface area and adequate performance capability for continued safe flight or safe rejected take-off in the event of engine failure;

(18) 'category B with respect to helicopters' means a single-engined or multi-engined helicopter that does not meet category A standards. Category B helicopters have no guaranteed capability to continue safe flight in the event of an engine failure, and unscheduled landing is assumed;

(18a) 'ceiling' means the height above the ground or water of the base of the lowest layer of cloud below 6 000 m (20 000 ft) covering more than half the sky;

(19) 'certification specifications' (CS) means technical standards adopted by the Agency indicating means to show compliance with Regulation (EC) No 216/2008 and its Implementing Rules and which can be used by an organisation for the purpose of certification;

(20) 'circling' means the visual phase of a circling approach operation;

(20a) 'circling approach operation' means a Type A instrument approach operation to bring an aircraft into position for landing on a runway/final approach and take-off area (FATO) that is not suitably located for a straight-in approach;

(21) 'clearway' means a defined rectangular area on the ground or water under the control of the appropriate authority, selected or prepared as a suitable area over which an aeroplane may make a portion of its initial climb to a specified height;

(22) 'cloud base' means the height of the base of the lowest observed or forecast cloud element in the vicinity of an aerodrome or operating site or within a specified area of operations, normally measured above aerodrome elevation or, in the case of offshore operations, above mean sea level;

(22a) 'cockpit voice recorder (CVR)' means a crash-protected flight recorder that uses a combination of microphones and other audio and digital inputs to collect and record the aural environment of the flight crew compartment and communications to, from and between the flight crew members;

(23) 'code share' means an arrangement under which an operator places its designator code on a flight operated by another operator, and sells and issues tickets for that flight;

(23a) 'competency' means a dimension of human performance that is used to reliably predict successful performance on the job and which is manifested and observed through behaviours that mobilise the relevant knowledge, skills and attitudes to carry out activities or tasks under specified conditions;

(23b) 'competency-based training' means assessment and training programmes that are characterised by a performance orientation, emphasis on standards of performance and their measurement and the development of training to the specified performance standards;

(23c) 'competency framework' means a complete set of identified competencies that are developed, trained and assessed in the operator's evidence-based training programme utilising scenarios that are relevant to operations and which is wide enough to prepare the pilot for both foreseen and unforeseen threats and errors;

(24) 'congested area' means in relation to a city, town or settlement, any area which is substantially used for residential, commercial or recreational purposes;

(25) 'contaminated runway' means a runway of which a significant portion of its surface area (whether in isolated areas or not) within the length and width being used is covered by one or more of the substances listed under the runway surface condition descriptors;

(26) 'contingency fuel/energy' means the fuel/energy required to compensate for unforeseen factors that could have an influence on the fuel/energy consumption to the destination aerodrome;

(27) 'continuous descent final approach (CDFA)' means a technique, consistent with stabilised approach procedures, for flying the final approach segment (FAS) of an instrument non-precision approach (NPA) procedure as a continuous descent, without level-off, from an altitude/height at or above the final approach fix altitude/height:

(a) for straight-in approach operations, to a point approximately 15 m (50 ft) above the landing runway threshold or the point where the flare manoeuvre begins; or

(b) for circling approach operations, until MDA/H or visual flight manoeuvre altitude/height is reached;

(28) 'converted meteorological visibility (CMV)' means a value, equivalent to an RVR, which is derived from the reported meteorological visibility;

(29) 'crew member' means a person assigned by an operator to perform duties on board an aircraft;

(30) 'critical phases of flight' in the case of aeroplanes means the take-off run, the take-off flight path, the final approach, the missed approach, the landing, including the landing roll, and any other phases of flight as determined by the pilot-in-command or commander;

(31) 'critical phases of flight' in the case of helicopters means taxiing, hovering, take-off, final approach, missed approach, the landing and any other phases of flight as determined by the pilot-in-command or commander;

(31a) 'current fuel/energy scheme' means the approved fuel/energy scheme that is currently used by the operator;

(32) [deleted with Reg. (EU) 2019/1387]

(33) 'dangerous goods (DG)' means articles or substances which are capable of posing a risk to health, safety, property or the environment and which are shown in the list of dangerous goods in the technical instructions or which are classified according to those instructions;

(34) 'dangerous goods accident' means an occurrence associated with and related to the transport of dangerous goods by air which results in fatal or serious injury to a person or major property damage;

(35) 'dangerous goods incident' means:

(a) an occurrence other than a dangerous goods accident associated with and related to the transport of dangerous goods by air, not necessarily occurring on board an aircraft, which results in injury to a person, property damage, fire, breakage, spillage, leakage of fluid or radiation or other evidence that the integrity of the packaging has not been maintained;

(b) any occurrence relating to the transport of dangerous goods which seriously jeopardises an aircraft or its occupants;

(35a) 'decision altitude (DA) or decision height (DH)' means a specified altitude or height in a 3D instrument approach operation at which a missed approach procedure must be initiated if the required visual reference to continue the approach has not been established;

(36) 'de-icing', in the case of ground procedures, means a procedure by which frost, ice, snow or slush is removed from an aircraft in order to provide uncontaminated surfaces;

(37) 'defined point after take-off (DPATO)' means the point, within the take-off and initial climb phase, before which the helicopter's ability to continue the flight safely, with the critical engine inoperative, is not assured and a forced landing may be required;

(38) 'defined point before landing (DPBL)' means the point within the approach and landing phase, after which the helicopter's ability to continue the flight safely, with the critical engine inoperative, is not assured and a forced landing may be required;

(39) 'distance DR' means the horizontal distance that the helicopter has travelled from the end of the take-off distance available;

(40) 'dry lease agreement' means an agreement between undertakings pursuant to which the aircraft is operated under the air operator certificate (AOC) of the lessee or, in the case of commercial operations other than CAT, under the responsibility of the lessee;

(41) 'dry operating mass' means the total mass of the aircraft ready for a specific type of operation, excluding usable fuel and traffic load;

(42) 'dry runway' means a runway whose surface is free of visible moisture and not contaminated within the area intended to be used;

(42a) 'EFB application' means a software application installed on an EFB host platform that provides one or more specific operational functions which support flight operations;

(42b) 'EFB host platform' means the hardware equipment in which the computing capabilities and basic software reside, including the operating system and the input/output software;

(42c) 'EFB system' means the hardware equipment (including any battery, connectivity provisions, input/output components) and software (including databases and the operating system) needed to support the intended EFB application(s);

(42d) 'EBT module' means a combination of sessions in a qualified flight simulation training device as part of the 3-year period of recurrent assessment and training;

(43) 'ELA1 aircraft' means the following manned European Light Aircraft:

(a) an aeroplane with a Maximum Take-off Mass (MTOM) of 1 200 kg or less that is not classified as complex motor-powered aircraft;

(b) a sailplane or powered sailplane of 1 200 kg MTOM or less;

(c) a balloon with a maximum design lifting gas or hot air volume of not more than 3400 m^3 for hot air balloons, 1 050 m^3 for gas balloons, 300 m^3 for tethered gas balloons;

(44) 'ELA2 aircraft' means the following manned European Light Aircraft:

(a) an aeroplane with a Maximum Take-off Mass (MTOM) of 2 000 kg or less that is not classified as complex motor-powered aircraft;

(b) a sailplane or powered sailplane of 2 000 kg MTOM or less;

(c) a balloon;

(d) a Very Light Rotorcraft with a MTOM not exceeding 600 kg which is of a simple design, designed to carry not more than two occupants, not powered by turbine and/or rocket engines; restricted to VFR day operations;

(44a) 'electronic flight bag (EFB)' means an electronic information system, comprised of equipment and applications for flight crew, which allows for the storing, updating, displaying and processing of EFB functions to support flight operations or duties;

(45) 'elevated final approach and take-off area (elevated FATO)' means a FATO that is at least 3 m above the surrounding surface;

(45a) 'emergency exit' means an installed exit-type egress point from the aircraft that allows maximum opportunity for cabin and flight crew compartment evacuation within an appropriate time period and includes floor level door, window exit or any other type of exit, for instance hatch in the flight crew compartment and tail cone exit;

(46) 'enhanced flight vision system (EFVS)' is an electronic means to provide the flight crew with a real-time sensor-derived or enhanced display of the external scene topography (the natural or man-made features of a place or region especially in a way to show their relative positions and elevation) through the use of imaging sensors; an EFVS is integrated with a flight guidance system and is implemented on a head-up display or an equivalent display system; if an EFVS is certified according to the applicable airworthiness requirements and an operator holds the necessary specific approval (when required), then it may be used for EFVS operations and may allow operations with operational credits;

(46a) ‘EFVS operation’ means an operation in which visibility conditions require an EFVS to be used instead of natural vision in order to perform an approach or landing, identify the required visual references or conduct a roll-out;

(46b) ‘EFVS 200 operation’ means an operation with an operational credit in which visibility conditions require an EFVS to be used down to 200 ft above the FATO or runway threshold. From that point to land, natural vision is used. The RVR shall not be less than 550 m;

(47) ‘enhanced vision system (EVS)’ is an electronic means to provide the flight crew with a real-time image of the actual external scene topography (the natural or man-made features of a place or region especially in a way to show their relative positions and elevation) through the use of imaging sensors;

(47a) ‘enrolment’ means the administrative action carried out by the operator where a pilot participates in the operator’s EBT programme;

(47b) ‘enrolled pilot’ means the pilot that participates in the EBT recurrent training programme;

(47c) ‘equivalency of approaches means all the approaches that place an additional demand on a proficient crew regardless of whether they are used or not in the EBT modules;

(47d) ‘equivalency of malfunctions’ means all the malfunctions that put a significant demand on a proficient crew regardless of whether they are used or not in the EBT modules;

(47e) ‘evaluation phase’ means one of the phases of an EBT module which is a line-orientated flight scenario, representative of the operator’s environment during which there are one or more occurrences to evaluate key elements of the defined competency framework;

(47f) ‘evidence-based training (EBT)’ means assessment and training based on operational data that is characterised by developing and assessing the overall capability of a pilot across a range of competencies (competency framework) rather than by measuring the performance in individual events or manoeuvres;

(48) ‘final approach and take-off area (FATO)’ means a defined area for helicopter operations, over which the final phase of the approach manoeuvre to hover or land is completed, and from which the take-off manoeuvre is commenced. In the case of helicopters operating in performance class 1, the defined area includes the rejected take-off area available;

(48a) ‘flight crew member’ means a licensed crew member charged with duties essential to the operation of an aircraft during a flight duty period;

(48b) ‘final approach segment (FAS)’ means that segment of an instrument approach procedure (IAP) in which alignment and descent for landing are accomplished;

(49) ‘flight data monitoring (FDM)’ means the proactive and non-punitive use of digital flight data from routine operations to improve aviation safety;

(49a) ‘flight operations officer’ or ‘flight dispatcher’ means a person designated by the operator to engage in the control and supervision of flight operations, who is suitably qualified, who supports, briefs or assists, or both, the pilot-in-command in the safe conduct of the flight;

(49b) ‘flight data recorder (FDR)’ means a crash-protected flight recorder that uses a combination of data sources to collect and record parameters that reflect the state and performance of the aircraft;

(49c) ‘flight recorder’ means any type of recorder that is installed on the aircraft for the purpose of facilitating accident or incident safety investigations;

(49d) 'flight following' means the recording in real time of departure and arrival messages by operational personnel to ensure that a flight is operating and has arrived at the destination aerodrome or an alternate aerodrome;

(49e) 'flight monitoring' means, in addition to the requirements defined for flight following:

(a) operational monitoring of flights by suitably qualified operational-control personnel from departure throughout all phases of the flight;

(b) communication of all available and relevant safety information between the operational-control personnel on the ground and the flight crew; and

(c) critical assistance to the flight crew in the event of an in-flight emergency or security issue, or at the request of the flight crew;

(50) 'flight simulation training device (FSTD)' means a training device which is:

(a) in the case of aeroplanes, a full flight simulator (FFS), a flight training device (FTD), a flight and navigation procedures trainer (FNPT), or a basic instrument training device (BITD);

(b) in the case of helicopters, a full flight simulator (FFS), a flight training device (FTD) or a flight and navigation procedures trainer (FNPT);

(50a) 'flight time' means:

(a) for aeroplanes, the total time from the moment an aeroplane first moves for the purpose of taking off until the moment the aeroplane finally comes to rest at the end of the flight;

(b) for helicopters, the total time between the moment a helicopter's rotor blades start turning for the purpose of taking off until the moment the helicopter finally comes to rest at the end of the flight, and the rotor blades are stopped;

(50b) 'flight watch' means, in addition to all elements defined for 'flight monitoring', the active tracking of a flight by suitably qualified operational-control personnel throughout all phases of the flight to ensure that the flight is following its prescribed route without unplanned deviations, diversions or delays;

(52) 'GBAS landing system (GLS)' means an approach landing system using ground based augmented global navigation satellite system (GNSS/GBAS) information to provide guidance to the aircraft based on its lateral and vertical GNSS position. It uses geometric altitude reference for its final approach slope;

(52a) 'go-around' means a transition from an approach operation to a stabilised climb. This includes manoeuvres conducted at or above the MDA/H or DA/H, or below the DA/H (balked landings);

(53) 'ground emergency service personnel' means any ground emergency service personnel (such as policemen, firemen, etc.) involved with helicopter emergency medical services (HEMSs) and whose tasks are to any extent pertinent to helicopter operations;

(54) 'grounding' means the formal prohibition of an aircraft to take-off and the taking of such steps as are necessary to detain it;

(55) 'head-up display landing system (HUDLS)' means the total airborne system which provides head-up guidance to the pilot to enable the pilot to either control the aircraft or to monitor the autopilot during take-off (if applicable), approach and landing (and roll-out if applicable), or go-around. It includes all the sensors, computers, power supplies, indications and controls;

(56) [deleted with Reg. (EU) 2021/2237]

(57) [deleted with Reg. (EU) 2018/1975]

(58) 'helicopter hoist operation (HHO) crew member' means a technical crew member who performs assigned duties relating to the operation of a hoist;

(59) 'helideck' means a FATO located on a floating or fixed offshore structure;

(60) 'HEMS crew member' means a technical crew member who is assigned to a HEMS flight for the purpose of attending to any person in need of medical assistance carried in the helicopter and assisting the pilot during the mission;

(61) 'HEMS flight' means a flight by a helicopter operating under a HEMS approval, the purpose of which is to facilitate emergency medical assistance, where immediate and rapid transportation is essential, by carrying:

(a) medical personnel;

(b) medical supplies (equipment, blood, organs, drugs); or

(c) ill or injured persons and other persons directly involved;

(62) 'HEMS operating base' means an aerodrome at which the HEMS crew members and the HEMS helicopter may be on stand-by for HEMS operations;

(63) 'HEMS operating site' means a site selected by the commander during a HEMS flight for helicopter hoist operations, landing and take-off;

(64) 'HHO flight' means a flight by a helicopter operating under an HHO approval, the purpose of which is to facilitate the transfer of persons and/or cargo by means of a helicopter hoist;

(65) 'HHO offshore' means a flight by a helicopter operating under an HHO approval, the purpose of which is to facilitate the transfer of persons and/or cargo by means of a helicopter hoist from or to a vessel or structure in a sea area or to the sea itself;

(66) 'HHO passenger' means a person who is to be transferred by means of a helicopter hoist;

(67) 'HHO site' means a specified area at which a helicopter performs a hoist transfer;

(68) 'hold-over time (HoT)' means the estimated time the anti-icing fluid will prevent the formation of ice and frost and the accumulation of snow on the protected (treated) surfaces of an aeroplane;

(69) 'hostile environment' means:

(a) an area in which:

(i) a safe forced landing cannot be accomplished because the surface is inadequate; or

(ii) the helicopter occupants cannot be adequately protected from the elements; or

(iii) search and rescue response/capability are not provided consistent with anticipated exposure; or

(iv) there is an unacceptable risk of endangering persons or property on the ground;

(b) in any case, the following areas:

(i) for overwater operations, the open sea area north of 45 N and south of 45 S, unless any part is designated as non-hostile by the responsible authority of the State in which the operations take place; and

(ii) those parts of a congested area without adequate safe forced landing areas;

(69a) 'human–machine interface (HMI)' means a component of certain devices that is capable of handling human–machine interactions. The interface consists of hardware and software that allow user inputs to be interpreted and processed by machines or systems that, in turn, provide the required results to the user;

(69b) 'in-seat instruction' means a technique used in the manoeuvres training phase or the scenario-based training phase, where the instructors can:

(a) provide simple instructions to one pilot; or

(b) perform predetermined exercises acting, in a pilot seat, as pilot flying (PF) or pilot monitoring (PM) for:

(1) the demonstration of techniques; and/or

(2) triggering the other pilot to intervene or interact;

(69c) 'instructor concordance' means the consistency or stability of scores between different EBT instructors which gives a score (or scores) of how much homogeneity, or consensus, there is in the ratings given by instructors (raters);

(69d) 'instrument approach operation' means an approach and landing using instruments for navigation guidance based on an instrument approach procedure (IAP). There are two methods for executing instrument approach operations:

(a) a two-dimensional (2D) instrument approach operation, using lateral navigation guidance only; and

(b) a three-dimensional (3D) instrument approach operation, using both lateral and vertical navigation guidance;

(69e) 'instrument approach procedure (IAP)' means a series of predetermined manoeuvres by reference to flight instruments with specified protection from obstacles from the initial approach fix or, where applicable, from the beginning of a defined arrival route to a point from which a landing can be completed and thereafter, if a landing is not completed, to a position at which holding or en-route obstacle clearance criteria apply. IAPs are classified as follows:

(a) non-precision approach (NPA) procedure, which means an IAP designed for 2D instrument approach operations Type A;

(b) approach procedure with vertical guidance (APV) means a performance-based navigation (PBN) IAP designed for 3D instrument approach operations Type A;

(c) precision approach (PA) procedure means an IAP based on navigation systems designed for 3D instrument approach operations Type A or B;

(70) 'landing decision point (LDP)' means the point used in determining landing performance from which, an engine failure having been recognised at this point, the landing may be safely continued or a balked landing initiated;

(70a) 'landing distance at time of arrival (LDTA)' means a landing distance that is achievable in normal operations based on landing performance data and associated procedures determined for the prevailing conditions at the time of landing;

(71) 'landing distance available (LDA)' means the length of the runway which is declared available by the State of the aerodrome and suitable for the ground run of an aeroplane landing;

(72) 'landplane' means a fixed wing aircraft which is designed for taking off and landing on land and includes amphibians operated as landplanes;

(72a) 'line-orientated flight scenario' means the assessment and training involving a realistic, 'real-time', full mission simulation of scenarios that are representative of line operations;

(72b) 'line check' means a check conducted by the operator and completed by the pilot or the technical crew member to demonstrate competence in carrying out normal line operations described in the operations manual;

(73) 'local helicopter operation (LHO)' means a commercial air transport operation of helicopters with a maximum certified take-off mass (MCTOM) over 3 175 kg and a maximum operational passenger seating configuration (MOPSC) of nine or less, by day, over routes navigated by reference to visual landmarks, conducted within a local and defined geographical area specified in the operations manual;

(74) 'low-visibility operations (LVOs)' means approach or take-off operations on a runway with a runway visual range less than 550 m or with a decision height less than 200 ft;

(75) 'low-visibility take-off (LVTO)' means a take-off with an RVR less than 550 m;

(76) [deleted with Reg. (EU) 2021/2237]

(76a) 'maintenance check flight ('MCF')' means a flight of an aircraft with an airworthiness certificate or with a permit to fly which is carried out for troubleshooting purposes or to check the functioning of one or more systems, parts or appliances after maintenance, if the functioning of the systems, parts or appliances cannot be established during ground checks and which is carried out in any of the following situations:

(a) as required by the aircraft maintenance manual ('AMM') or any other maintenance data issued by a design approval holder being responsible for the continuing airworthiness of the aircraft;

(b) after maintenance, as required by the operator or proposed by the organisation responsible for the continuing airworthiness of the aircraft;

(c) as requested by the maintenance organisation for verification of a successful defect rectification;

(d) to assist with fault isolation or troubleshooting;

(76b) 'manoeuvres training phase' means a phase of an EBT module during which, according to aircraft generation, crews have time to practise and improve performance in largely psychomotor skill-based exercises by achieving a prescribed flight path or performing a prescribed event to a prescribed outcome;

(76c) 'mixed EBT programme' means an operator's recurrent training and checking programme as per ORO.FC.230, a portion of which is dedicated to the application of EBT but which does not replace proficiency checks as per Appendix 9 to Annex I (Part-FCL) to Regulation (EU) No 1178/2011;

(77) 'maximum operational passenger seating configuration (MOPSC)' means the maximum passenger seating capacity of an individual aircraft, excluding crew seats, established for operational purposes and specified in the operations manual. Taking as a baseline the maximum passenger seating configuration established during the certification process conducted for the type certificate (TC), supplemental type certificate (STC) or change to the TC or STC as relevant to the individual aircraft, the MOPSC may establish an equal or lower number of seats, depending on the operational constraints;

(78) 'medical passenger' means a medical person carried in a helicopter during a HEMS flight, including but not limited to doctors, nurses and paramedics;

(78a) 'minor failure condition' means a failure condition that would not significantly reduce aircraft safety, and which involves flight crew actions that are well within their capabilities;

(78b) 'misuse of substances' means the use of one or more psychoactive substances by flight crew, cabin crew members and other safety-sensitive personnel in a way that:

(a) constitutes a direct hazard to the user or endangers the lives, health or welfare of others, and/or

(b) causes or worsens an occupational, social, mental or physical problem or disorder;

(78c) 'minimum descent altitude (MDA) or minimum descent height (MDH)' means a specified altitude or height in a 2D instrument approach operation or circling approach operation below which descent must not be made without the required visual reference;'

(79) 'night' means the period between the end of evening civil twilight and the beginning of morning civil twilight or such other period between sunset and sunrise as may be prescribed by the appropriate authority, as defined by the Member State;

(80) 'night vision goggles (NVG)' means a head-mounted, binocular, light intensification appliance that enhances the ability to maintain visual surface references at night;

(81) 'night vision imaging system (NVIS)' means the integration of all elements required to successfully and safely use NVGs while operating a helicopter. The system includes as a minimum: NVGs, NVIS lighting, helicopter components, training and continuing airworthiness;

(82) 'non-hostile environment' means an environment in which:

(a) a safe forced landing can be accomplished;

(b) the helicopter occupants can be protected from the elements; and

(c) search and rescue response/capability is provided consistent with the anticipated exposure.

In any case, those parts of a congested area with adequate safe forced landing areas shall be considered non-hostile;

(83) [deleted with Reg. (EU) 2021/2237]

(84) 'NVIS crew member' means a technical crew member assigned to an NVIS flight;

(85) 'NVIS flight' means a flight under night visual meteorological conditions (VMC) with the flight crew using NVGs in a helicopter operating under an NVIS approval;

(85a) 'obstacle clearance altitude (OCA) or obstacle clearance height (OCH)' means the lowest altitude or the lowest height above the elevation of the relevant runway threshold or the aerodrome elevation, as applicable, used in establishing compliance with the appropriate obstacle clearance criteria;

(86) 'offshore operation' means a helicopter operation that has a substantial proportion of any flight conducted over open sea areas to or from an offshore location;

(86a) 'offshore location' means a facility intended to be used for helicopter operations on a fixed or floating offshore structure or a vessel;

(86b) 'open sea area' means the area of water to seaward of the coastline;

(87) 'operating site' means a site, other than an aerodrome, selected by the operator or pilot-in-command or commander for landing, take-off and/or external load operations;

(88) 'operation in performance class 1' means an operation that, in the event of failure of the critical engine, the helicopter is able to land within the rejected take-off distance available or safely continue the flight to an appropriate landing area, depending on when the failure occurs;

(89) 'operation in performance class 2' means an operation that, in the event of failure of the critical engine, performance is available to enable the helicopter to safely continue the flight, except when the failure occurs early during the take-off manoeuvre or late in the landing manoeuvre, in which cases a forced landing may be required;

(90) 'operation in performance class 3' means an operation that, in the event of an engine failure at any time during the flight, a forced landing may be required in a multi-engined helicopter and will be required in a single-engined helicopter;

(91) 'operational control' means the responsibility for the initiation, continuation, termination or diversion of a flight in the interest of safety;

(91a) 'operational credit' means a credit for operations with an advanced aircraft enabling lower aerodrome operating minima than would normally be established by the operator for a basic aircraft, based upon the performance of advanced aircraft systems utilising the available external infrastructure. Lower operating minima may include a lower decision height/altitude or minimum descent height/altitude, reduced visibility requirements or reduced ground facilities or a combination of these;

(92) 'operator proficiency check' means a check conducted by the operator and completed by the pilot or the technical crew member to demonstrate competence in carrying out normal, abnormal and emergency procedures;

(93) 'performance class A aeroplanes' means multi-engined aeroplanes powered by turbo-propeller engines with an MOPSC of more than nine or a maximum take-off mass exceeding 5 700 kg, and all multi-engined turbo-jet powered aeroplanes;

(94) 'performance class B aeroplanes' means aeroplanes powered by propeller engines with an MOPSC of nine or less and a maximum take-off mass of 5 700 kg or less;

(95) 'performance class C aeroplanes' means aeroplanes powered by reciprocating engines with an MOPSC of more than nine or a maximum take-off mass exceeding 5 700 kg;

(95a) 'personnel-carrying device system (PCDS)' means a system including one or more devices that is either attached to a hoist or cargo hook or mounted to the rotorcraft airframe during human external cargo (HEC) or helicopter hoist operations (HHO). The devices have the structural capability and features needed to transport occupants external to the helicopter e.g. a life safety harness with or without a quick release and strop with a connector ring, a rigid basket or a cage;

(95b) 'simple personnel carrying device system (simple 'PCDS')' means a PCDS that complies with the following conditions:

(a) meets a harmonised standard under Regulation (EU) 2016/425 of the European Parliament and of the Council[1] or Directive 2006/42/EC of the European Parliament and of the Council[2];

[1] Regulation (EU) 2016/425 of the European Parliament and of the Council of 9 March 2016 on personal protective equipment and repealing Council Directive 89/686/EEC (OJ L 81, 31.3.2016, p. 51).

[2] Directive 2006/42/EC of the European Parliament and of the Council of 17 May 2006 on machinery, and amending Directive 95/16/EC (OJ L 157, 9.6.2006, p. 24).

(b) is designed to restrain no more than a single person (for instance, hoist or cargo hook operator, task specialist or photographer) inside the cabin, or to restrain no more than two persons outside the cabin;

(c) is not a rigid structure such as a cage, a platform or a basket;

(96) 'pilot-in-command' means the pilot designated as being in command and charged with the safe conduct of the flight. For the purpose of commercial air transport operations, the 'pilot-in-command' shall be termed the 'commander';

(96a) 'portable EFB' means a portable EFB host platform, used on the flight deck, which is not part of the configuration of the certified aircraft;

(96b) 'portable electronic device (PED)' means any kind of electronic device, typically but not limited to consumer electronics, brought on board the aircraft by crew members, passengers, or as part of the cargo, that is not included in the configuration of the certified aircraft. It includes all equipment that is able to consume electrical energy. The electrical energy can be provided from internal sources such as batteries (chargeable or non-rechargeable) or the devices may also be connected to specific aircraft power sources;

(97) 'principal place of business' means the head office or registered office of the organisation within which the principal financial functions and operational control of the activities referred to in this Regulation are exercised;

(98) 'prioritisation of ramp inspections' means the dedication of an appropriate portion of the total number of ramp inspections conducted by or on behalf of a competent authority on an annual basis as provided in Part-ARO;

(98a) 'proficient' means having demonstrated the necessary skills, knowledge and attitudes that are required to perform any defined tasks to the prescribed standard;

(98b) 'psychoactive substances' means alcohol, opioids, cannabinoids, sedatives and hypnotics, cocaine, other psychostimulants, hallucinogens, and volatile solvents, with the exception of caffeine and tobacco;

(99) 'public interest site (PIS)' means a site used exclusively for operations in the public interest;

(100) 'ramp inspection' means the inspection of aircraft, of flight and cabin crew qualifications and of flight documentation in order to verify the compliance with the applicable requirements;

(101) 'rectification interval' means a limitation on the duration of operations with inoperative equipment;

(102) 'rejected take-off distance available (RTODAH)' means the length of the final approach and take-off area declared available and suitable for helicopters operated in performance class 1 to complete a rejected take-off;

(103) 'rejected take-off distance required (RTODRH)' means the horizontal distance required from the start of the take-off to the point where the helicopter comes to a full stop following an engine failure and rejection of the take-off at the take-off decision point;

(103a) 'required navigation performance (RNP) specification' means a navigation specification for PBN operations which includes a requirement for on-board navigation performance monitoring and alerting;

(103b)'rules of the air' means the rules established in Commission Implementing Regulation (EU) No 923/2012[1];

(103c)'runway condition report (RCR)' means a comprehensive standardised report relating to the conditions of the runway surface and their effect on the aeroplane landing and take-off performance, described by means of runway conditions code;

(104) 'runway visual range (RVR)' means the range over which the pilot of an aircraft on the centre line of a runway can see the runway surface markings or the lights delineating the runway or identifying its centre line;

(104a)'safe landing' means, in the context of the fuel/energy policy or fuel/energy schemes, a landing at an adequate aerodrome or operating site with no less than the final reserve fuel/energy remaining and in compliance with the applicable operational procedures and aerodrome operating minima;

(105) 'safe forced landing' means an unavoidable landing or ditching with a reasonable expectancy of no injuries to persons in the aircraft or on the surface;

(105a) 'safety-sensitive personnel' means persons who might endanger aviation safety if they perform their duties and functions improperly, including flight crew and cabin crew members, aircraft maintenance personnel and air traffic controllers;

(105b) 'scenario-based training phase' means a phase of an EBT module which focuses on the development of competencies, whilst the pilot is trained to mitigate the most critical risks identified for the aircraft generation. It should include the management of specific operator's threats and errors in a real-time line orientated environment;

(106) 'seaplane' means a fixed wing aircraft which is designed for taking off and landing on water and includes amphibians operated as seaplanes;

(107) 'separate runways' means runways at the same aerodrome that are separate landing surfaces. These runways may overlay or cross in such a way that if one of the runways is blocked, it will not prevent the planned type of operations on the other runway. Each runway shall have a separate approach procedure based on a separate navigation aid;

(107a) 'specially prepared winter runway' means a runway with a dry frozen surface of compacted snow or ice which has been treated with sand or grit or has been mechanically treated to improve runway friction;

(108) 'special VFR flight' means a VFR flight cleared by air traffic control to operate within a control zone in meteorological conditions below VMC;

(109) 'stabilised approach (SAp)' means an approach that is flown in a controlled and appropriate manner in terms of configuration, energy and control of the flight path from a pre-determined point or altitude/height down to a point 50 ft above the threshold or the point where the flare manoeuvre is initiated if higher;

(109a) 'sterile flight crew compartment' means any period of time when the flight crew members are not disturbed or distracted, except for matters critical to the safe operation of the aircraft or the safety of the occupants;

[1] Commission Implementing Regulation (EU) No 923/2012 of 26 September 2012 laying down the common rules of the air and operational provisions regarding services and procedures in air navigation and amending Implementing Regulation (EU) No 1035/2011 and Regulations (EC) No 1265/2007, (EC) No 1794/2006, (EC) No 730/2006, (EC) No 1033/2006 and (EU) No 255/2010 (OJ L 281, 13.10.2012, p. 1).

(110) 'take-off alternate aerodrome' means an alternate aerodrome at which an aircraft can land should this become necessary shortly after take-off and if it is not possible to use the aerodrome of departure;

(111) 'take-off decision point (TDP)' means the point used in determining take-off performance from which, an engine failure having been recognised at this point, either a rejected take-off may be made or a take-off safely continued;

(112) 'take-off distance available (TODA)' in the case of aeroplanes means the length of the take-off run available plus the length of the clearway, if provided;

(113) 'take-off distance available (TODAH)' in the case of helicopters means the length of the final approach and take-off area plus, if provided, the length of helicopter clearway declared available and suitable for helicopters to complete the take-off;

(114) 'take-off distance required (TODRH)' in the case of helicopters means the horizontal distance required from the start of the take-off to the point at which take-off safety speed (V_{TOSS}), a selected height and a positive climb gradient are achieved, following failure of the critical engine being recognised at the TDP, the remaining engines operating within approved operating limits;

(115) 'take-off flight path' means the vertical and horizontal path, with the critical engine inoperative, from a specified point in the take-off for aeroplanes to 1 500 ft above the surface and for helicopters to 1 000 ft above the surface;

(116) 'take-off mass' means the mass including everything and everyone carried at the commencement of the take-off for helicopters and take-off run for aeroplanes;

(117) 'take-off run available (TORA)' means the length of runway that is declared available by the State of the aerodrome and suitable for the ground run of an aeroplane taking off;

(117a) 'task specialist' means a person assigned by the operator or a third party, or acting as an undertaking, who performs tasks on the ground directly associated with a specialised task or performs specialised tasks on board or from the aircraft;

(118) 'technical crew member' means a crew member in commercial air transport HEMS, HHO or NVIS operations other than a flight or cabin crew member, assigned by the operator to duties in the aircraft or on the ground for the purpose of assisting the pilot during HEMS, HHO or NVIS operations, which may require the operation of specialised on-board equipment;

(119) 'technical instructions (TI)' means the latest effective edition of the 'Technical instructions for the safe transport of dangerous goods by air', including the supplement and any addenda, approved and published by the International Civil Aviation Organisation;

(120) 'traffic load' means the total mass of passengers, baggage, cargo and carry-on specialist equipment and including any ballast;

(120a) 'type A EFB application' means an EFB application whose malfunction or misuse has no safety effect;

(120b) 'type B EFB application' means an EFB application:

(a) whose malfunction or misuse is classified as minor failure condition or below; and

(b) which neither replaces nor duplicates any system or functionality required by airworthiness regulations, airspace requirements, or operational rules;

(120c) 'training to proficiency' means training designed to achieve end-state performance objectives, providing sufficient assurance that the trained individual is capable of consistently carrying out specific tasks safely and effectively;

(120d) 'Type A instrument approach operation' means an instrument approach operation with an MDH or a DH at or above 250 ft;

(120e) 'Type B instrument approach operation' means an operation with a DH below 250 ft. Type B instrument approach operations are categorised as:

(a) Category I (CAT I): a DH not lower than 200 ft and with either a visibility not less than 800 m or an RVR not less than 550 m;

(b) Category II (CAT II): a DH lower than 200 ft but not lower than 100 ft, and an RVR not less than 300 m;

(c) Category III (CAT III): a DH lower than 100 ft or no DH, and an RVR less than 300 m or no RVR limitation;

(121) 'unaided NVIS flight' means, in the case of NVIS operations, that portion of a VFR flight performed at night when a crew member is not using NVG;

(122) 'undertaking' means any natural or legal person, whether profit-making or not, or any official body whether having its own personality or not;

(123) 'V_1' means the maximum speed in the take-off at which the pilot must take the first action to stop the aeroplane within the accelerate-stop distance. V_1 also means the minimum speed in the take-off, following a failure of the critical engine at V_{EF}, at which the pilot can continue the take-off and achieve the required height above the take-off surface within the take-off distance;

(124) 'V_{EF}' means the speed at which the critical engine is assumed to fail during take-off;

(124a) 'visibility (VIS)' means visibility for aeronautical purposes, which is the greater of:

(a) the greatest distance at which a black object of suitable dimensions, situated near the ground, can be seen and recognised when observed against a bright background; and

(b) the greatest distance at which lights in the vicinity of 1 000 candelas can be seen and identified against an unlit background;

(125) 'visual approach operation' means an approach operation by an IFR flight when either a part or all parts of an IAP is (are) not completed and the approach operation is executed with visual reference to terrain;

(126) 'weather-permissible aerodrome' means an adequate aerodrome where, for the anticipated time of use, meteorological reports, or forecasts, or any combination thereof, indicate that the meteorological conditions will be at or above the required aerodrome operating minima, and the runway surface condition reports indicate that a safe landing will be possible;

(127) 'wet lease agreement' means an agreement:

— in the case of CAT operations, between air carriers pursuant to which the aircraft is operated under the AOC of the lessor; or

— in the case of commercial operations other than CAT, between operators pursuant to which the aircraft is operated under the responsibility of the lessor;

(128) 'wet runway' means a runway whose surface is covered by any visible dampness or water up to and including 3 mm deep within the area intended to be used.

GM1 Annex I Definitions

ED Decision 2022/012/R

DEFINITIONS FOR TERMS USED IN ACCEPTABLE MEANS OF COMPLIANCE AND GUIDANCE MATERIAL

For the purpose of Acceptable Means of Compliance and Guidance Material to Regulation (EU) No 965/2012, the following definitions should apply:

(a) 'Abnormal flight behaviour' means, in the context of an aircraft tracking system, an event affecting a flight:

(1) which is outside of the parameters defined by the operator for normal operation or which indicates an obvious deviation from normal operation; and

(2) for which the operator has determined that it poses a risk for the safe continuation of the flight or for third parties.

(a) 'Accuracy' means, in the context of PBN operations, the degree of conformance between the estimated, measured or desired position and/or the velocity of a platform at a given time, and its true position or velocity. Navigation performance accuracy is usually presented as a statistical measure of system error and is specified as predictable, repeatable and relative.

(b) 'Aircraft-based augmentation system (ABAS)' means a system that augments and/or integrates the information obtained from the other GNSS elements with information available on board the aircraft. The most common form of ABAS is receiver autonomous integrity monitoring (RAIM).

(ba) 'Airport moving map display (AMMD)' means a software application that displays an airport map on a display device and uses data from a navigation source to depict the aircraft current position on this map while the aircraft is on the ground.

(c) 'Area navigation (RNAV)' means a method of navigation which permits aircraft operation on any desired flight path within the coverage of station-referenced navigation aids or within the limits of the capability of self-contained aids, or a combination of these.

(d) 'Availability' means, in the context of PBN operations, an indication of the ability of the system to provide usable service within the specified coverage area and is defined as the portion of time during which the system is to be used for navigation during which reliable navigation information is presented to the crew, autopilot or other system managing the flight of the aircraft.

(e) 'Committal point' means the point in the approach at which the pilot flying decides that, in the event of an engine failure being recognised, the safest option is to continue to the elevated final approach and take-off area (elevated FATO).

(f) 'Continuity of function' means, in the context of PBN operations, the capability of the total system, comprising all elements necessary to maintain aircraft position within the defined airspace, to perform its function without non-scheduled interruptions during the intended operation.

(fa) 'Controlled portable electronic device (C-PED)' means a PED subject to administrative control by the operator that uses it. This includes, inter alia, tracking the allocation of the devices to specific aircraft or persons and ensuring that no unauthorised changes are made to the hardware, software, or databases. C-PEDs can be assigned to the category of non-intentional transmitters or T-PEDs.

(fb) 'EFB installed resources' means certified EFB hardware components external to the EFB host platform itself, such as input/output components (installed remote displays, keyboards, pointing devices, switches, etc.) or a docking station.

(fc) 'EFB mounting device' means an aircraft certified part that secures a portable or installed EFB, or EFB system components.

(fd) 'EFB system supplier' means the company responsible for developing, or for having developed, the EFB system or part of it.

(g) 'Emergency locator transmitter' is a generic term describing equipment that broadcasts distinctive signals on designated frequencies for the purpose of search and rescue (SAR). The ELT may be activated by various conditions (e.g. manual activation, automatic detection of a distress situation, automatic detection of a crash impact, automatic detection of aircraft immersion into water, etc.). The ELT signals usually include signals that are intended to be detected by the international COSPAS-SARSAT programme, and homing signals that are intended to guide SAR teams to the ELT.

(h) 'Exposure time' means the actual period during which the performance of the helicopter with the critical engine inoperative in still air does not guarantee a safe forced landing or the safe continuation of the flight.

(i) 'Fail-operational flight control system' means a flight control system with which, in the event of a failure below alert height, the approach, flare and landing can be completed automatically. In the event of a failure, the automatic landing system will operate as a fail-passive system.

(j) 'Fail-operational hybrid landing system' means a system that consists of a primary fail-passive automatic landing system and a secondary independent guidance system enabling the pilot to complete a landing manually after failure of the primary system.

(k) 'Fail-passive flight control system': a flight control system is fail-passive if, in the event of a failure, there is no significant out-of-trim condition or deviation of flight path or attitude but the landing is not completed automatically. For a fail-passive automatic flight control system the pilot assumes control of the aeroplane after a failure.

(l) 'Flight control system' in the context of low visibility operations means a system that includes an automatic landing system and/or a hybrid landing system.

(m) 'HEMS dispatch centre' means a place where, if established, the coordination or control of the helicopter emergency medical service (HEMS) flight takes place. It may be located in a HEMS operating base.

(n) 'Hybrid head-up display landing system (hybrid HUDLS)' means a system that consists of a primary fail-passive automatic landing system and a secondary independent HUD/HUDLS enabling the pilot to complete a landing manually after failure of the primary system.

(na) 'Installed EFB' means an EFB host platform installed in an aircraft, capable of hosting type A and/or type B EFB applications. It may also host certified applications. It is an aircraft part, and, is therefore, covered by the aircraft airworthiness approval.

(o) 'Integrity' means, in the context of PBN operations, the ability of a system to provide timely warnings to users when the system should not be used for navigation.

(p) 'Landing distance available (LDAH)' means the length of the final approach and take-off area plus any additional area declared available by the State of the aerodrome and suitable for helicopters to complete the landing manoeuvre from a defined height.

(q) 'Landing distance required (LDRH)', in the case of helicopters, means the horizontal distance required to land and come to a full stop from a point 15 m (50 ft) above the landing surface.

(r) 'Lateral navigation' means a method of navigation which permits aircraft operation on a horizontal plane using radio navigation signals, other positioning sources, external flight path references, or a combination of these.

(ra) 'mass' and 'weight': In accordance with ICAO Annex 5 and the International System of Units (SI), both terms are used to indicate the actual and limiting masses of aircraft, the payload and its constituent elements, the fuel load, etc. These are expressed in units of mass (kg), but in most approved flight manuals and other operational documentation, these quantities are published as weights in accordance with the common language. In the ICAO standardised system of units of measurement, a weight is a force rather than a mass. Since the use of the term 'weight' does not cause any problem in the day-to-day handling of aircraft, its continued use in operational applications and publications is acceptable.

(s) 'Maximum structural landing mass' means the maximum permissible total aeroplane mass upon landing under normal circumstances.

(t) 'Maximum zero fuel mass' means the maximum permissible mass of an aeroplane with no usable fuel. The mass of the fuel contained in particular tanks should be included in the zero fuel mass when it is explicitly mentioned in the aircraft flight manual.

(ta) 'Miscellaneous (non-EFB) software applications' means non-EFB applications that support function(s) not directly related to the tasks performed by the flight crew in the aircraft.

(u) 'Overpack', for the purpose of transporting dangerous goods, means an enclosure used by a single shipper to contain one or more packages and to form one handling unit for convenience of handling and stowage.

(v) 'Package', for the purpose of transporting dangerous goods, means the complete product of the packing operation consisting of the packaging and its contents prepared for transport.

(w) 'Packaging', for the purpose of transporting dangerous goods, means receptacles and any other components or materials necessary for the receptacle to perform its containment function.

(x) 'Personal locator beacon (PLB)' is an emergency beacon other than an ELT that broadcasts distinctive signals on designated frequencies, is standalone, portable and is manually activated by the survivors.

(xa) 'Ramp inspection tool' means the IT application including a centralised database used by all stakeholders to store and exchange data related to ramp inspections.

(y) 'Receiver autonomous integrity monitoring (RAIM)' means a technique whereby a GNSS receiver/processor determines the integrity of the GNSS navigation signals using only GNSS signals or GNSS signals augmented with altitude. This determination is achieved by a consistency check among redundant pseudo-range measurements. At least one satellite in addition to those required for navigation has to be in view for the receiver to perform the RAIM function.

(z) 'Rotation point (RP)' means the point at which a cyclic input is made to initiate a nose-down attitude change during the take-off flight path. It is the last point in the take-off path from which, in the event of an engine failure being recognised, a forced landing on the aerodrome can be achieved.

(za) 'Runway condition assessment matrix (RCAM)' means a matrix that allows the assessment of the runway condition code (RWYCC), using associated procedures, from a set of observed runway surface condition(s) and pilot report of braking action.

(zb) 'Runway condition code (RWYCC)' means a number, to be used in the runway condition report (RCR), that describes the effect of the runway surface condition on aeroplane deceleration performance and lateral control.

(zc) 'Runway surface condition' means a description of the condition of the runway surface used in the RCR which establishes the basis for the determination of the RWYCC for aeroplane performance purposes.

(zd) 'Runway surface condition descriptors' means one of the following elements on the surface of the runway:

(1) 'compacted snow': snow that has been compacted into a solid mass such that aeroplane tyres, at operating pressures and loadings, will run on the surface without significant further compaction or rutting of the surface;

(2) 'dry snow': snow from which a snowball cannot readily be made;

(3) 'frost': ice crystals formed from airborne moisture on a surface whose temperature is at or below freezing; frost differs from ice in that the frost crystals grow independently and, therefore, have a more granular texture;

(4) 'ice': water that has frozen or compacted snow that has transitioned into ice in cold and dry conditions;

(5) 'slush': snow that is so water-saturated that water will drain from it when a handful is picked up or will splatter if stepped on forcefully;

(6) 'standing water': water of depth greater than 3 mm;

(7) 'Wet ice': ice with water on top of it or ice that is melting.

(8) 'wet snow': snow that contains enough water to be able to make a well compacted, solid snowball, but water will not squeeze out.

(aaa) 'Slippery wet runway' means a wet runway where the surface friction characteristics of a significant portion of the runway have been determined to be degraded.

(ab) 'Touch down and lift-off area (TLOF)' means a load-bearing area on which a helicopter may touch down or lift off.

(ac) 'Transmitting PED (T-PED)' means a portable electronic device (PED) that has intentional radio frequency (RF) transmission capabilities.

(ad) 'Vertical navigation' means a method of navigation which permits aircraft operation on a vertical flight profile using altimetry sources, external flight path references, or a combination of these.

(ae) 'Viewable stowage' means a non-certified device that is attached to the flight crew member (e.g. with a kneeboard) or to an existing aircraft part (e.g. using suction cups), and is intended to hold charts or to hold low-mass portable electronic devices that are viewable by the flight crew members at their assigned duty stations.

GM2 Annex I Definitions

ED Decision 2022/012/R

ABBREVIATIONS AND ACRONYMS

The following abbreviations are used in the Annexes to this Regulation:

2D	two-dimensional
3D	three-dimensional
A	aeroplane
a/c	aircraft
AAC	aeronautical administrative communications
AAIM	aircraft autonomous integrity monitoring
AAL	above aerodrome level
ABAS	aircraft-based augmentation system
AC	advisory circular
AC	alternating current
ACAS	airborne collision avoidance system
ADF	automatic direction finder
ADG	air driven generator
ADS	automatic dependent surveillance
ADS-B	automatic dependent surveillance - broadcast
ADS-C	automatic dependent surveillance - contract
AEA	Association of European Airlines
AEO	all-engines-operative
AFFF	aqueous film forming foams
AFM	aircraft flight manual
AFN	aircraft flight notification
AFN	ATS facilities notification
AGL	above ground level
AHRS	attitude heading reference system
AIREP	air-report
AIS	aeronautical information service
ALAP	aerodrome landing analysis programme
ALARP	as low as reasonably practicable
ALD	actual landing distance
ALSF	approach lighting system with sequenced flashing lights
AMC	Acceptable Means of Compliance
AML	aircraft maintenance licence
AMSL	above mean sea level
ANP	actual navigation performance
AOC	aeronautical operational control
AOC	air operator certificate
APCH	approach
APP	approach
APU	auxiliary power unit
APV	approach procedure with vertical guidance
AR	authorisation required
ARA	airborne radar approach
ARA	Authority Requirements for Aircrew
A-RNP	advanced required navigation performance
ARO	Authority Requirements for Air Operations
ARP	Aerospace Recommended Practices
ASC	Air Safety Committee
ASDA	accelerate-stop distance available
ASE	altimeter system error

ATA	Air Transport Association
ATC	air traffic control
ATIS	automatic terminal information service
ATN	air traffic navigation
ATPL	airline transport pilot licence
ATQP	alternative training and qualification programme
ATS	air traffic services
ATSC	air traffic service communication
AVGAS	aviation gasoline
AVTAG	aviation turbine gasoline (wide-cut fuel)
AWO	all weather operations
BALS	basic approach lighting system
Baro VNAV	barometric VNAV
BCAR	British civil airworthiness requirements
BITD	basic instrument training device
CAP	controller access parameters
CAT	commercial air transport
CAT I / II / III	category I / II / III
CBT	computer-based training
CC	cabin crew
CDFA	continuous descent final approach
CDL	configuration deviation list
CFIT	controlled flight into terrain
CG	centre of gravity
CLB	climb
CM	context management
CMV	converted meteorological visibility
CofA	certificate of airworthiness
COM	communication (EBT competency)
COP	code of practice
CoR	certificate of registration
COSPAS-SARSAT	cosmicheskaya sistyema poiska avariynich sudov - search and rescue satellite-aided tracking
CP	committal point
CPA	closest point of approach
CPDLC	controller pilot data link communication
C-PED	controlled portable electronic device
CPL	commercial pilot licence
CRE	class rating examiner
CRI	class rating instructor
CRM	crew resource management
CRZ	cruise
CS	Certification Specifications
CSP	communication service provider
CVR	cockpit voice recorder
CVS	combined vision system
DA	decision altitude
DA/H	decision altitude/height
DAP	downlinked aircraft parameters
D-ATIS	digital automatic terminal information service
DC	direct current
DCL	departure clearance
DES	descent
D-FIS	data link flight information service
DG	dangerous goods

DH	decision height
DI	daily inspection
DIFF	deck integrated fire fighting system
DLR	data link recorder
DME	distance measuring equipment
D-METAR	data link - meteorological aerodrome report
D-OTIS	data link - operational terminal information service
DPATO	defined point after take-off
DPBL	defined point before landing
DR	decision range
DSTRK	desired track
EBT	evidence-based training
EC	European Community
ECAC	European Civil Aviation Conference
EFB	electronic flight bag
EFIS	electronic flight instrument system
EFVS	enhanced flight vision system
EFVS-A	enhanced flight vision system used for approach
EFVS-L	enhanced flight vision system used for landing
EGNOS	European geostationary navigation overlay service
EGT	exhaust gas temperature
ELT	emergency locator transmitter
ELT(AD)	emergency locator transmitter (automatically deployable)
ELT(AF)	emergency locator transmitter (automatic fixed)
ELT(DT)	emergency locator transmitter (distress tracking)
ELT(AP)	emergency locator transmitter (automatic portable)
ELT(S)	survival emergency locator transmitter
EPE	estimated position of error
EPR	engine pressure ratio
EPU	estimated position of uncertainty
ERA	en-route alternate (aerodrome)
ERP	emergency response plan
ETOPS	extended range operations with two-engined aeroplanes
EU	European Union
EUROCAE	European Organisation for Civil Aviation Equipment
EVAL	evaluation phase
EVS	enhanced vision system
FAA	Federal Aviation Administration
FAF	final approach fix
FALS	full approach lighting system
FANS	future air navigation systems
FAP	final approach point
FAR	Federal Aviation Regulation
FAS	final approach segment
FATO	final approach and take-off
FC	flight crew
FCL	flight crew licensing
FCOM	flight crew operating manual
FDM	flight data monitoring
FDO	flying display operation
FDR	flight data recorder
FFS	full flight simulator
FGS	flight control/guidance system
FI	flight instructor
FLIPCY	flight plan consistency

FLTA	forward-looking terrain avoidance
FMECA	failure mode, effects and criticality analysis
FMS	flight management system
FNPT	flight and navigation procedures trainer
FOD	foreign object damage
FOSA	flight operational safety assessment
FOV	field of view
FPA	flight path management — automation (EBT competency)
FPM	flight path management — manual control (EBT competency)
fpm	feet per minute
FRT	fixed radius transition
FSTD	flight simulation training device
ft	feet
FTD	flight training device
FTE	full time equivalent
FTE	flight technical error
FTL	flight and duty time limitations
g	gram
GAGAN	GPS aided geo augmented navigation
GBAS	ground-based augmentation system
GCAS	ground collision avoidance system
GEN	general
GIDS	ground ice detection system
GLS	GBAS landing system
GM	Guidance Material
GMP	general medical practitioner
GND	ground
GNSS	global navigation satellite system
GPS	global positioning system
GPWS	ground proximity warning system
H	helicopter
HEMS	helicopter emergency medical service
HF	high frequency
Hg	mercury
HHO	helicopter hoist operation
HIALS	high intensity approach lighting system
HIGE	hover in ground effect
HLL	helideck limitations list
HOGE	hover out of ground effect
HoT	hold-over time
hPa	hectopascals
HPL	human performance and limitations
HUD	head-up display
HUDLS	head-up guidance landing system
HUMS	health usage monitor system
IAF	initial approach fix
IALS	intermediate approach lighting system
IAP	instrument approach procedure
ICAO	International Civil Aviation Organization
IDE	instruments, data and equipment
IF	intermediate fix
IFR	instrument flight rules
IFSD	in-flight shutdown
IGE	in ground effect
ILS	instrument landing system

IMC	instrument meteorological conditions
in	inches
INS	inertial navigation system
IP	intermediate point
IR	Implementing Rule
IR	instrument rating
IRS	inertial reference system
ISA	international standard atmosphere
ISI	in-seat instruction
ISO	International Organization for Standardization
IV	intravenous
JAA	Joint Aviation Authorities
JAR	Joint Aviation Requirements
kg	kilograms
km	kilometres
KNO	application of knowledge (EBT competency)
kt	knots
LDA	landing distance available
LDF	landing distance factor
LDG	landing
LDP	landing decision point
LDTA	landing distance at time of arrival
LED	light-emitting diode
LHO	local helicopter operation
LHS	left-hand seat
LIFUS	line flying under supervision
LNAV	lateral navigation
LoA	letter of acceptance
LOC	localiser
LOC-I	loss of control in-flight
LOE	line-oriented evaluation
LOFT	line-oriented flight training
LOQE	line-oriented quality evaluation
LOS	limited obstacle surface
LP	Localiser performance
LPV	localiser performance with vertical guidance
LRCS	long range communication system
LRNS	long range navigation system
LSAA	landing system assessment area
LTW	Leadership and teamwork (EBT competency)
LVO	low visibility operation
LVP	low visibility procedures
LVTO	low visibility take-off
m	metres
MALS	medium intensity approach lighting system
MALSF	medium intensity approach lighting system with sequenced flashing lights
MALSR	medium intensity approach lighting system with runway alignment indicator lights
MAPt	missed approach point
MCTOM	maximum certified take-off mass
MDA	minimum descent altitude
MDH	minimum descent height
MEA	minimum en-route altitude
MED	medical
MEL	minimum equipment list
METAR	meteorological aerodrome report

MGA	minimum grid altitude
MHA	minimum holding altitude
MHz	megahertz
MID	midpoint
MLR	manuals, logs and records
MLS	microwave landing system
MLX	millilux
mm	millimetres
MM	multi-mode
MMEL	master minimum equipment list
MNPS	minimum navigation performance specifications
MOC	minimum obstacle clearance
MOCA	minimum obstacle clearance altitude
MOPSC	maximum operational passenger seating configuration
MORA	minimum off-route altitude
MPSC	maximum passenger seating capacity
MSA	minimum sector altitude
MSAS	multi-functional satellite augmentation system
MT	manoeuvres training phase
MTCA	minimum terrain clearance altitude
N	North
NADP	noise abatement departure procedure
NALS	no approach lighting system
NCC	non-commercial operations with complex motor-powered aircraft
NCO	non-commercial operations with other-than-complex motor-powered aircraft
N_F	free power turbine speed
N_G	engine gas generator speed
NM	nautical miles
NOTAM	notice to airmen
NOTECHS	non-technical skills evaluation
NOTOC	notification to captain
NPA	non-precision approach
NPA	Notice of Proposed Amendment
NSE	navigation system error
NVD	night vision device
NVG	night vision goggles
NVIS	night vision imaging system
OAT	outside air temperature
OB	observable behaviour
OCH	obstacle clearance height
OCL	oceanic clearance
ODALS	omnidirectional approach lighting system
OEI	one-engine-inoperative
OFS	obstacle-free surface
OFZ	obstacle free zone
OGE	out of ground effect
OIP	offset initiation point
OM	operations manual
OML	operational multi-pilot limitation
ONC	operational navigation chart
OPS	operations
ORO	Organisation Requirements for Air Operations
OTS CAT II	other than standard category II
PAPI	precision approach path indicator
PAR	precision approach radar

PBCS	performance-based communication and surveillance
PBE	protective breathing equipment
PBN	performance-based navigation
PC/PT	proficiency check/proficiency training
PCDS	personnel carrying device system
PDA	premature descent alert
PDP	predetermined point
PED	portable electronic device
PFC	porous friction course
PIC	pilot-in-command
PIN	personal identification number
PIS	public interest site
PLB	personal locator beacon
PNR	point of no return
POH	pilot's operating handbook
PRM	person with reduced mobility
PRO	application of procedures (EBT competency)
PSD	problem-solving & decision making (EBT competency)
PVD	paravisual display
QAR	quick access recorder
QFE	atmospheric pressure at aerodrome elevation / runway threshold
QNH	atmospheric pressure at nautical height
RA	resolution advisory
RAIM	receiver autonomous integrity monitoring
RAT	ram air turbine
RCAM	runway condition assessment matrix
RCC	rescue coordination centre
RCF	reduced contingency fuel
RCLL	runway centre line lights
RCP	required communication performance
RCR	runway condition report
RF	radius to fix
RF	radio frequency
RFC	route facility chart
RI	ramp inspection
RI	rectification interval
RIE	rectification interval extension
RMA	regional monitoring agency
RNAV	area navigation
RNP	required navigation performance
RNP APCH	RNP approach
RNP AR APCH	RNP approach for which authorisation is required
ROD	rate of descent
RP	rotation point
RSP	required surveillance performance
RTCA	Radio Technical Commission for Aeronautics
RTODAH	rejected take-off distance available (helicopters)
RTODRH	rejected take-off distance required (helicopters)
RTOM	reduced take-off mass
RTZL	runway touchdown zone lights
RVR	runway visual range
RVSM	reduced vertical separation minima
RWYCC	runway condition code
S	South
SA CAT I	special authorisation category I

SA CAT II	special authorisation category II
SAFA	safety assessment of foreign aircraft
SALS	simple approach lighting system
SALSF	simple approach lighting system with sequenced flashing lights
SAp	stabilised approach
SAP	system access parameters
SAR	search and rescue
SAS	stability augmentation system
SAW	situation awareness (EBT competency)
SBAS	satellite-based augmentation system
SBT	scenario-based training
SCC	senior cabin crew
SCP	special category of passenger
SDCM	system of differential correction and monitoring
SFE	synthetic flight examiner
SFI	synthetic flight instructor
SID	standard instrument departure
SMM	safety management manual
SMS	safety management system
SNAS	satellite navigation augmentation system
SOP	standard operating procedure
SPA	operations requiring specific approvals
SPECI	aviation selected special weather report
SPO	specialised operations
SRA	surveillance radar approach
SSALF	simplified short approach lighting system with sequenced flashing lights
SSALR	simplified short approach lighting system with runway alignment indicator lights
SSALS	simplified short approach lighting system
SSEC	static source error correction
SSR	secondary surveillance radar
STAR	standard terminal arrival route
STC	supplemental type certificate
SVS	synthetic vision system
TA	traffic advisory
TAC	terminal approach chart
TAS	true airspeed
TAWS	terrain awareness warning system
TC	technical crew
TC	type certificate
TCAS	traffic collision avoidance system
TCCA	Transport Canada Civil Aviation
TCH	type certificate holder
TDP	take-off decision point
TDZ	touchdown zone
TDZE	touchdown zone elevation
THR	threshold
TI	Technical Instructions
TIT	turbine inlet temperature
TLS	target level of safety
TMG	touring motor glider
TO	take-off
TODA	take-off distance available (aeroplanes)
TODAH	take-off distance available (helicopters)
TODRH	take-off distance required (helicopters)
TOGA	take-off/go around

TORA	take-off run available
T-PED	transmitting portable electronic device
TRE	type rating examiner
TRI	type rating instructor
TSE	total system error
TVE	total vertical error
TWIP	terminal weather information for pilots
UMS	usage monitoring system
UPRT	upset prevention and recovery training
UTC	coordinated universal time
V_2	take-off safety speed
V_{50}	stalling speed
V_{AT}	indicated airspeed at threshold
VDF	VHF direction finder
VFR	visual flight rules
VHF	very high frequency
VIS	visibility
VMC	visual meteorological conditions
V_{MO}	maximum operating speed
VNAV	vertical navigation
VOR	VHF omnidirectional radio range
VSS	visual segment surface
V_T	threshold speed
VTOL	vertical take-off and landing
V_{TOSS}	take-off safety speed
WAAS	wide area augmentation system
WAC	world aeronautical chart
WIFI	wireless fidelity
WLM	workload management (EBT competency)
ZFTT	zero flight-time training

GM3 Annex I Definitions

ED Decision 2016/022/R

HELIDECK

The term 'helideck' includes take-off and landing operations on ships and vessels and covers 'shipboard final approach and take off areas (FATOs).

GM4 Annex I Definitions

ED Decision 2012/015/R

HEAD-UP GUIDANCE LANDING SYSTEM (HUDLS)

A HUDLS is typically used for primary approach guidance to decision heights of 50 ft.

GM5 Annex I Definitions

ED Decision 2016/022/R

HELICOPTER EMERGENCY MEDICAL SERVICES (HEMS) FLIGHT

(a) A HEMS flight (or more commonly referred to as HEMS mission) normally starts and ends at the HEMS operating base following tasking by the 'HEMS dispatch centre'. Tasking can also occur when airborne, or on the ground at locations other than the HEMS operating base.

(b) The following elements should be regarded as integral parts of the HEMS mission:

(1) flights to and from the HEMS operating site when initiated by the HEMS dispatch centre;

(2) flights to and from an aerodrome/operating site for the delivery or pick-up of medical supplies and/or persons required for completion of the HEMS mission; and

(3) flights to and from an aerodrome/operating site for refuelling required for completion of the HEMS mission.

GM6 Annex I Definitions

ED Decision 2016/022/R

HOSTILE ENVIRONMENT

Those parts of an open-sea area not considered to constitute a hostile environment should be designated by the appropriate authority in the appropriate aeronautical information publication (AIP) or other suitable documentation.

GM7 Annex I Definitions

ED Decision 2016/022/R

NIGHT VISION IMAGING SYSTEM (NVIS)

Helicopter components of the NVIS include the radio altimeter, visual warning system and audio warning system.

GM8 Annex I Definitions

ED Decision 2016/022/R

OFFSHORE LOCATION

'Offshore location' includes, but is not limited to:

(a) helidecks;

(b) shipboard heliports; and

(c) winching areas on vessels or renewable-energy installations.

GM9 Annex I Definitions

ED Decision 2016/022/R

OFFSHORE OPERATIONS

An offshore operation is considered to be a helicopter flight for the purpose of:

(a) support of offshore oil, gas and mineral exploration, production, storage and transport;

(b) support to offshore wind turbines and other renewable-energy sources; or

(c) support to ships including sea pilot transfer.

GM10 Annex I Definitions

ED Decision 2016/022/R

COASTLINE

The national definition of coastline should be included by the appropriate authority in the aeronautical information publication (AIP) or other suitable documentation.

GM11 Annex I Definitions

ED Decision 2016/022/R

PUBLIC INTEREST SITE

An example of a public interest sites is a landing site based at a hospital located in a hostile environment in a congested area, which due to its size or obstacle environment does not allow the application of performance class 1 requirements that would otherwise be required for operations in a congested hostile environment.

GM12 Annex I Definitions

ED Decision 2016/022/R

TECHNICAL INSTRUCTIONS

The ICAO document number for the Technical Instructions is Doc 9284-AN/905.

GM13 Annex I Definitions

ED Decision 2016/022/R

V_1

The first action includes for example: apply brakes, reduce thrust, deploy speed brakes.

GM14 Annex I Definitions

ED Decision 2016/022/R

TASK SPECIALISTS

For the purpose of this Regulation, persons that are carried in a specialised operation, e.g. on a parachute flight, sensational flight or scientific research flight, are considered to be task specialists.

GM15 Annex I Definitions

ED Decision 2019/005/R

UPSET PREVENTION AND RECOVERY TRAINING (UPRT) DEFINITIONS

'Aeroplane upset prevention and recovery training (UPRT)' refers to training consisting of:

— aeroplane upset prevention training: a combination of theoretical knowledge and flying training with the aim of providing flight crew with the required competencies to prevent aeroplane upsets; and

— aeroplane upset recovery training: a combination of theoretical knowledge and flying training with the aim of providing flight crew with the required competencies to recover from aeroplane upsets.

'Aeroplane upset' refers to an undesired aircraft state characterised by unintentional divergences from parameters normally experienced during operations. An aeroplane upset may involve pitch and/or bank angle divergences as well as inappropriate airspeeds for the conditions.

'Angle of attack (AOA)' means the angle between the oncoming air, or relative wind, and a defined reference line on the aeroplane or wing.

'Approach-to-stall' means flight conditions bordered by the stall warning and stall.

'Competency' means a combination of skills, knowledge, and attitudes required to perform a task to the prescribed standard.

'Developed upset' means a condition meeting the definition of an aeroplane upset.

'Developing upset' means any time the aeroplane begins to unintentionally diverge from the intended flight path or airspeed.

'Energy state' means how much of each kind of energy (kinetic, potential or chemical) the aeroplane has available at any given time.

'Error' means an action or inaction by the flight crew that leads to deviations from organisational or flight crew intentions or expectations.

'Error management' means the process of detecting and responding to errors with countermeasures that reduce or eliminate the consequences of errors, and mitigate the probability of further errors or undesired aircraft states.

'First indication of a stall' means the initial aural, tactile or visual sign of an impending stall, which can be either naturally or synthetically induced.

'Flight crew resilience' means the ability of a flight crew member to recognise, absorb and adapt to disruptions.

'Fidelity level' means the level of realism assigned to each of the defined FSTD features.

'Flight path' means the trajectory or path of the aeroplane travelling through the air over a given space of time.

'Flight path management' means active manipulation, using either the aeroplanes automation or manual handling, to command the aeroplane flight controls to direct the aeroplane along a desired trajectory.

'FSTD Training Envelope' refers to the high and moderate confidence regions of the FSTD validation envelope.

'Load factor' factor means the ratio of a specified load to the weight of the aeroplane, the former being expressed in terms of aerodynamic forces, propulsive forces, or ground reactions.

'Loss of control in flight (LOCI)' means a categorisation of an accident or incident resulting from a deviation from the intended flight path.

'Manoeuvre-based training' means training that focuses on a single event or manoeuvre in isolation.

'Negative training' means training which unintentionally introduces incorrect information or invalid concepts, which could actually decrease rather than increase safety.

'Negative transfer of training' means the application (and 'transfer') of what was learned in a training environment (i.e., a classroom, an FSTD) to normal practice, i.e. it describes the degree to which what was learned in training is applied to actual normal practices. In this context, negative transfer of training refers to the inappropriate generalisation of knowledge and skill to a situation or setting in normal practice that does not equal the training situation or setting.

'Post-stall regime' means flight conditions at an angle of attack greater than the critical angle of attack.

'Scenario-based training' means training that incorporates manoeuvres into real-world experiences to cultivate practical flying skills in an operational environment.

'Stall' means a loss of lift caused by exceeding the aeroplane's critical angle of attack.

Note: A stalled condition can exist at any attitude and airspeed, and may be recognised by continuous stall warning activation accompanied by at least one of the following:

(a) buffeting, which could be heavy at times;

(b) lack of pitch authority and/or roll control; and

(c) inability to arrest the descent rate.

'Stall Event' means an occurrence whereby the aeroplane experiences conditions associated with an approach-to-stall or a stall.

'Stall (event) recovery procedure' means the manufacturer-approved aeroplane-specific stall recovery procedure. If an OEM-approved recovery procedure does not exist, the aeroplane-specific stall recovery procedure developed by the operator, based on the stall recovery template contained in GM5 ORO.FC.220&230, may be used.

'Stall warning' means a natural or synthetic indication provided when approaching a stall that may include one or more of the following indications:

(a) aerodynamic buffeting (some aeroplanes will buffet more than others);

(b) reduced roll stability and aileron effectiveness;

(c) visual or aural cues and warnings;

(d) reduced elevator (pitch) authority;

(e) inability to maintain altitude or arrest rate of descent; and

(f) stick shaker activation (if installed).

Note: A stall warning indicates an immediate need to reduce the angle of attack.

'Startle' means the initial short-term, involuntary physiological and cognitive reactions to an unexpected event that commence the normal human stress response.

'Stick pusher' means a device that, automatically applies a nose down movement and pitch force to an aeroplane's control columns, to attempt to decrease the aeroplane's angle of attack. Device activation may occur before or after aerodynamic stall, depending on the aeroplane type.

Note: A stick pusher is not installed on all aeroplane types.

'Stick shaker' means a device that automatically vibrates the control column to warn the pilot of an approaching stall.

Note: A stick shaker is not installed on all aeroplane types.

'Stress (response)' means the response to a threatening event that includes physiological, psychological and cognitive effects. These effects may range from positive to negative and can either enhance or degrade performance.

'Surprise' means the emotionally-based recognition of a difference in what was expected and what is actual.

'Threat' means events or errors that occur beyond the influence of the flight crew, increase operational complexity and must be managed to maintain the margin of safety.

'Threat management' means the process of detecting and responding to threats with countermeasures that reduce or eliminate the consequences of threats and mitigate the probability of errors or undesired aircraft states.

'Train-to-proficiency' means approved training designed to achieve end-state performance objectives, providing sufficient assurances that the trained individual is capable to consistently carry out specific tasks safely and effectively.

Note: In the context of this definition, 'train-to-proficiency' can be replaced by 'training-to-proficiency'.

'Undesired aircraft state' means flight crew-induced aircraft position or speed deviation, misapplication of controls, or incorrect systems configuration, associated with a reduction in margins of safety.

Note: Undesired states can be managed effectively, restoring margins of safety, or flight crew response(s) can induce an additional error, incident, or accident.

Note: All countermeasures are necessary flight crew actions. However, some countermeasures to threats, errors and undesired aircraft states that flight crew employ, build upon 'hard'/systemic-based resources provided by the aviation system.

'Unsafe situation' means a situation, which has led to an unacceptable reduction in safety margin.

GM16 Annex I Definitions

ED Decision 2019/008/R

MINOR FAILURE CONDITION

Minor failure conditions may include, for example, a slight reduction in safety margins or functional capabilities, a slight increase in crew workload, such as routine flight plan changes, or some physical discomfort to passengers or cabin crew. Further guidance can be found in AMC 25.1309.

Minor failure conditions are not considered to be unsafe conditions in accordance with AMC 21.A.3B(b).

GM17 Annex I Definitions

ED Decision 2019/019/R

SIMPLE AND COMPLEX PERSONNEL-CARRYING DEVICE SYSTEM (PCDS)

(a) The following may qualify as a simple PCDS:

(1) A safety harness or rescue triangle for no more than two persons.

(2) A fixed-rope system for no more than two persons, to be attached under a single cargo hook or Y-rope to be attached to a dual hook.

(b) The following may not qualify as a simple PCDS:

(1) Any system that connects three persons or more to the helicopter.

(2) A PCDS with new or novel features.

(3) A PCDS that has not yet been proven by an appreciable and satisfactory service experience.

(c) The connecting elements to the hoist or cargo hook are part of the PCDS.

(d) The following standards may be used for a simple PCDS:

Table 1: Information on existing available standards applicable to a simple PCDS

Regulation (EU) 2016/425[1] or Directive 89/686/EEC if validly marketed before 21 April 2019	Personal protective equipment
Directive 2006/42/EC[2]	Machinery
EN 354	Personal protective equipment for work positioning and prevention of falls from a height — lanyards
EN 355	Personal protective equipment against falls from a height — energy absorbers
EN 358	Personal protective equipment for work positioning and prevention of falls from a height — belts for work positioning and restraint and work positioning lanyards
EN 361	Personal protective equipment against falls from a height — full body harnesses
EN 362	Personal protective equipment against falls from a height — connectors
EN 363	Personal fall protection equipment — personal fall-protection systems
EN 364	Personal protective equipment against falls from a height — test methods
EN 365	Marking/packaging/instructions to use
EN 813	Personal fall-protection equipment — sit harnesses
EN 1497	Personal protective equipment against falls from a height — rescue harnesses
EN 1498	Personal protective equipment against falls from a height — rescue loops
EN 1891	Personal protective equipment for the prevention of falls from a height — low stretch kernmantle ropes
EN 12275	Mountaineering equipment — connectors — safety requirements and test methods
EN 12277	Mountaineering equipment — harnesses — safety requirements and test methods

GM18 Annex I Definitions

ED Decision 2019/019/R

DETERMINING THE PRINCIPAL PLACE OF BUSINESS

(a) The principal place of business encompasses the principal financial functions and operational control of the activities of an operator. It may refer to the organisation's site from which the majority of its management personnel specified in ORO.GEN.110 directs, controls or coordinates its operational activities, ensuring that the organisation complies with Regulation (EU) No 965/2012. For non-commercial operations, this is usually the home base of the aircraft concerned or the location of the flight department.

[1] OJ L 81, 31.3.2016, p. 51.

[2] OJ L 157, 9.6.2006, p. 24.

(b) Since an operator, especially in the world of non-commercial operations, may use several places where it performs financial transactions, or several operational bases where there are personnel in charge of operational control, for the purpose of an effective oversight, it is relevant that the principal place of business be the one:

(1) where the operator has registered its organisation with the local register and where it pays corporate tax;

(2) where its main building facilities are located;

(3) where main administrative and financial work is being done (where salaries and employment benefits are paid); and

(4) from where the organisation management directs, controls or coordinates a substantial part of its activities, ensuring that the organisation complies with the requirements specified in Regulation (EU) No 965/2012.

(c) Organisations that perform also activities which are not subject to Part-ORO, Part-NCC or Part-SPO are recommended to consider that part of the organisation which is responsible for the operation of aircraft subject to Part-ORO, Part-NCC or Part-SPO.

For such organisations, the accountable manager is that manager who has the authority to ensure that all activities subject to Part-ORO, Part-NCC or Part-SPO can be financed and carried out in accordance with the applicable requirements. If the accountable manager is not located in the part of the organisation that is responsible for the operation of aircraft, but the other criteria mentioned in point (b) apply, the location of the accountable manager does not need to be considered for the determination of the principal place of business.

GM19 Annex I Definitions

ED Decision 2021/002/R

EVIDENCE-BASED TRAINING

'Behaviour' refers to the way a person responds, either overtly or covertly, to a specific set of conditions, and which is capable of being measured.

'Instructor concordance' is also called 'inter-rater reliability'.

'Conditions' refers to anything that may qualify a specific environment in which performance will be demonstrated.

'Cycle' refers to the combination of two modules where Cycle 1 comprises Modules 1 and 2, Cycle 2 comprises Modules 3 and 4, and Cycle 3 comprises Modules 5 and 6 of the 3-year EBT programme.

'Equivalency of approaches' refers to approach clustering in other industry documentation.

'Equivalency of malfunctions' refers to malfunction clustering in other industry documentation.

'Evaluation phase (EVAL)' refers to the phase where a first assessment of competencies is performed in order to identify individual training needs. On completion of the evaluation phase, any areas that do not meet the minimum competency standard will become the focus of the subsequent training. The evaluation phase comprises a complete mission as a crew but not necessarily a complete flight.

'Facilitation technique' refers to an active training method, which uses effective questioning, listening and a non-judgemental approach, and is particularly effective in developing skills and attitudes, assisting trainees in developing insight and their own solutions, resulting in better understanding, retention and commitment.

'Line-orientated flight scenario(s)' are comprised of scenario elements derived from the table of assessment and training topics.

'Line-orientated safety audit (LOSA)' is one of the tools used to help evaluate the performance of the operations. It consists of line flights that are observed by appropriately qualified operator personnel to provide feedback to validate the EBT programme. LOSA may be one of the tools used to look at those elements of the operation that are unable to be monitored by FDM or Advanced FDM programmes.

'Manoeuvres training phase' refers to the phase where skill retention is trained (body memory actions). Flight path control may be accomplished by a variety of means including manual aircraft control and the use of auto flight systems.

'Monitoring' refers to a cognitive process to compare an actual to an expected state. It requires knowledge, skills and attitudes to create a mental model and to take appropriate action when deviations are recognised.

'Observable behaviour (OB)' refers to a single role-related behaviour that can be observed. The instructor may or may not be able to measure it.

'Performance criteria' refers to statements used to assess whether the required levels of performance have been achieved for a competency. A performance criterion consists of an OB, a condition (or conditions) and a competency standard.

'Practical assessment (or EBT practical assessment)' refers to a method for assessing performance that serves to verify the integrated performance of competencies. It takes place in either a simulated or an operational environment. An EBT assessment is equivalent to a proficiency check and is performed under the instructor privilege in the context of proficiency check in accordance with Appendix 10 to Part-FCL. More information can be found in ICAO Doc 9868 'PANS-TRG'.

'Scenario-based training phase (SBT)' refers to the largest phase in the EBT programme. It is designed to maximise crew's exposure to a variety of situations that develop and sustain a high level of competency and resilience. The scenario for this phase should include critical external and environmental threats, to build effective crew interaction to identify and manage errors. A portion of the phase will also be directed towards the management of critical system malfunctions.

Scenario elements address the training topic and detail the threat and/or error that the crew are exposed to.

'Train-to-proficiency' refers to approved training designed to achieve end-state performance objectives, providing sufficient assurance that the trained individual is capable of consistently carrying out specific tasks safely and effectively.

Note: In the context of this definition, 'train-to-proficiency' can be replaced by 'training-to-proficiency'.

GM20 Annex I Definitions

ED Decision 2021/005/R

CONTAMINATED RUNWAY

As the runway condition is reported in runway thirds, a significant portion of the runway surface area is more than 25 % of one third of the runway surface area within the required length and width being used.

The runway length being used in this context is the physical length of runway available, typically from the start of the take-off run available (TORA) in one direction to the start of the TORA in the opposite direction. When the runway is shortened by a notice to airmen (NOTAM) — for example, due to works,

or the aerodrome operator is not able to clear the full length of the runway and closes part of it for operations, the length being used is that declared in the NOTAM and the 'reduced runway length' that declared in the RCR.

The runway width being used in this context is the physical width of the runway (between the runway edge lights), or the 'cleared width' if reported in the RCR. It is not intended that 25 % coverage is reported when contaminants affect only the runway edges after runway cleaning. Runway inspectors are instructed to focus on the area around the wheel tracks when reporting the contaminant type, coverage and depth.

GM21 Annex I Definitions

ED Decision 2021/005/R

DRY RUNWAY/WET RUNWAY

The 'area intended to be used' means the area of the runway that is part of the TORA, accelerate and stop distance available (ASDA) or landing distance available (LDA) declared in the aeronautical information publication (AIP) or by a NOTAM.

GM22 Annex I Definitions

ED Decision 2021/005/R

RUNWAY CONDITION CODE (RWYCC)

The purpose of the runway condition code (RWYCC) is to permit an operational aeroplane landing performance calculation by the flight crew.

GM23 Annex I Definitions

ED Decision 2021/005/R

RUNWAY SURFACE CONDITION(S)

(a) The runway surface conditions used in the RCR establish a common language between the aerodrome operator, the aeroplane manufacturer and the aeroplane operator.

(b) Aircraft de-icing chemicals and other contaminants are also reported but are not included in the list of runway surface condition descriptors because their effect on the runway surface friction characteristics and the RWYCC cannot be evaluated in a standardised manner.

GM24 Annex I Definitions

ED Decision 2021/005/R

RUNWAY SURFACE CONDITION DESCRIPTORS — GENERAL

The runway surface condition descriptors are used solely in the context of the RCR and are not intended to supersede or replace any existing World Meteorological Organization (WMO) definitions.

RUNWAY SURFACE CONDITION DESCRIPTORS — FROST

(a) Freezing refers to the freezing point of water (0 °C).

(b) Under certain conditions, frost can cause the surface to become very slippery, and it is then reported appropriately as downgraded RWYCC.

RUNWAY SURFACE CONDITION DESCRIPTORS — STANDING WATER

Running water of depth greater than 3 mm is reported as 'standing water' by convention.

RUNWAY SURFACE CONDITION DESCRIPTORS – WET ICE

Freezing precipitation can lead to runway conditions associated with wet ice from an aeroplane performance point of view. Wet ice can cause the surface to become very slippery. It is then reported appropriately as downgraded RWYCC.

GM25 Annex I Definitions

ED Decision 2021/005/R

LANDING DISTANCE AT TIME OF ARRIVAL

The landing distance data to be used for a landing performance assessment at time of arrival allow to establish an operationally achievable landing distance from 50ft above runway threshold to full stop that takes into account AFM procedures for final approach and landing and is provided as a function of the main influence parameters such as aeroplane mass and configuration, pressure altitude, wind, outside air temperature, runway slope and approach speed increments. It may be provided for use of automation such as autobrakes and autoland and may account for reverse thrust use. As the landing distance at time of arrival is the unfactored minimum landing distance achievable for the assumed conditions, an appropriate margin should be applied to this distance to determine the minimum LDA necessary for a safe stop.

GM26 Annex I Definitions

ED Decision 2021/005/R

SLIPPERY WET RUNWAY

(a) The surface friction characteristics of the runway are considered degraded when below the minimum standards.

(b) A portion of runway in the order of 100 m long may be considered significant.

GM27 Annex I Definitions

ED Decision 2021/005/R

FLIGHT RECORDER

A flight recorder may be crash-protected or lightweight and may be deployable or not. Crash-protected flight recorders are capable of withstanding very severe crash conditions such as those encountered during some accidents of large aeroplanes and large helicopters. Crash-protected flight recorders comprise one or more of the following systems: a flight data recorder (FDR), a cockpit voice recorder (CVR), an airborne image recorder (AIR), or a data link recorder (DLR). Lightweight flight recorders are usually designed to meet less demanding requirements than crash-protected flight recorders, which allows them to be lighter. A non-deployable flight recorder is permanently attached to the aircraft. A deployable flight recorder includes a part that is capable of automatically deploying from the aircraft.

GM28 Annex I Definitions for terms used in Annexes II to VIII

ED Decision 2022/005/R

FLIGHT MONITORING AND FLIGHT WATCH — RELEVANT SAFETY INFORMATION

Relevant safety information is any element that may affect the safety of the flight, such as:

(a) an aircraft technical failure (e.g. failures where flight operations personnel can help to calculate the landing distance or new trip fuel or to update the aerodrome minima);

(b) unforeseen hazards:

(1) air traffic (e.g. delays and/or long distance to complete the approach, extensive use of radar vectoring);

(2) meteorological conditions (e.g. DH and aerodrome operating minima, adverse or extreme meteorological conditions);

(3) aerodrome and runway status (e.g. insufficient runway length due to brake failure, obstruction or closure of the runway, runway contamination, failure or malfunction caused by on-ground navigation or approach equipment);

(4) navigation aid status (e.g. failure of the navigation aids);

(5) availability of communications (e.g. failure of communications capabilities, interruptions, interferences, change of frequency channels); and

(6) terrain and obstacles (e.g. geophysical phenomena (volcanic eruptions, earthquakes, tsunami), difficult terrain at an unplanned aerodrome (large bodies of water, mountains);

(c) updates of the operational flight plan when they affect the fuel reserves:

(1) diversion to an en route alternate (ERA) aerodrome, a destination alternate, or a take-off alternate aerodrome;

(2) change of the runway selected for landing if the new runway is shorter;

(3) location of the decision point or the point of no return (PNR) due to, for instance, change in altitude, in wind data, etc.;

(4) significant in-flight change of the flight route compared to the route in the flight planning; or

(5) significant deviation from the planned fuel consumption; and

(d) position reporting:

(1) flight-monitoring personnel should report in every phase of the flight: taxi, take-off, climb, cruise, cruise steep climb, descent, approach, landing;

(2) flight watch provides active tracking; and

(3) where no real-time automatic position-reporting is possible, the operator should have an acceptable alternative to ensure in-flight reporting at least every hour.

GM29 Annex I Definitions for terms used in Annexes II to VIII

ED Decision 2022/005/R

FUEL/ENERGY

The energy used for aircraft propulsion comes from various sources and is of various types.

A frequently used type of energy in aviation is derived from processing (in a piston or turbine engine) hydrocarbon-based fuels that include gasoline (leaded or unleaded), diesel, avgas, JET A-1, and JET B. Hydrogen may also be used as fuel for fuel cell applications, which generate electricity that is used to generate propulsion. However, as current technologies already use other sources of energy for aircraft propulsion, such as stored electrical energy, the typical term ‘fuel’ has become restrictive and no longer covers emerging technologies.

Therefore, a broader, combined term is introduced to accommodate new types of energy, other than fuel, used for aircraft propulsion purposes.

The term 'fuel/energy' should cater for both typical fuel and any other type or source of energy used for aircraft propulsion, including but not limited to electrical energy stored in batteries.

When used in the combination 'fuel/energy', the term 'energy' only refers to the electrical energy used for aircraft propulsion purposes. It does not include any other form of stored electrical energy that is used on board an aircraft (e.g. batteries of EFBs, ELTs, underwater locating devices (ULDs), automatic external defibrillators (AEDs), or backup energy sources).

GM30 Annex I Definitions for terms used in Annexes II to VIII

ED Decision 2022/005/R

FUEL/ENERGY EN ROUTE ALTERNATE (ERA) AERODROME

Fuel/energy ERA aerodromes could be used in the following cases:

(a) 'fuel ERA aerodrome critical scenario': that aerodrome is used when additional fuel is required at the most critical point along the route to comply with point (c)(6) of point CAT.OP.MPA.181 'Fuel/energy scheme — fuel/energy planning and in-flight re-planning policy — aeroplanes';

(b) 'fuel ERA aerodrome 3 %': that aerodrome is used when an operator reduces the contingency fuel to 3 %; and

(c) 'fuel ERA aerodrome PNR': that aerodrome is used at the PNR during isolated aerodrome operations.

GM31 Annex I Definitions

ED Decision 2022/012/R

DEFINITIONS OF TERMS RELATED TO ALL-WEATHER OPERATIONS

The following terms and concepts are used in the provisions related to all-weather operations in the AMC and GM to Regulation (EU) No 965/2012:

'Advanced aircraft' means an aircraft with equipment in addition to that required for a basic aircraft for a given take-off, approach or landing operation.

'AFM or additional data from the TC/STC holder' — an AFM or additional data from the TC/STC holder may provide:

— limitations, in accordance with which the aircraft must be operated, as described under point 4.1 of Annex V to Regulation (EU) 2018/1139. This means that the aircraft may NOT exceed those given values; or

— demonstrated capabilities, which are the assumptions, envelope or conditions that were used to demonstrate adequate performance to comply with the appropriate certification specifications.

However, some AFMs (especially for those aircraft or landing systems that were certified before the introduction of CS-AWO Issue 2) may not include all of the assumptions, envelope or conditions that were used to demonstrate adequate performance. Information regarding the assumptions, envelope, or conditions that were used to demonstrate adequate performance of a landing system can be provided by equivalent documentation issued by TC/STC holder.

Other types of information issued by the TC/STC holder may include (not an exhaustive list):

— equivalence between different aircraft models (types);

— equivalence between aircraft types and variants;

— landing systems equivalence;

— a list of runways with their demonstrated performance;

— a letter of no-technical objection/evaluation letter.

Note: 'TC/STC holder' should be understood as the holder of the certificate for the landing system.

'Basic aircraft' means an aircraft which has the minimum equipment required to perform the intended take-off, approach or landing operation.

'Continuous descent final approach (CDFA)': when the circling altitude/height is reached, it is acceptable to maintain altitude (level-off) and transition to the visual segment. The operator may provide a point in the visual segment in which the descent may be resumed to follow a continuous descent to a point approximately 15 m (50 ft) above the landing runway threshold or the point where the flare manoeuvre begins for the type of aircraft flown.

'Enhanced flight vision system (EFVS)-Approach (EFVS-A)' means a system that has been demonstrated to meet the criteria to be used for approach operations from a decision altitude/height (DA/H) or a minimum descent altitude/height (MDA/H) to 100 ft (30 m) threshold elevation while all system components are functioning as intended, but may have failure modes that could result in the loss of EFVS capability. It should be assumed for an EFVS-A that:

(a) the pilot will conduct a go-around at or above 100 ft threshold elevation, in the event of an EFVS failure; and

(b) descent below 100 ft above the threshold elevation through to touchdown and roll-out should be conducted using natural vision so that any failure of the EFVS does not prevent the pilot from completing the approach and landing.

'Enhanced flight vision system (EFVS)-Landing (EFVS-L)' means a system that has been demonstrated to meet the criteria to be used for approach and landing operations that rely on sufficient visibility conditions to enable unaided roll-out and to mitigate for loss of EFVS function.

'Head-up display (HUD) or equivalent display system' means a display system which presents flight information to the pilot's forward external field of view (FOV), and which does not significantly restrict the external view.

'Landing system' means an airborne equipment, which:

(a) provides automatic control of the aircraft during the approach and landing (i.e. automatic landing system); or

(b) has been demonstrated to meet the criteria to be used for approach and landing operations (e.g. HUD landing system, EFVS-L or any other approved system).

'Landing system assessment area (LSAA)' means the part of the runway that extends from the threshold to a distance of 600 m from the threshold.

Note — Although the landing systems certification criteria use a value greater than 600 m after the threshold to evaluate limit conditions, for the purpose of flight operations assessment a distance of 600 m is the relevant part as landing beyond this point is not expected to occur in day-to-day operations. The LSAA may not necessarily be coincident with the touchdown zone. The touchdown zone is specified in CS-ADR DSN.

'Low-visibility procedures (LVPs)' means procedures applied by an aerodrome for the purpose of ensuring safety during low-visibility operations (LVOs).

Regular runway means a runway whose characteristics fit within the acceptable limits demonstrated by the original equipment manufacturer (OEM) during certification. The classification of a runway as a 'regular runway' is different from one set of equipment to another.

'Required visual reference' refers to that section of the visual aids or of the approach area which should have been in view for sufficient time for the pilot to have made an assessment of the aircraft position and rate of change of position, in relation to the desired flight path. In the case of a circling approach, the required visual reference is the runway environment.

'Satellite-based augmentation system (SBAS)' means a wide coverage augmentation system in which the user receives augmentation information from a satellite-based transmitter. The most common form of SBAS in Europe is the European Geostationary Navigation Overlay Service (EGNOS).

'Synthetic vision system (SVS)' means a system that displays data derived synthetic images of the external scene from the perspective of the flight deck.

'Landing area' means that part of a movement area intended for the landing or take-off of aircraft.

'Touchdown zone (TDZ)' means the portion of a runway, beyond the threshold, where landing aeroplanes are intended to first contact the runway.

'Type B instrument approach operations categories': where decision height (DH) and runway visual range (RVR) fall into different categories of operation, the instrument approach operation would be conducted in accordance with requirements of the most demanding category. This does not apply if the RVR and/or DH has been approved as operational credits.

GM32 Annex I Definitions

ED Decision 2022/012/R

EFVSs — DIFFERENCES WITH ENHANCED VISION SYSTEMS (EVSs)

(a) Introduction to EVSs

EVSs use sensing technology to improve a pilot's ability to detect objects and topographical features ahead of the aircraft. Different types of sensing technology are used on different aircraft installations. Sensing technologies used include forward-looking infrared, millimetre wave radiometry, millimetre wave radar or low-light level intensification; additional technologies may be developed in the future. The image from sensors may be displayed to the pilot in a number of different ways including 'head-up' and 'head-down' displays.

(b) EVSs and EFVSs

An EFVS is an EVS that is integrated with a flight guidance system, which presents the image from sensors to the pilot on a head-up display (HUD) or equivalent display. If EFVS equipment is certified according to the applicable airworthiness requirements and an operator holds the necessary specific approval, then an EFVS may be used for EFVS operations. An EFVS operation is an operation with an operational credit which allows operating in visibility conditions lower than those in which operations without the use of EFVS are permitted.

(c) Functions of EVSs

Depending on the capabilities of the particular system, EVSs may be useful during operations at night or in reduced visibility for the following:

(1) improving visibility of airport features and other traffic during ground operations;

(2) displaying terrain and obstructions in flight;

(3) displaying weather in flight;

(4) improving visibility of the runway environment during approach operations; and

(5) improving visibility of obstructions on a runway (e.g. aircraft, vehicles or animals) during take-off and approach operations.

(d) Limitations of EVSs

EVSs are a useful tool for enhancing situational awareness; however, each EVS installation has its own specific limitations. These may include:

(1) Performance variations depend on conditions including ambient temperature and lighting and weather phenomena. A system may provide very different image qualities in the same visibility depending on the particular phenomena causing restricted visibility, e.g. haze, rain, fog, snow, dust, etc.

(2) An EVS may not be able to detect certain types of artificial lighting. Light emitting diode (LED) lights have a much lower infrared signature than incandescent lights and therefore may not be detected by some types of EVSs. LED lighting is used for runway, taxiway and approach lighting at many airports.

(3) Monochrome display. EVSs will generally not be able to detect and display the colour of airport lighting. This means that colour coding used on airport lighting will not be visible to the pilot using an EVS.

(4) Many EVS installations do not have redundancy, so a single failure may lead to loss of EVS image.

(5) The location of the sensor on the airframe may mean that in certain conditions it could be susceptible to ice accretion or obscuration from impact damage from objects such as insects or birds.

(6) Where an EVS image is presented on a HUD or an equivalent display, the image needs to be consistent with the pilot's external view through the display. Particular installations may have limitations on the conditions under which this consistent image can be generated (e.g. crosswind conditions during approach).

(7) Imaging sensor performance can be variable and unpredictable. Pilots should not assume that a flightpath is free of hazards because none are visible in an EVS image.

(e) Considerations for the use of EVSs

EVSs may be used in all phases of flight and have significant potential to enhance the pilot's situational awareness. No specific approval is required for the use of an EVS; however, the operator is responsible for ensuring that the flight crew members have received training on the equipment installed on their aircraft in accordance with ORO.FC.120. In addition, the operator is responsible for evaluating the risks associated with system limitations and for implementing suitable mitigation measures in accordance with ORO.GEN.200(a)(3) before using the EVS.

The use of EVSs does not permit the use of different operating minima, and EVS images cannot replace natural vision for the required visual reference in any phase of flight including take-off, approach or landing.

An EVS that is not an EFVS cannot be used for EFVS operations and therefore does not obtain an operational credit.

GM33 Annex I Definitions

ED Decision 2022/012/R

INSTRUMENT APPROACH OPERATIONS

(a) Depending on the instrument approach procedure (IAP) in use, the lateral and vertical navigation guidance for an instrument approach operation may be provided by:

(1) a ground-based radio navigation aid; or

(2) computer-generated navigation data from ground-based, space-based or self-contained navigation aids or a combination of these.

(b) A non-precision approach (NPA) procedure flown as CDFA with vertical path guidance calculated by on-board equipment is considered to be a 3D instrument approach operation. Depending on the limitations of the equipment and information sources used to generate vertical guidance, it may be necessary for the pilot to cross-check this guidance against other navigational sources during the approach and to ensure that the minimum altitude/height over published step-down fixes is observed. CDFAs with manual calculation of the required rate of descent are considered 2D operations.

(c) Further guidance on the classification of an instrument approach operation based on the designed lowest operating minima is contained in Appendix J to ICAO Doc 9365 Manual of All-Weather Operations, Fourth Edition, 2017.

GM34 Annex I Definitions

ED Decision 2022/012/R

DECISION ALTITUDE (DA) OR DECISION HEIGHT (DH)

(a) Decision altitude (DA) is referenced to mean sea level and decision height (DH) is referenced to the threshold elevation.

(b) For operations using DA, the aircraft altimeters are set to QNH. For operations using a barometric DH, the aircraft altimeters are set to QFE.

(c) For SA CAT I, SA CAT II, CAT II/III operations, the DH is based on the use of a radio altimeter or other devices capable of providing equivalent performance. The DH is determined with reference to threshold elevation, but the value of the DH set for the approach will be based on the height of the aircraft above the pre-threshold terrain, which may be higher or lower than the threshold.

(d) For convenience, when both expressions are used, they may be written in the form ‘decision altitude/height’ and abbreviated ‘DA/H’.

GM35 Annex I Definitions

ED Decision 2022/012/R

MINIMUM DESCENT ALTITUDE (MDA) OR MINIMUM DESCENT HEIGHT (MDH)

(a) Minimum descent altitude (MDA) is referenced to mean sea level and minimum descent height (MDH) is referenced to the aerodrome elevation or to the threshold elevation if that is more than 7 ft below the aerodrome elevation. An MDH for a circling approach is referenced to the aerodrome elevation.

(b) For operations using MDA, the aircraft altimeters are set to QNH. For operations using a barometric MDH, the aircraft altimeters are set to QFE.

(c) For convenience, when both expressions are used, they may be written in the form ‘minimum descent altitude/height’ and abbreviated ‘MDA/H’.

ANNEX VII (PART-NCO)

SUBPART A: GENERAL REQUIREMENTS

NCO.GEN.100 Competent authority

Regulation (EU) 2019/1384

(a) The competent authority shall be the authority designated by the Member State where the aircraft is registered.

(b) If the aircraft is registered in a third country, the competent authority shall be the authority designated by the Member State where the operator has its principal place of business, is established or is residing.

GM1 NCO.GEN.100(b) Competent authority

ED Decision 2019/019/R

DETERMINING THE PLACE WHERE AN OPERATOR IS RESIDING

For the purpose of Regulation (EU) No 965/2012, the concept of 'place where the operator is residing' is mainly addressed to a natural person.

The place where the operator resides is the place where the operator complies with his or her tax obligations.

Several criteria can be used to help determining a person's place of residence. These include, for example:

(a) the duration of a person's presence on the territory of the countries concerned;

(b) the person's family status and ties;

(c) the person's housing situation and how permanent it is;

(d) the place where the person pursues professional or non-profit activities;

(e) the characteristics of the person's professional activity;

(f) the Member State where the person resides for taxation purposes.

NCO.GEN.101 Means of compliance

Regulation (EU) No 800/2013

Alternative means of compliance to those adopted by the Agency may be used by an operator to establish compliance with Regulation (EC) No 216/2008 and its Implementing Rules.

NCO.GEN.103 Introductory flights

Regulation (EU) 2018/1975

Introductory flights referred to in Article 6(4a)(c) of this Regulation when conducted in accordance with this Annex, shall:

(a) start and end at the same aerodrome or operating site;

(b) be operated under VFR by day;

(c) be overseen by a nominated person responsible for their safety; and

(d) comply with any other conditions stipulated by the competent authority.

NCO.GEN.104 Use of aircraft included in an AOC by an NCO operator

Regulation (EU) 2019/1384

(a) An NCO operator may use other than complex motor-powered aircraft listed on an operator's AOC to conduct non-commercial operations in accordance with this Annex.

(b) The NCO operator using the aircraft in accordance with point (a) shall establish a procedure:

(1) clearly describing how operational control of the aircraft is transferred between the AOC holder and the NCO operator, as referred to in point ORO.GEN.310 of Annex III;

(2) describing the handover procedure of the aircraft upon its return to the AOC holder.

That procedure shall be included in a contract between the AOC holder and the NCO operator.

The NCO operator shall ensure that the procedure is communicated to the relevant personnel.

(c) The continuing airworthiness of the aircraft used pursuant to point (a) shall be managed by organisation responsible for the continuing airworthiness for the aircraft included in the AOC, in accordance with Regulation (EU) No 1321/2014.

(d) The NCO operator using the aircraft in accordance with point (a) shall ensure the following:

(1) that every flight conducted under its operational control is recorded in the aircraft technical log system;

(2) that no changes to the aircraft systems or configuration are made;

(3) that any defect or technical malfunction occurring while the aircraft is under its operational control is reported to the organisation referred to in point (c) immediately after the flight;

(4) that the AOC holder receives a copy of any occurrence report related to the flights performed with the aircraft, completed in accordance with Regulation (EU) No 376/2014 and Regulation (EU) 2015/1018.

AMC1 NCO.GEN.104 Use of aircraft included in an AOC by an NCO operator

ED Decision 2019/019/R

RESPONSIBILITIES OF THE NCO OPERATOR

The operator using the aircraft included in an AOC for operations performed in accordance with Part-NCO should describe the following elements in its procedure required in NCO.GEN.104:

(a) the way in which the shifting of operational control is communicated, including how, when and to whom the information is communicated;

(b) the means to ensure that the relevant personnel are instructed on the following:

(1) to contact the organisation responsible for the management of continuing airworthiness of the aircraft of the AOC holder (CAMO or CAO) for any defect or technical malfunction which occurs before or during the operation.

The information about any defect or malfunction should be transmitted to the CAMO/CAO of the AOC holder before the aircraft is used for the next flight. The same information should be confirmed by the entries in the aircraft technical log system; and

(2) to report any occurrence in accordance with the applicable rules and the internal procedures; and

(c) the way in which the operator deals with failures and defects identified before the flight.

GM1 NCO.GEN.104 Use of aircraft included in an AOC by an NCO operator

ED Decision 2019/019/R

SCOPE

As per SPO.GEN.005(b), operators performing non-commercial specialised operations with other than complex motor-powered aircraft will comply with Annex VII (Part-NCO). Thus, such operators are also covered by NCO.GEN.104.

GM1 NCO.GEN.104(c) Use of aircraft included in an AOC by an NCO operator

ED Decision 2019/019/R

CONTINUING AIRWORTHINESS MANAGEMENT

In accordance with Annex I (Part-M) and Annex Vb (Part-ML) to Regulation (EU) No 1321/2014, the management of the continuing airworthiness of the aircraft by the CAMO/CAO of the AOC holder means that the NCO operator has established a written contract as per Appendix I to Part-M or Appendix I to Part-ML with this CAMO/CAO.

NCO.GEN.105 Pilot-in-command responsibilities and authority

Regulation (EU) 2018/1975

(a) The pilot-in-command shall be responsible for:

(1) the safety of the aircraft and of all crew members, passengers and cargo on board during aircraft operations as referred to in 1.c of Annex IV to Regulation (EC) No 216/2008;

(2) the initiation, continuation, termination or diversion of a flight in the interest of safety;

(3) ensuring that all operational procedures and checklists are complied with as referred to in 1.b of Annex IV to Regulation (EC) No 216/2008;

(4) only commencing a flight if he/she is satisfied that all operational limitations referred to in 2.a.3 of Annex IV to Regulation (EC) No 216/2008 are complied with, as follows:

(i) the aircraft is airworthy;

(ii) the aircraft is duly registered;

(iii) instruments and equipment required for the execution of that flight are installed in the aircraft and are operative, unless operation with inoperative equipment is permitted by the minimum equipment list (MEL) or equivalent document, if applicable, as provided for in points NCO.IDE.A.105 or NCO.IDE.H.105;

(iv) the mass of the aircraft and the centre of gravity location are such that the flight can be conducted within limits prescribed in the airworthiness documentation;

(v) all equipment, baggage and cargo are properly loaded and secured and an emergency evacuation remains possible;

(vi) the aircraft operating limitations as specified in the aircraft flight manual (AFM) will not be exceeded at any time during the flight; and

(vii) any navigational database required for PBN is suitable and current;

(5) not commencing a flight if he/she is incapacitated from performing duties by any cause such as injury, sickness, fatigue or the effects of any psychoactive substance;

(6) not continuing a flight beyond the nearest weather-permissible aerodrome or operating site when his/her capacity to perform duties is significantly reduced from causes such as fatigue, sickness or lack of oxygen;

(7) deciding on acceptance of the aircraft with unserviceabilities in accordance with the configuration deviation list (CDL) or minimum equipment list (MEL), as applicable; and

(8) recording utilisation data and all known or suspected defects in the aircraft at the termination of the flight, or series of flights, in the aircraft technical log or journey log for the aircraft.

(b) The pilot-in-command shall ensure that during critical phases of flight or whenever deemed necessary in the interest of safety, all crew members are seated at their assigned stations and do not perform any activities other than those required for the safe operation of the aircraft.

(c) The pilot-in-command shall have the authority to refuse carriage of or disembark any person, baggage or cargo that may represent a potential hazard to the safety of the aircraft or its occupants.

(d) The pilot-in-command shall, as soon as possible, report to the appropriate air traffic services (ATS) unit any hazardous weather or flight conditions encountered that are likely to affect the safety of other aircraft.

(e) The pilot-in-command shall, in an emergency situation that requires immediate decision and action, take any action he/she considers necessary under the circumstances in accordance with 7.d of Annex IV to Regulation (EC) No 216/2008. In such cases he/she may deviate from rules, operational procedures and methods in the interest of safety.

(f) During flight, the pilot-in-command shall:

(1) keep his/her safety belt fastened while at his/her station; and

(2) remain at the controls of the aircraft at all times except if another pilot is taking the controls.

(g) The pilot-in-command shall submit a report of an act of unlawful interference without delay to the competent authority and shall inform the designated local authority.

(h) The pilot-in-command shall notify the nearest appropriate authority by the quickest available means of any accident involving the aircraft that results in serious injury or death of any person or substantial damage to the aircraft or property.

AMC1 NCO.GEN.105 Pilot-in-command responsibilities and authority

ED Decision 2016/018/R

FLIGHT PREPARATION FOR PBN OPERATIONS

(a) The pilot-in-command should ensure that RNAV 1, RNAV 2, RNP 1, RNP 2, and RNP APCH routes or procedures to be used for the intended flight, including for any alternate aerodromes, are selectable from the navigation database and are not prohibited by NOTAM.

(b) The pilot-in-command should take account of any NOTAMs or pilot-in-command briefing material that could adversely affect the aircraft system operation along its flight plan including any alternate aerodromes.

(c) When PBN relies on GNSS systems for which RAIM is required for integrity, its availability should be verified during the preflight planning. In the event of a predicted continuous loss of fault detection of more than five minutes, the flight planning should be revised to reflect the lack of full PBN capability for that period.

(d) For RNP 4 operations with only GNSS sensors, a fault detection and exclusion (FDE) check should be performed. The maximum allowable time for which FDE capability is projected to be unavailable on any one event is 25 minutes. If predictions indicate that the maximum allowable FDE outage will be exceeded, the operation should be rescheduled to a time when FDE is available.

(e) For RNAV 10 operations, the pilot-in-command should take account of the RNAV 10 time limit declared for the inertial system, if applicable, considering also the effect of weather conditions that could affect flight duration in RNAV 10 airspace. Where an extension to the time limit is permitted, the pilot-in-command will need to ensure that en route radio facilities are serviceable before departure, and to apply radio updates in accordance with any AFM/POH limitation.

AMC2 NCO.GEN.105 Pilot-in-command responsibilities and authority

ED Decision 2016/018/R

DATABASE SUITABILITY

(a) The pilot-in-command should check that any navigational database required for PBN operations includes the routes and procedures required for the flight.

DATABASE CURRENCY

(b) The database validity (current AIRAC cycle) should be checked before the flight.

(c) Navigation databases should be current for the duration of the flight. If the AIRAC cycle is due to change during flight, the pilot-in-command should follow procedures established by the pilot-in-command to ensure the accuracy of navigation data, including the suitability of navigation facilities used to define the routes and procedures for the flight.

(d) An expired database may only be used if the following conditions are satisfied:

(1) the pilot-in-command has confirmed that the parts of the database which are intended to be used during the flight and any contingencies that are reasonable to expect are not changed in the current version;

(2) any NOTAMs associated with the navigational data are taken into account;

(3) maps and charts corresponding to those parts of the flight are current and have not been amended since the last cycle;

(4) any MEL limitations, where available, are observed; and

(5) the database has expired by no more than 28 days.

GM1 NCO.GEN.105 Pilot-in-command responsibilities and authority

ED Decision 2019/008/R

GENERAL

In accordance with point 1.3 of Annex V to Regulation (EU) 2018/1139[1] (essential requirements for air operations), the pilot-in-command is responsible for the operation and safety of the aircraft and for the safety of all passengers and cargo on board. This includes the following:

(a) the safety of all passengers and cargo on board, as soon as he/she arrives on board, until he/she leaves the aircraft at the end of the flight; and

(b) the operation and safety of the aircraft:

(1) for aeroplanes, from the moment it is first ready to move for the purpose of flight until the moment it comes to rest at the end of the flight and the engine(s) used as primary propulsion unit(s) is/are shut down;

(2) for helicopters, from the moment the engine(s) are started until the helicopter comes to rest at the end of the flight with the engine(s) shut down and the rotor blades stopped.

GM1 NCO.GEN.105(a)(8) Pilot-in-command responsibilities and authority

ED Decision 2014/016/R

RECORDING UTILISATION DATA

Where an aircraft conducts a series of flights of short duration — such as a helicopter doing a series of lifts — and the aircraft is operated by the same pilot-in-command, the utilisation data for the series of flights may be recorded in the aircraft technical log or journey log as a single entry.

AMC1 NCO.GEN.105(a)(3) Pilot-in-command responsibilities and authority

ED Decision 2022/005/R

CHECKLISTS

(a) The pilot-in-command should use the latest checklists provided by the manufacturer.

(b) If checks conducted prior to take-off are suspended at any point, the pilot-in-command should restart them from a safe point prior to the interruption.

[1] Regulation (EU) 2018/1139 of the European Parliament and of the Council of 4 July 2018 on common rules in the field of civil aviation and establishing a European Union Aviation Safety Agency, and amending Regulations (EC) No 2111/2005, (EC) No 1008/2008, (EU) No 996/2010, (EU) No 376/2014 and Directives 2014/30/EU and 2014/53/EU of the European Parliament and of the Council, and repealing Regulations (EC) No 552/2004 and (EC) No 216/2008 of the European Parliament and of the Council and Council Regulation (EEC) No 3922/91 (OJ L 212, 22.8.2018, p. 1).

GM1 NCO.GEN.105(d) Pilot-in-command responsibilities and authority

ED Decision 2014/016/R

REPORTING OF HAZARDOUS FLIGHT CONDITIONS

(a) These reports should include any detail which may be pertinent to the safety of other aircraft.

(b) Such reports should be made whenever any of the following conditions are encountered or observed:

(1) severe turbulence;

(2) severe icing;

(3) severe mountain wave;

(4) thunderstorms, with or without hail, that are obscured, embedded, widespread or in squall lines;

(5) heavy dust storm or heavy sandstorm;

(6) volcanic ash cloud; and

(7) unusual and/or increasing volcanic activity or a volcanic eruption.

(c) When other meteorological conditions not listed above, e.g. wind shear, are encountered that, in the opinion of the pilot-in-command, may affect the safety or the efficiency of other aircraft operations, the pilot-in-command should advise the appropriate air traffic services (ATS) unit as soon as practicable.

AMC1 NCO.GEN.105(e) Pilot-in-command responsibilities and authority

ED Decision 2014/016/R

VIOLATION REPORTING

If required by the State in which the incident occurs, the pilot-in-command should submit a report on any such violation to the appropriate authority of such State; in that event, the pilot-in-command should also submit a copy of it to the competent authority. Such reports should be submitted as soon as possible and normally within 10 days.

NCO.GEN.110 Compliance with laws, regulations and procedure

Regulation (EU) No 800/2013

(a) The pilot-in-command shall comply with the laws, regulations and procedures of those States where operations are conducted.

(b) The pilot-in-command shall be familiar with the laws, regulations and procedures, pertinent to the performance of his/her duties, prescribed for the areas to be traversed, the aerodromes or operating sites to be used and the related air navigation facilities as referred to in 1.a of Annex IV to Regulation (EC) No 216/2008.

NCO.GEN.115 Taxiing of aeroplanes

Regulation (EU) No 800/2013

An aeroplane shall only be taxied on the movement area of an aerodrome if the person at the controls:

(a) is an appropriately qualified pilot; or

(b) has been designated by the operator and:

(1) is trained to taxi the aeroplane;

(2) is trained to use the radio telephone, if radio communications are required;

(3) has received instruction in respect of aerodrome layout, routes, signs, marking, lights, air traffic control (ATC) signals and instructions, phraseology and procedures; and

(4) is able to conform to the operational standards required for safe aeroplane movement at the aerodrome.

GM1 NCO.GEN.115 Taxiing of aeroplanes

ED Decision 2015/004/R

SAFETY-CRITICAL ACTIVITY

(a) Taxiing should be treated as a safety-critical activity due to the risks related to the movement of the aeroplane and the potential for a catastrophic event on the ground.

(b) Taxiing is a high-workload phase of flight that requires the full attention of the pilot-in-command.

GM1 NCO.GEN.115(b)(4) Taxiing of aeroplanes

ED Decision 2014/016/R

SKILLS AND KNOWLEDGE

The person designated by the operator to taxi an aeroplane should possess the following skills and knowledge:

(a) positioning of the aeroplane to ensure safety when starting engine;

(b) getting ATIS reports and taxi clearance, where applicable;

(c) interpretation of airfield markings/lights/signals/indicators;

(d) interpretation of marshalling signals, where applicable;

(e) identification of suitable parking area;

(f) maintaining lookout and right-of-way rules and complying with ATC or marshalling instructions when applicable;

(g) avoidance of adverse effect of propeller slipstream or jet wash on other aeroplanes, aerodrome facilities and personnel;

(h) inspection of taxi path when surface conditions are obscured;

(i) communication with others when controlling an aeroplane on the ground;

(j) interpretation of operational instructions;

(k) reporting of any problem that may occur while taxiing an aeroplane; and

(l) adapting the taxi speed in accordance with prevailing aerodrome, traffic, surface and weather conditions.

NCO.GEN.120 Rotor engagement – helicopters

Regulation (EU) No 800/2013

A helicopter rotor shall only be turned under power for the purpose of flight with a qualified pilot at the controls.

GM1 NCO.GEN.120 Rotor engagement

ED Decision 2014/016/R

INTENT OF THE RULE

(a) The following two situations where it is allowed to turn the rotor under power should be distinguished:

(1) for the purpose of flight, this is described in the implementing rule;

(2) for maintenance purposes.

(b) Rotor engagement for the purpose of flight: it should be noted that the pilot should not leave the control when the rotors are turning. For example, the pilot is not allowed to get out of the aircraft in order to welcome passengers and adjust their seat belts with the rotors turning.

(c) Rotor engagement for the purpose of maintenance: the implementing rule, however, should not prevent ground runs being conducted by qualified personnel other than pilots for maintenance purposes.

The following conditions should be applied:

(1) The operator should ensure that the qualification of personnel, other than pilots, who are authorised to conduct maintenance runs is described in the appropriate manual.

(2) Ground runs should not include taxiing the helicopter.

(3) There should be no passengers on board.

(4) Maintenance runs should not include collective increase or auto pilot engagement (risk of ground resonance).

NCO.GEN.125 Portable electronic devices

Regulation (EU) 2018/1975

The pilot-in-command shall not permit any person to use a portable electronic device (PED) on board an aircraft, including an electronic flight bag (EFB), that could adversely affect the performance of the aircraft systems and equipment or the ability of the flight crew member to operate the aircraft.

AMC1 NCO.GEN.125 Portable electronic devices (PEDs)

ED Decision 2019/008/R

ELECTRONIC FLIGHT BAGS (EFBS) — HARDWARE

(a) EFB viewable stowage

When a viewable stowage device is used, the pilot-in-command should ensure that, if the EFB moves or is separated from its stowage, or if the viewable stowage is unsecured from the

aircraft (as a result of turbulence, manoeuvring, or other action), it will not jam flight controls, damage flight deck equipment, or injure any person on board.

The viewable stowage device should not be positioned in such a way that it obstructs visual or physical access to aircraft controls and/or displays, flight crew ingress or egress, or external vision. The design of the viewable stowage device should allow the user easy access to any item of the EFB system, and notably to the EFB controls and a clear view of the EFB display while in use.

(b) Cables

If cables are used to connect an EFB to an aircraft system, power source, or any other equipment:

(1) the cables should not hang loosely in a way that compromises task performance and safety; flight crew should be able to easily secure the cables out of the way during operations (e.g. by using cable tether straps); and

(2) the cables should be of sufficient length so that they do not to obstruct the use of any movable device on the flight deck.

AMC2 NCO.GEN.125 Portable electronic devices (PEDs)

ED Decision 2019/008/R

ELECTRONIC FLIGHT BAGS (EFBs) — FUNCTIONS

(a) Familiarisation

The pilot-in-command should familiarise himself or herself with the use of the EFB hardware and its applications on the ground before using them in flight for the first time.

A user guide should be available for the pilot-in-command.

(b) Check before flight

Before each flight, the pilot-in-command should perform the following checks to ensure the continued safe operation of the EFB during the flight:

(1) general check of the EFB operation by switching it ON and checking that the applications they intend to use in flight are adequately operative;

(2) check of the remaining available battery power, if applicable, to ensure the availability of the EFB during the planned flight;

(3) check of the version effectivity of the EFB databases, if applicable (e.g. for charts, performance calculation and weight and balance applications); and

(4) check that an appropriate backup is available when a chart application or an application displaying aircraft checklists is used.

(c) Chart applications

The navigation charts that are depicted should contain the necessary information in an appropriate format, to perform the operation safely. Consideration should be given to the size of the display to ensure legibility.

(d) Performance calculation and weight and balance functions or applications

Prior to the first use of a performance calculation or weight and balance function or application, and following any update of the database supporting the function or the application, a check

should be performed on the ground to verify that the output of the application corresponds with the data derived from the AFM (or other appropriate sources);

(e) Airport moving map display (AMMD) application

An AMMD application should not be used as a primary means of navigation for taxiing, but as a confirmation of outside visual references.

(f) Other functions

If advanced functions on non-certified devices that display information related to the aircraft position in flight, navigation, surroundings in terms of e.g. terrain or traffic, or attitude are used, the pilot in command should be aware of the potential misleading or erroneous information displayed and should only use these functions as an advisory or supplementary means.

GM1 NCO.GEN.125 Portable electronic devices

ED Decision 2014/031/R

DEFINITIONS

(a) Definition and categories of PEDs

PEDs are any kind of electronic device, typically but not limited to consumer electronics, brought on board the aircraft by crew members, passengers, or as part of the cargo and that are not included in the approved aircraft configuration. All equipment that is able to consume electrical energy falls under this definition. The electrical energy can be provided from internal sources as batteries (chargeable or non-rechargeable) or the devices may also be connected to specific aircraft power sources.

PEDs include the following two categories:

(1) Non-intentional transmitters can non-intentionally radiate RF transmissions, sometimes referred to as spurious emissions. This category includes, but is not limited to, calculators, cameras, radio receivers, audio and video players, electronic games and toys; when these devices are not equipped with a transmitting function.

(2) Intentional transmitters radiate RF transmissions on specific frequencies as part of their intended function. In addition, they may radiate non-intentional transmissions like any PED. The term ‘transmitting PED’ (T-PED) is used to identify the transmitting capability of the PED. Intentional transmitters are transmitting devices such as RF-based remote control equipment, which may include some toys, two-way radios (sometimes referred to as private mobile radio), mobile phones of any type, satellite phones, computers with mobile phone data connection, wireless local area network (WLAN) or Bluetooth capability. After deactivation of the transmitting capability, e.g. by activating the so-called ‘flight mode’ or ‘flight safety mode’, the T-PED remains a PED having non-intentional emissions.

(b) Definition of the switched-off status

Many PEDs are not completely disconnected from the internal power source when switched off. The switching function may leave some remaining functionality e.g. data storage, timer, clock, etc. These devices can be considered switched off when in the deactivated status. The same applies for devices having no transmitting capability and are operated by coin cells without further deactivation capability, e.g. wrist watches.

GM2 NCO.GEN.125 Portable electronic devices

ED Decision 2014/031/R

GENERAL

(a) PEDs can pose a risk of interference with electronically operated aircraft systems. Those systems could range from the electronic engine control, instruments, navigation or communication equipment, autopilots to any other type of avionic equipment on the aircraft. The interference can result in on-board systems malfunctioning or providing misleading information and communication disturbance. These can also lead to an increased workload for the flight crew.

(b) Interference may be caused by transmitters being part of the PED's functionality or by unintentional transmissions from the PED. Due to the likely proximity of the PED to any electronically operated aircraft system and the generally limited shielding found in small aircraft, the risk of interference is to be considered higher than that for larger aircraft with metal airframes.

(c) During certification of the aircraft, when qualifying the aircraft functions consideration may only have been made of short-term exposure to a high radiating field, with an acceptable mitigating measure being a return to normal function after removal of the threat. This certification assumption may not be true when operating the transmitting PED on board the aircraft.

(d) It has been found that compliance with the electromagnetic compatibility (EMC) Directive 2004/108/EC and related European standards, as indicated by the CE marking, is not sufficient to exclude the existence of interference. A well-known interference is the demodulation of the transmitted signal from GSM (global system for mobile communications) mobile phones leading to audio disturbances in other systems. Similar interferences are difficult to predict during the PED design and protecting the aircraft's electronic systems against the full range of potential interferences is practically impossible. Therefore, not operating PEDs on-board aircraft is the safest option, especially as effects may not be identified immediately but under the most inconvenient circumstances.

(e) Guidance to follow in case of fire caused by PEDs is provided by the International Civil Aviation Organisation, 'Emergency response guidance for aircraft incidents involving dangerous goods', ICAO Doc 9481-AN/928.

NCO.GEN.130 Information on emergency and survival equipment carried

Regulation (EU) No 800/2013

Except for aircraft taking-off and landing at the same aerodrome/operating site, the operator shall, at all times, have available for immediate communication to rescue coordination centres (RCCs) lists containing information on the emergency and survival equipment carried on board.

AMC1 NCO.GEN.130 Information on emergency and survival equipment carried

ED Decision 2014/016/R

CONTENT OF INFORMATION

The information, compiled in a list, should include, as applicable:

(a) the number, colour and type of life rafts and pyrotechnics,

(b) details of emergency medical supplies and water supplies; and

(c) the type and frequencies of the emergency portable radio equipment.

NCO.GEN.135 Documents, manuals and information to be carried

Regulation (EU) 2018/1975

(a) The following documents, manuals and information shall be carried on each flight as originals or copies unless otherwise specified:

(1) the AFM, or equivalent document(s);

(2) the original certificate of registration;

(3) the original certificate of airworthiness (CofA);

(4) the noise certificate, if applicable;

(5) the list of specific approvals, if applicable;

(6) the aircraft radio licence, if applicable;

(7) the third party liability insurance certificate(s);

(8) the journey log, or equivalent, for the aircraft;

(9) details of the filed ATS flight plan, if applicable;

(10) current and suitable aeronautical charts for the route area of the proposed flight and all routes along which it is reasonable to expect that the flight may be diverted;

(11) procedures and visual signals information for use by intercepting and intercepted aircraft;

(12) the MEL or CDL, if applicable; and

(13) any other documentation that may be pertinent to the flight or is required by the States concerned with the flight.

(b) Notwithstanding (a), on flights:

(1) intending to take off and land at the same aerodrome/operating site; or

(2) remaining within a distance or area determined by the competent authority,

the documents and information in (a)(2) to (a)(8) may be retained at the aerodrome or operating site.

(c) The pilot-in-command shall make available within a reasonable time of being requested to do so by the competent authority, the documentation required to be carried on board.

AMC1 NCO.GEN.135(a)(3) Documents, manuals and information to be carried

ED Decision 2014/016/R

CERTIFICATE OF AIRWORTHINESS

The certificate of airworthiness should be a normal certificate of airworthiness, a restricted certificate of airworthiness or a permit to fly issued in accordance with the applicable airworthiness requirements.

AMC1 NCO.GEN.135(a)(10) Documents, manuals and information to be carried

ED Decision 2014/016/R

CURRENT AND SUITABLE AERONAUTICAL CHARTS

(a) The aeronautical charts carried should contain data appropriate to the applicable air traffic regulations, rules of the air, flight altitudes, area/route and nature of the operation. Due consideration should be given to carriage of textual and graphic representations of:

(1) aeronautical data, including, as appropriate for the nature of the operation:

(i) airspace structure;

(ii) significant points, navigation aids (navaids) and air traffic services (ATS) routes;

(iii) navigation and communication frequencies;

(iv) prohibited, restricted and danger areas; and

(v) sites of other relevant activities that may hazard the flight; and

(2) topographical data, including terrain and obstacle data.

(b) A combination of different charts and textual data may be used to provide adequate and current data.

(c) The aeronautical data should be appropriate for the current aeronautical information regulation and control (AIRAC) cycle.

(d) The topographical data should be reasonably recent, having regard to the nature of the planned operation.

GM1 NCO.GEN.135 Documents, manuals and information to be carried

ED Decision 2014/016/R

GENERAL

(a) In case of loss or theft of documents specified in NCO.GEN.135, the operation may continue until the flight reaches the base or a place where a replacement document can be provided.

(b) The documents, manuals and information may be available in a form other than on printed paper. An electronic storage medium is acceptable if accessibility, usability and reliability can be assured.

GM1 NCO.GEN.135(a)(1) Documents, manuals and information to be carried

ED Decision 2018/003/R

AFM OR EQUIVALENT DOCUMENT

'Aircraft flight manual (AFM), or equivalent document' means the flight manual for the aircraft or other documents containing information required for the operation of the aircraft within the terms of its certificate of airworthiness.

GM1 NCO.GEN.135(a)(8) Documents, manuals and information to be carried

ED Decision 2014/016/R

JOURNEY LOG OR EQUIVALENT

'Journey log or equivalent' means that the required information may be recorded in documentation other than a log book, such as the operational flight plan or the aircraft technical log.

GM1 NCO.GEN.135(a)(11) Documents, manuals and information to be carried

ED Decision 2014/016/R

PROCEDURES AND VISUAL SIGNALS FOR USE BY INTERCEPTING AND INTERCEPTED AIRCRAFT

The procedures and the visual signals information for use by intercepting and intercepted aircraft are those contained in the International Civil Aviation Organisation's (ICAO) Annex 2.

GM1 NCO.GEN.135(a)(13) Documents, manuals and information to be carried

ED Decision 2014/016/R

DOCUMENTS THAT MAY BE PERTINENT TO THE FLIGHT

Any other documents that may be pertinent to the flight or required by the States concerned with the flight may include, for example, forms to comply with reporting requirements.

STATES CONCERNED WITH THE FLIGHT

The States concerned are those of origin, transit, overflight and destination of the flight.

NCO.GEN.140 Transport of dangerous goods

Regulation (EU) 2016/1119

(a) The transport of dangerous goods by air shall be conducted in accordance with Annex 18 to the Chicago Convention as last amended and amplified by the Technical Instructions for the Safe Transport of Dangerous Goods by Air (ICAO Doc 9284-AN/905), including its supplements and any other addenda or corrigenda.

(b) Dangerous goods shall only be transported by the operator approved in accordance with Annex V (Part-SPA), Subpart G, to Regulation (EU) No 965/2012 except when:

(1) they are not subject to the Technical Instructions in accordance with Part 1 of those Instructions; or

(2) they are carried by passengers or the pilot-in-command, or are in baggage, in accordance with Part 8 of the Technical Instructions;

(3) they are carried by operators of ELA2 aircraft.

(c) The pilot-in-command shall take all reasonable measures to prevent dangerous goods from being carried on board inadvertently.

(d) The pilot-in-command shall, in accordance with the Technical Instructions, report without delay to the competent authority and the appropriate authority of the State of occurrence in the event of any dangerous goods accidents or incidents.

(e) The pilot-in-command shall ensure that passengers are provided with information about dangerous goods in accordance with the Technical Instructions.

(f) Reasonable quantities of articles and substances that would otherwise be classified as dangerous goods and that are used to facilitate flight safety, where carriage aboard the aircraft is advisable to ensure their timely availability for operational purposes, shall be considered authorised under paragraph 1;2.2.1(a) of the Technical Instructions. This is regardless of whether or not such articles and substances are required to be carried or intended to be used in connection with a particular flight.

The packing and loading on board of the above-mentioned articles and substances shall be performed, under the responsibility of the pilot in command, in such a way as to minimise the risks posed to crew members, passengers, cargo or the aircraft during aircraft operations.

GM1 NCO.GEN.140(a) Transport of dangerous goods

ED Decision 2014/016/R

GENERAL

(a) The requirement to transport dangerous goods by air in accordance with the Technical Instructions is irrespective of whether:

(1) the flight is wholly or partly within or wholly outside the territory of a State; or

(2) an approval to carry dangerous goods in accordance with Annex V (Part-SPA), Subpart G is held.

(b) The Technical Instructions provide that in certain circumstances dangerous goods, which are normally forbidden on an aircraft, may be carried. These circumstances include cases of extreme urgency or when other forms of transport are inappropriate or when full compliance with the prescribed requirements is contrary to the public interest. In these circumstances all the States concerned may grant exemptions from the provisions of the Technical Instructions provided that an overall level of safety that is at least equivalent to that provided by the Technical Instructions is achieved. Although exemptions are most likely to be granted for the carriage of dangerous goods that are not permitted in normal circumstances, they may also be granted in other circumstances, such as when the packaging to be used is not provided for by the appropriate packing method or the quantity in the packaging is greater than that permitted. The Technical Instructions also make provision for some dangerous goods to be carried when an approval has been granted only by the State of origin and the competent authority.

(c) When an exemption is required, the States concerned are those of origin, transit, overflight and destination of the consignment and that of the operator. For the State of overflight, if none of the criteria for granting an exemption are relevant, an exemption may be granted based solely on whether it is believed that an equivalent level of safety in air transport has been achieved.

(d) The Technical Instructions provide that exemptions and approvals are granted by the 'appropriate national authority', which is intended to be the authority responsible for the particular aspect against which the exemption or approval is being sought. The operator should ensure that all relevant conditions on an exemption or approval are met.

(e) The exemption or approval referred to in (b) to (d) is in addition to the approval required by Annex V (Part-SPA), Subpart G.

AMC1 NCO.GEN.140(d) Transport of dangerous goods

ED Decision 2014/016/R

DANGEROUS GOODS ACCIDENT AND INCIDENT REPORTING

(a) Any type of dangerous goods incident or accident, or the finding of:

(1) undeclared or misdeclared dangerous goods in cargo;

(2) forbidden dangerous goods in mail; or

(3) forbidden dangerous goods in passenger or crew baggage, or on the person of a passenger or crew member

should be reported. For this purpose, the Technical Instructions consider that reporting of undeclared and misdeclared dangerous goods found in cargo also applies to items of operators' stores that are classified as dangerous goods.

(b) The first report should be dispatched within 72 hours of the event. It may be sent by any means, including e-mail, telephone or fax. This report should include the details that are known at that time, under the headings identified in 3. If necessary, a subsequent report should be made as soon as possible giving all the details that were not known at the time the first report was sent. If a report has been made verbally, written confirmation should be sent as soon as possible.

(c) The first and any subsequent report should be as precise as possible and contain the following data, where relevant:

(1) date of the incident or accident or the finding of undeclared or misdeclared dangerous goods;

(2) location and date of flight;

(3) description of the goods;

(4) proper shipping name (including the technical name, if appropriate) and United Nations (UN)/identification (ID) number, when known;

(5) class or division and any subsidiary risk;

(6) type of packaging, and the packaging specification marking on it;

(7) quantity;

(8) name and address of the passenger, etc.;

(9) any other relevant details;

(10) suspected cause of the incident or accident;

(11) action taken;

(12) any other reporting action taken; and

(13) name, title, address and telephone number of the person making the report.

(d) Copies of relevant documents and any photographs taken should be attached to the report.

(e) A dangerous goods accident or incident may also constitute an aircraft accident, serious incident or incident. The criteria for reporting both types of occurrence should be met.

(f) The following dangerous goods reporting form should be used, but other forms, including electronic transfer of data, may be used provided that at least the minimum information of this AMC is supplied:

<table>
<tr><td colspan="3">DANGEROUS GOODS OCCURRENCE REPORT</td><td>DGOR No:</td></tr>
<tr><td>1. Operator:</td><td colspan="2">2. Date of Occurrence:</td><td>3. Local time of occurrence:</td></tr>
<tr><td colspan="4">4. Flight date:</td></tr>
<tr><td colspan="2">5. Departure aerodrome:</td><td colspan="2">6. Destination aerodrome:</td></tr>
<tr><td colspan="2">7. Aircraft type:</td><td colspan="2">8. Aircraft registration:</td></tr>
<tr><td colspan="2">9. Location of occurrence:</td><td colspan="2">10. Origin of the goods:</td></tr>
<tr><td colspan="4">11. Description of the occurrence, including details of injury, damage, etc.
(if necessary continue on the reverse of this form)</td></tr>
<tr><td colspan="3">12. Proper shipping name (including the technical name):</td><td>13. UN/ID No (when known):</td></tr>
<tr><td>14.Class/Division (when known):</td><td>15. Subsidiary risk(s):</td><td>16. Packing group:</td><td>17. Category (Class 7 only):</td></tr>
<tr><td>18. Type of packaging:</td><td>19. Packaging specification marking:</td><td>20. No of packages:</td><td>21. Quantity (or transport index, if applicable):</td></tr>
<tr><td colspan="4">22. Name and address of passenger, etc.:</td></tr>
<tr><td colspan="4">23. Other relevant information (including suspected cause, any action taken):</td></tr>
<tr><td colspan="2">24. Name and title of person making report:</td><td colspan="2">25. Telephone No:</td></tr>
<tr><td colspan="2">26. Company:</td><td colspan="2">27. Reporters ref:</td></tr>
<tr><td colspan="2" rowspan="2">28. Address:</td><td colspan="2">29. Signature:</td></tr>
<tr><td colspan="2">30. Date:</td></tr>
<tr><td colspan="4">Description of the occurrence (continuation)</td></tr>
</table>

Notes for completion of the form:

1. A dangerous goods accident is as defined in Annex I. For this purpose serious injury is as defined in Regulation (EU) No 996/2010 of the European Parliament and of the Council[1].
2. The initial report should be dispatched unless exceptional circumstances prevent this. This occurrence report form, duly completed, should be sent as soon as possible, even if all the information is not available.
3. Copies of all relevant documents and any photographs should be attached to this report.
4. Any further information, or any information not included in the initial report, should be sent as soon as possible to the authorities identified in NCO.GEN.140(d).
5. Providing it is safe to do so, all dangerous goods, packaging, documents, etc. relating to the occurrence should be retained until after the initial report has been sent to the authorities identified in NCO.GEN.140(d), and they have indicated whether or not these should continue to be retained.

AMC1 NCO.GEN.140(f) Transport of dangerous goods

ED Decision 2016/018/R

GENERAL

The quantities of DG carried for operational purposes should be reasonable considering the purposes for which they might be required before the aircraft is able to replenish its supplies, e.g. at its home base or, in the case of a long tour, at any aerodrome along the route where the aircraft is planned to land and where such supplies are available.

GM1 NCO.GEN.140(f) Transport of dangerous goods

ED Decision 2016/018/R

GENERAL

In addition to items authorised under paragraph 1;2.2.1(a) of the Technical Instructions, the articles and substances should be items such as, e.g. aircraft spare parts, components/substances needed for aircraft repair, oil (for aircraft engine/gearbox), aircraft fuel, de-icing fluid, aircraft battery, and air starter unit.

NCO.GEN.145 Immediate reaction to a safety problem

Regulation (EU) No 800/2013

The operator shall implement:

(a) any safety measures mandated by the competent authority in accordance with ARO.GEN.135(c); and

(b) any relevant mandatory safety information issued by the Agency, including airworthiness directives.

[1] OJ L 295, 12.11.2010, p. 35.

NCO.GEN.150 Journey log

Regulation (EU) No 800/2013

Particulars of the aircraft, its crew and each journey shall be retained for each flight, or series of flights, in the form of a journey log, or equivalent.

AMC1 NCO.GEN.150 Journey log

ED Decision 2014/016/R

GENERAL

(a) The aircraft journey log, or equivalent, should include the following items, where applicable:

(1) aircraft nationality and registration;

(2) date;

(3) name of crew member(s);

(4) duty assignments of crew members, if applicable;

(5) place of departure;

(6) place of arrival;

(7) time of departure;

(8) time of arrival;

(9) hours of flight;

(10) nature of flight;

(11) incidents and observations (if any); and

(12) signature of the pilot-in-command.

(b) The information or parts thereof may be recorded in a form other than on printed paper. Accessibility, usability and reliability should be assured.

NCO.GEN.155 Minimum equipment list

Regulation (EU) No 800/2013

(a) An MEL may be established taking into account the following:

(1) the document shall provide for the operation of the aircraft, under specified conditions, with particular instruments, items of equipment or functions inoperative at the commencement of the flight;

(2) the document shall be prepared for each individual aircraft, taking account of the operator's relevant operational and maintenance conditions; and

(3) the MEL shall be based on the relevant Master Minimum Equipment List (MMEL), as defined in the data established in accordance with Commission Regulation (EU) No 748/2012[1], and shall not be less restrictive than the MMEL.

(b) The MEL and any amendment thereto shall be notified to the competent authority.

[1] OJ L 224, 21.8.2012, p. 1.

AMC1 NCO.GEN.155 Minimum equipment list

ED Decision 2015/004/R

CONTENT AND APPROVAL OF THE MEL

(a) When an MEL is established, the operator should amend the MEL after any applicable change to the MMEL within the acceptable timescales. The following are applicable changes to the MMEL that require amendment of the MEL:

(1) a reduction of the rectification interval;

(2) change of an item, only when the change is applicable to the aircraft or type of operations and is more restrictive;

(3) reduced timescales for the implementation of safety-related amendments may be required by the Agency and/or the competent authority.

(b) An acceptable timescale for notifying the amended MEL to the competent authority is 90 days from the effective date specified in the approved change to the MMEL.

(c) In addition to the list of items and related dispatch conditions, the MEL should contain:

(1) a preamble, including guidance and definitions for flight crew members and maintenance personnel using the MEL. The MEL preamble should:

(i) reflect the content of the MMEL preamble as applicable to the MEL scope and extent;

(ii) contain terms and definitions used in the MEL;

(iii) contain any other relevant specific information for the MEL scope and use that is not originally provided in the MMEL;

(iv) provide guidance on how to identify the origin of a failure or malfunction to the extent necessary for appropriate application of the MEL;

(v) provide guidance on the management of multiple unserviceabilities, based on the guidance given in the MMEL; and

(vi) provide guidance on placarding of inoperative items to inform crew members of equipment condition as appropriate. In particular, when such items are accessible to the crew during flight, the control(s) and indicator(s) related to inoperative unit(s) should be clearly placarded.

(2) the revision status of the MMEL upon which the MEL is based and the revision status of the MEL;

(3) the scope, extent and purpose of the MEL;

(4) operational and maintenance procedures as part of the MEL or by means of reference to another appropriate document, based on the operational and maintenance procedures referenced in the MMEL; and

(5) the dispatch conditions associated with flights conducted in accordance with special approvals held by the operator in accordance with Part-SPA.

(d) The operator should:

(1) establish rectification intervals for each inoperative instrument, item of equipment or function listed in the MEL. The rectification interval in the MEL should not be less restrictive than the corresponding rectification interval in the MMEL. The definitions and

categories of rectification intervals are provided in CS-MMEL as well as in CS-GEN-MMEL; and

(2) establish an effective rectification programme.

(e) The operator should establish the operational and maintenance procedures referenced in the MEL, taking into account the operational and maintenance procedures referenced in the MMEL. These procedures should be part of the operator's manuals or the MEL.

(f) The operator should amend the operational and maintenance procedures referenced in the MEL after any applicable change to the operational and maintenance procedures referenced in the MMEL.

(g) Unless otherwise specified in the MEL, the operator should complete:

(1) the operational procedures referenced in the MEL when planning for and/or operating with the listed item inoperative; and

(2) the maintenance procedures referenced in the MEL prior to operating with the listed item inoperative.

AMC2 NCO.GEN.155 Minimum equipment list

ED Decision 2014/016/R

FORMAT OF THE MEL

The MEL format, the presentation of MEL items and dispatch conditions should:

(a) reflect those of the MMEL;

(b) follow the ATA 100/2200 Specification numbering system for MEL items; and

(c) when different from (a) and (b), be clear and unambiguous.

AMC3 NCO.GEN.155 Minimum equipment list

ED Decision 2014/016/R

EXTENT OF THE MEL

The operator should include guidance in the MEL on how to deal with any failures that occur between the commencement of the flight and the start of the take-off. If a failure occurs between the commencement of the flight and the start of the take-off, any decision to continue the flight should be subject to pilot judgement and good airmanship. The pilot-in-command may refer to the MEL before any decision to continue the flight is taken.

AMC4 NCO.GEN.155 Minimum equipment list

ED Decision 2014/016/R

OPERATIONAL AND MAINTENANCE PROCEDURES

(a) The operational and maintenance procedures referenced in the MEL should be based on the operational and maintenance procedures referenced in the MMEL. Modified procedures may, however, be developed by the operator when they provide the same level of safety as required by the MMEL. Modified maintenance procedures should be developed in accordance with the applicable airworthiness requirements.

(b) Providing appropriate operational and maintenance procedures referenced in the MEL, regardless of who developed them, is the responsibility of the operator.

(c) Any item in the MEL requiring an operational or maintenance procedure to ensure an acceptable level of safety should be so identified in the 'remarks' or 'exceptions' column/part/section of the MEL. This will normally be '(O)' for an operational procedure, or '(M)' for a maintenance procedure. '(O)(M)' means both operational and maintenance procedures are required.

(d) The satisfactory accomplishment of all procedures, regardless of who performs them, is the responsibility of the operator.

AMC5 NCO.GEN.155 Minimum equipment list

ED Decision 2014/016/R

OPERATIONAL AND MAINTENANCE PROCEDURES — APPLICABLE CHANGES

(a) Changes to the operational and maintenance procedures referenced in the MMEL are considered applicable and require the amendment of the maintenance and operating procedures referenced in the MEL when:

(1) the modified procedure is applicable to the operator's MEL; and

(2) the purpose of this change is to improve compliance with the intent of the associated MMEL dispatch condition.

(b) An acceptable timescale for the amendments of maintenance and operating procedures, as defined in (a), should be 90 days from the date when the amended procedures referenced in the MMEL are made available. Reduced timescales for the implementation of safety-related amendments may be required if the competent authority consider it necessary.

GM1 NCO.GEN.155 Minimum equipment list

ED Decision 2014/016/R

GENERAL

(a) The Minimum Equipment List (MEL) is a document that lists the equipment that may be temporarily inoperative, subject to certain conditions, at the commencement of flight. This document is prepared by the operator for their own particular aircraft, taking account of their aircraft configuration and all those individual variables that cannot be addressed at MMEL level, such as operating environment, route structure, geographic location, aerodromes where spare parts and maintenance capabilities are available, etc.

(b) The MMEL, as defined in the mandatory part of the operational suitability data established in accordance with Regulation (EU) No 748/2012, is developed in compliance with CS-MMEL or CS-GEN-MMEL. These Certification Specifications contain, among other, guidance intended to standardise the level of relief granted in MMELs, in particular for items that are subject to operational requirements. If an MMEL established as part of the operational suitability data is not available and items subject to operational requirements are listed in the available MMEL without specific relief or dispatch conditions but only with a reference to the operational requirements, the operator may refer to CS-MMEL or CS-GEN-MMEL guidance material, as applicable, to develop the relevant MEL content for such items.

GM2 NCO.GEN.155 Minimum equipment list

ED Decision 2014/016/R

SCOPE OF THE MEL

(a) Examples of special approvals in accordance with Part-SPA may be:

(1) RVSM

(2) LVO

(b) When an aircraft has installed equipment which is not required for the operations conducted, the operator may wish to delay rectification of such items for an indefinite period. Such cases are considered to be out of the scope of the MEL, therefore modification of the aircraft is appropriate and deactivation, inhibition or removal of the item should be accomplished by an appropriate approved modification procedure.

GM3 NCO.GEN.155 Minimum equipment list

ED Decision 2014/016/R

PURPOSE OF THE MEL

The MEL is an alleviating document having the purpose to identify the minimum equipment and conditions to operate safely an aircraft having inoperative equipment. Its purpose is not, however, to encourage the operation of aircraft with inoperative equipment. It is undesirable for aircraft to be dispatched with inoperative equipment and such operations are permitted only as a result of careful analysis of each item to ensure that the acceptable level of safety, as intended in the applicable airworthiness and operational requirements, is maintained. The continued operation of an aircraft in this condition should be minimised.

GM4 NCO.GEN.155 Minimum equipment list

ED Decision 2014/016/R

OPERATIONAL AND MAINTENANCE PROCEDURES

(a) Operational and maintenance procedures are an integral part of the compensating conditions needed to maintain an acceptable level of safety, enabling the competent authority to approve the MEL.

(b) Normally, operational procedures are accomplished by the flight crew; however, other personnel may be qualified and authorised to perform certain functions.

(c) Normally, maintenance procedures are accomplished by the maintenance personnel; however, other personnel may be qualified and authorised to perform certain functions in accordance with the applicable airworthiness requirements.

(d) Operational and maintenance procedures, regardless of the document where they are contained, should be readily available for use when needed for the application of the MEL.

(e) Unless specifically permitted by a maintenance procedure, an inoperative item may not be removed from the aircraft.

SUBPART B: OPERATIONAL PROCEDURES

NCO.OP.100 Use of aerodromes and operating sites

Regulation (EU) No 800/2013

The pilot-in-command shall only use aerodromes and operating sites that are adequate for the type of aircraft and operation concerned.

NCO.OP.101 Altimeter check and settings

Regulation (EU) 2021/2237

(a) The pilot-in-command shall check the proper operation of the altimeter before each departure.

(b) The pilot-in-command shall use appropriate altimeter settings for all phases of flight, taking into account any procedure prescribed by the State of the aerodrome or the State of the airspace.

AMC1 NCO.OP.101(a) Altimeter check and settings

ED Decision 2022/012/R

PRE-FLIGHT ALTIMETER CHECK

A serviceable altimeter indicates the elevation of the point selected, plus the height of the altimeter above this point, within a tolerance of ± 60 ft.

If the altimeter does not indicate the reference elevation or height exactly but is within the specified tolerances, no adjustment of this indication should be made at any stage of a flight. Also, any error which is within tolerance on the ground should be ignored by the pilot during flight.

If no altimeter setting is available at the aerodrome or operating site of departure, the altimeter should be set using the elevation of the aerodrome or operating site, and the altimeter setting should be verified on first contact with an ATS unit.

NCO.OP.105

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NCO.OP.110 Aerodrome operating minima — aeroplanes and helicopters

Regulation (EU) 2021/2237

(a) For instrument flight rules (IFR) flights, the pilot-in-command shall establish aerodrome operating minima for each departure, destination or alternate aerodrome that is planned to be used in order to ensure separation of the aircraft from terrain and obstacles and to mitigate the risk of loss of visual references during the visual flight segment of instrument approach operations.

(b) The aerodrome operating minima shall take the following elements into account, if relevant:

(1) the type, performance, and handling characteristics of the aircraft;

(2) the equipment available on the aircraft for the purpose of navigation, acquisition of visual references, and/or control of the flight path during take-off, approach, landing, and missed approach;

(3) any conditions or limitations stated in the aircraft flight manual (AFM);

(4) the dimensions and characteristics of the runways/final approach and take-off areas (FATOs) that may be selected for use;

(5) the adequacy and performance of the available visual and non-visual aids and infrastructure;

(6) the obstacle clearance altitude/height (OCA/H) for the instrument approach procedures (IAPs), if established;

(7) the obstacles in the climb-out areas and clearance margins;

(8) the competence and relevant operational experience of the pilot-in-command;

(9) the IAP, if established;

(10) the aerodrome characteristics and the type of air navigation services (ANS) available, if any;

(11) any minima that may be promulgated by the State of the aerodrome;

(12) the conditions prescribed in any specific approvals for low-visibility operations (LVOs) or operations with operational credits.

AMC1 NCO.OP.110 Aerodrome operating minima — aeroplanes and helicopters

ED Decision 2022/012/R

TAKE-OFF OPERATIONS

(a) General

Take-off minima should be expressed as visibility (VIS) or runway visual range (RVR) limits, taking into account all relevant factors for each runway/final approach and take-off area (FATO)/operating site planned to be used and aircraft characteristics and equipment. Where there is a specific need to see and avoid obstacles on departure and/or for a forced landing, additional conditions, e.g. ceiling, it should be specified.

(b) Visual reference

(1) The take-off minima should be selected to ensure sufficient guidance to control the aircraft in the event of both a rejected take-off in adverse circumstances and an engine failure after rotation.

(2) For night operations, sufficient lighting should be in operation to illuminate the runway/final approach and take-off area (FATO) and any relevant obstacles.

(3) For point-in-space (PinS) departures to an initial departure fix (IDF), the take-off minima should be selected to ensure sufficient guidance to see and avoid obstacles and return to the heliport if the flight cannot be continued visually to the IDF. The minimum VIS should be 800 m and the minimum ceiling should be 250 ft.

(4) For helicopters outside of a runway environment, the minimum VIS should be 800 m, and for offshore helideck operations, the minimum VIS should be 500 m.

AMC2 NCO.OP.110 Aerodrome operating minima — aeroplanes and helicopters

ED Decision 2022/012/R

RVR OR VIS FOR INSTRUMENT APPROACH OPERATIONS — DETERMINATION OF DH/MDH FOR INSTRUMENT APPROACH OPERATIONS — AEROPLANES

(a) The RVR (or for non-instrument runways, VIS) for straight-in instrument approach operations should not be less than the greatest of the following:

(1) the minimum RVR (or for non-instrument runways, VIS) for the type of runway used according to Table 1;

(2) the minimum RVR determined according to the MDH or DH and class of lighting facility according to Table 2;

(3) the minimum RVR according to the visual and non-visual aids and on-board equipment used according to Table 3.

(b) For Category A and B aeroplanes, if the RVR determined in accordance with (a) is greater than 1 500 m, then 1 500 m should be used.

(d) The visual aids, if available, may comprise standard runway day markings, runway edge lights, threshold lights, runway end lights and approach lights as defined in Table 6.

(e) For night operations or for any operation where credit for visual aids is required, the lights should be on and serviceable except as provided for in GM5 NCO.OP.110.

Table 1

Type of runway versus minimum RVR or VIS — aeroplanes

Type of runway	Minimum RVR or VIS (m)
Precision approach (PA) runway, category I	550
Non-precision approach (NPA) runway	750
Non-instrument runway	Visibility according to Table 1 in NCO.OP.112 (Circling minima)

Table 2

RVR versus DH/MDH

DH or MDH			Class of lighting facility			
			FALS	IALS	BALS	NALS
ft			RVR (m)			
200	-	210	550	750	1 000	1 200
211	-	240	550	800	1 000	1 200
241	-	250	550	800	1 000	1 300
251	-	260	600	800	1 100	1 300
261	-	280	600	900	1 100	1 300
281	-	300	650	900	1 200	1 400
301	-	320	700	1 000	1 200	1 400
321	-	340	800	1 100	1 300	1 500
341	-	360	900	1 200	1 400	1 600
361	-	380	1 000	1 300	1 500	1 700
381	-	400	1 100	1 400	1 600	1 800

401	-	420	1 200	1 500	1 700	1 900
421	-	440	1 300	1 600	1 800	2 000
441	-	460	1 400	1 700	1 900	2 100
461	-	480	1 500	1 800	2 000	2 200
481		500	1 500	1 800	2 100	2 300
501	-	520	1 600	1 900	2 100	2 400
521	-	540	1 700	2 000	2 200	2 400
541	-	560	1 800	2 100	2 300	2 400
561	-	580	1 900	2 200	2 400	2 400
581	-	600	2 000	2 300	2 400	2 400
601	-	620	2 100	2 400	2 400	2 400
621	-	640	2 200	2 400	2 400	2 400
641		660	2 300	2 400	2 400	2 400
661	and above		2 400	2 400	2 400	2 400

Table 3

Visual and non-visual aids and/or on-board equipment versus minimum RVR — aeroplanes

Type of approach	Facilities	Lowest RVR (m)
PA and APV procedure	RTZL and RCLL	[no limitation]
	without RTZL and RCLL but using HUDLS or equivalent system; coupled autopilot or flight director to DH	[no limitation]
	No RTZL and RCLL, not using HUDLS or equivalent system or autopilot to DH.	750
NPA procedure	Final approach track offset <15 ° for category A and B aeroplanes or <5 ° Category C and D aeroplanes	750
	Final approach track offset ≥ 15° for category A or B aeroplanes	1 000
	Final approach track offset ≥ 5° for category C or D aeroplanes	1 200

DETERMINATION OF RVR FOR INSTRUMENT APPROACH OPERATIONS — HELICOPTERS

(a) For IFR operations, the RVR should not be less than the greatest of the following:

(1) the minimum RVR for the type of runway/FATO used according to Table 4; or

(2) the minimum RVR determined according to the MDH or DH and class of lighting facility according to Table 5;

(3) for PinS operations with instructions to 'proceed visually', the distance between the MAPt of the PinS and the FATO/approach light system.

(b) For PinS operations with instructions to 'proceed VFR', the VIS should be compatible with visual flight rules.

(c) The visual aids, if available, may comprise standard runway day markings, runway edge lights, threshold lights, runway, end lights and approach lights as defined in Table 6 of AMC3 NCO.OP.110.

(d) For night operations or for any operation where credit for visual aids is required, the lights should be on and serviceable.

Table 4

Type of runway/FATO versus minimum RVR — helicopters

Type of runway/FATO	Minimum RVR or VIS (m)
PA runway, category I NPA runway Non-instrument runway	RVR 550
Instrument FATO FATO	RVR 550 RVR or VIS 800

Table 5

DH/MDH versus minimum RVR — helicopters

DH/MDH (ft)	Facilities versus RVR (m)*			
	FALS	IALS	BALS	NALS
200	550	600	700	1 000
201–249	550	650	750	1 000
250–299	600*	700*	800	1 000
300 and above	750*	800	900	1 000

* Minima on 2D approach operations should be no lower than 800 m.

APPROACH LIGHTING SYSTEMS — AEROPLANES AND HELICOPTERS

Table 6

Approach lighting systems

Class of lighting facility	Length, configuration and intensity of approach lights
FALS	CAT I lighting system (HIALS ≥720 m) distance coded centre line, barrette centre line
IALS	Simple approach lighting system (HIALS 420–719 m) single source, barrette
BALS	Any other approach lighting system (HIALS, MALS or ALS 210–419 m)
NALS	Any other approach lighting system (HIALS, MALS or ALS <210 m) or no approach lights

AMC3 NCO.OP.110 Aerodrome operating minima — aeroplanes and helicopters

ED Decision 2022/012/R

VISUAL APPROACH

For a visual approach operation, the RVR should not be less than 800 m.

GM1 NCO.OP.110 Aerodrome operating minima — aeroplanes and helicopters

ED Decision 2022/012/R

AIRCRAFT CATEGORIES

(a) Aircraft categories should be based on the indicated airspeed at threshold (V_{AT}), which is equal to the stalling speed (V_{SO}) multiplied by 1.3 or where published 1-g (gravity) stall speed (V_{S1g}) multiplied by 1.23 in the landing configuration at the maximum certified landing mass. If both V_{SO} and V_{S1g} are available, the higher resulting V_{AT} should be used.

(b) The aircraft categories specified in the Table 6 should be used.

Table 7: Aircraft categories corresponding to VAT values

Aircraft category	V_{AT}
A	Less than 91 kt
B	from 91 to 120 kt
C	from 121 to 140 kt
D	from 141 to 165 kt
E	from 166 to 210 kt

(c) Helicopters are also eligible for Category H where applicable.

GM2 NCO.OP.110 Aerodrome operating minima — aeroplanes and helicopters

ED Decision 2022/012/R

FLIGHTS WITH VFR AND IFR SEGMENTS

Where a flight contains VFR and IFR segments, aerodrome operating minima need be established only as far as relevant to the IFR segments. Attention is drawn to NCO.OP.160 (a) and (c), according to which, the pilot-in-command shall be satisfied that the VFR segments will be conducted in conditions at or above the applicable VFR operating minima. For example, for a VFR departure changing to IFR at a transition point en-route and an IFR arrival at destination, the pilot-in-command should be satisfied that VMC will exist up to the transition point, and aerodrome operating minima should be established for the destination and any alternate destinations required.

GM3 NCO.OP.110 Aerodrome operating minima — aeroplanes and helicopters

ED Decision 2022/012/R

MEANS TO DETERMINE THE REQUIRED RVR BASED ON DH AND LIGHTING FACILITIES

(a) The values in Table 2 are derived from the formula below:

RVR (m) = [(DH/MDH (ft) x 0.3048)/tanα] — length of approach lights (m),

where α is the calculation angle, being a default value of 3.00° increasing in steps of 0.10° for each line in Table 2 up to 3.77° and then remaining constant. An upper RVR limit of 2 400 m has been applied to the table.

(b) The lighting system classes in Table 2 have the meaning specified in Table 6.

GM4 NCO.OP.110 Aerodrome operating minima — aeroplanes and helicopters

ED Decision 2022/012/R

USE OF THIRD-PARTY INFORMATION

If a pilot-in-command uses information provided by a third party for aerodrome operating minima, the pilot-in-command verifies that the method for calculating minima is in accordance with this Regulation.

GM5 NCO.OP.110 Aerodrome operating minima — aeroplanes and helicopters

ED Decision 2022/012/R

EFFECT OF TEMPORARILY FAILED OR DOWNGRADED GROUND EQUIPMENT ON LANDING MINIMA

(a) Lighting in Table 5 should be considered only if the relevant lighting is operating. For example, if components of a FALS have failed leaving only the last 250 m operating normally, the lighting facilities should be treated as BALS.

(b) Failures of standby equipment, standby power systems, middle markers and RVR assessment systems have no effect on minima.

GM1 NCO.OP.110(b)(5) Aerodrome operating minima — aeroplanes and helicopters

ED Decision 2022/012/R

VISUAL AND NON-VISUAL AIDS AND INFRASTRUCTURE

'Visual and non-visual aids and infrastructure' refers to all equipment and facilities required for the procedure to be used for the intended instrument approach operation. This includes but is not limited to, lights, markings, ground or space-based radio aids, etc.

NCO.OP.111 Aerodrome operating minima — 2D and 3D approach operations

Regulation (EU) 2021/2237

(a) The decision height (DH) to be used for a 3D approach operation or a 2D approach operation flown with the continuous descent final approach (CDFA) technique shall not be lower than the highest of:

(1) the obstacle clearance height (OCH) for the category of aircraft;

(2) the published approach procedure DH or minimum descent height (MDH), where applicable;

(3) the system minimum specified in Table 1;

(4) the minimum DH specified in the AFM or equivalent document, if stated.

(b) The MDH for a 2D approach operation flown without the CDFA technique shall not be lower than the highest of:

(1) the OCH for the category of aircraft;

(2) the published approach procedure MDH, where applicable;

(3) the system minimum specified in Table 1; or

(4) the minimum MDH specified in the AFM, if stated.

Table 1
System minima

Facility	Lowest DH/MDH (ft)
ILS/MLS/ GLS	200
GNSS/SBAS (LPV)	200
Precision approach radar (PAR)	200
GNSS/SBAS (LP)	250
GNSS (LNAV)	250
GNSS/Baro-VNAV (LNAV/VNAV)	250
Helicopter point-in-space approach	250
LOC with or without DME	250
SRA (terminating at ½ NM)	250
SRA (terminating at 1 NM)	300
SRA (terminating at 2 NM or more)	350
VOR	300
VOR/DME	250
NDB	350
NDB/DME	300
VDF	350

AMC1 NCO.OP.111 Aerodrome operating minima — 2D and 3D approach operations

ED Decision 2022/012/R

DETERMINATION OF DH/MDH FOR INSTRUMENT APPROACH OPERATIONS AND RUNWAY

When determining the DH/MDH in accordance with the obstacle clearance hight (OCH) for the category of aircraft and the published approach procedure DH or minimum descent height (MDH), the pilot should determine whether the obstacle limitation surface is appropriate for the type of instrument approach flown and runway as this matter may have an impact on the calculation of the OCH and DH/MDH. When this information is not available (e.g. not mentioned in the AIP, etc.), then the pilot should take into account Table 8 or 9 below, as applicable, when determining the DH/MDH:

Table 8

Runway type minima — aeroplanes

Runway type	Lowest DH/MDH (ft)
PA runway, category I	200
NPA runway	250
Non-instrument runway	Circling minima as shown in Table 1 in NCC.OP.112

Table 9

Type of runway/FATO minima — helicopters

Type of runway/FATO	Lowest DH/MDH (ft)
PA runway, category I NPA runway Non-instrument runway	200
Instrument FATO FATO	200 250

Table 8 does not apply to helicopter PinS approaches with instructions to 'proceed VFR'.

GM1 NCO.OP.111 Aerodrome operating minima — 2D and 3D approach operations

ED Decision 2022/012/R

APPROACH OPERATIONS — VERTICAL PATH CONTROL FOR NPA

(a) During a 3D instrument approach operation (using both lateral and vertical navigation guidance), the displayed vertical path should be followed continuously. The approach may be continued to DA/H, at which point a missed approach must be initiated if visual reference is not acquired.

(b) During a 2D instrument approach operation (using lateral navigation guidance only) flown using the continuous descent final approach (CDFA) technique, the vertical path should be approximated continuously by:

(1) choosing an appropriate vertical speed;

(2) cross-checking level against position along the approach; and

(3) adapting the vertical speed as required.

The approach may be continued to DA/H or the missed approach point (MAPt) (whichever is reached first), at which point a missed approach must be initiated if visual reference is not acquired. There is no MDH for an NPA flown using the CDFA technique. An aircraft may descend briefly below the DH on an NPA flown using the CDFA technique, in the same way as it may on a PA or APV.

(c) During a 2D instrument approach operation (using lateral navigation guidance only) flown using the step-down (non-CDFA) technique, the vertical path consists of a sequence of one or more descents to the next published level (i.e. the MDA/H or height at the next stepdown fix). The aircraft may fly level at the MDA/H until reaching the MAPt, where a missed approach must be initiated if visual reference is not acquired.

The CDFA technique has substantially improved safety performance in commercial air transport operations with complex motor-powered aircraft. In lighter, more manoeuvrable aircraft, operated by a single pilot, which may be accustomed to shorter and steeper visual approaches, there may sometimes be advantages to a step-down technique. Due consideration should be given to the choice of vertical path control at the planning stage of flight.

GM2 NCO.OP.111 Aerodrome operating minima — 2D and 3D approach operations

ED Decision 2022/012/R

DH/MDH — CALCULATION OF DA/MDA

NCO.OP.111 refers to DH and MDH because the rule compares heights with other heights (system minima, minimum DH in the AFM, etc.). Usually, the DH or MDH will be converted to DA or MDA for operational use by adding the threshold elevation.

GM3 NCO.OP.111 Aerodrome operating minima — 2D and 3D approach operations

ED Decision 2022/012/R

DH/MDH — PinS APPROACHES WITH VIRTUAL DESTINATION

For PinS approaches with instructions to 'proceed VFR' that are not associated with a runway/FATO/operating site, DH/MDH can be established with reference to the ground below the MAPt.

NCO.OP.112 Aerodrome operating minima — circling operations with aeroplanes

Regulation (EU) 2021/2237

(a) The MDH for a circling approach operation with aeroplanes shall not be lower than the highest of:

(1) the published circling OCH for the aeroplane category;

(2) the minimum circling height derived from Table 1; or

(3) the DH/MDH of the preceding IAP.

(b) The minimum visibility for a circling approach operation with aeroplanes shall be the highest of:

(1) the circling visibility for the aeroplane category, if published; or

(2) the minimum visibility derived from Table 1.

Table 1
MDH and minimum visibility for circling per aeroplane category aeroplane category

	Aeroplane category			
	A	B	C	D
MDH (ft)	400	500	600	700
Minimum VIS (m)	1 500	1 500	2 400	3 600

GM1 NCO.OP.112 Aerodrome operating minima — circling operations with aeroplanes

ED Decision 2022/012/R

SUPPLEMENTAL INFORMATION

(a) The purpose of this Guidance Material is to provide pilots with supplemental information regarding the application of aerodrome operating minima in relation to circling approaches.

(b) Conduct of flight — general:

(1) the MDH and obstacle clearance height (OCH) included in the procedure are referenced to aerodrome elevation;

(2) the MDA is referenced to mean sea level; and

(3) for these procedures, the applicable visibility is the flight visibility.

(c) Instrument approach followed by visual manoeuvring (circling) without prescribed tracks:

(1) When the aeroplane is on the initial instrument approach, before visual reference is established, but not below MDA/H — the aeroplane should follow the corresponding instrument approach procedure (IAP) until the appropriate instrument MAPt is reached.

(2) At the beginning of the level flight phase at or above the MDA/H, the instrument approach track should be maintained until the pilot:

(i) estimates that, in all probability, visual contact with the runway of intended landing or the runway environment will be maintained during the entire circling procedure;

(ii) estimates that the aeroplane is within the circling area before commencing circling; and

(iii) is able to determine the aeroplane's position in relation to the runway of intended landing with the aid of the appropriate visual references.

(3) When reaching the published instrument MAPt and the conditions stipulated in (c)(2) are unable to be established by the pilot, a missed approach should be carried out in accordance with that instrument approach procedure.

(4) After the aeroplane has left the track of the initial instrument approach, the flight phase outbound from the runway should be limited to an appropriate distance, which is required to align the aeroplane onto the final approach. Such manoeuvres should be conducted to enable the aeroplane:

(i) to attain a controlled and stable descent path to the intended landing runway; and

(ii) to remain within the circling area and in such a way that visual contact with the runway of intended landing or runway environment is maintained at all times.

(5) Flight manoeuvres should be carried out at an altitude/height that is not less than the circling MDA/H.

(6) Descent below MDA/H should not be initiated until the threshold of the runway to be used has been appropriately identified. The aeroplane should be in a position to continue with a normal rate of descent and land within the touchdown zone.

(d) Instrument approach followed by a visual manoeuvring (circling) with prescribed track:

(1) The aeroplane should remain on the initial instrument approach procedure until one of the following is reached:

(i) the prescribed divergence point to commence circling on the prescribed track; or

(ii) the MAPt.

(2) The aeroplane should be established on the instrument approach track determined by the radio navigation aids, RNAV, RNP, or ILS, MLS or GLS in level flight at or above the MDA/H at or by the circling manoeuvre divergence point.

(3) If the divergence point is reached before the required visual reference is acquired, a missed approach should be initiated not later than the MAPt and completed in accordance with the initial instrument approach procedure.

(4) When commencing the prescribed circling manoeuvre at the published divergence point, the subsequent manoeuvres should be conducted to comply with the published routing and published heights/altitudes.

(5) Unless otherwise specified, once the aeroplane is established on the prescribed track(s), the published visual reference does not need to be maintained unless:

(i) required by the State of the aerodrome; or

(ii) the circling MAPt (if published) is reached.

(6) If the prescribed circling manoeuvre has a published MAPt and the required visual reference has not been obtained by that point, a missed approach should be executed in accordance with (e)(2) and (e)(3).

(7) Subsequent further descent below MDA/H should only commence when the required visual reference has been obtained.

(8) Unless otherwise specified in the procedure, final descent should not be commenced from MDA/H until the threshold of the intended landing runway has been identified and the aeroplane is in a position to continue with a normal rate of descent to land within the touchdown zone.

(e) Missed approach:

(1) Missed approach during the instrument procedure prior to circling:

(i) if the missed approach is required to be flown when the aeroplane is positioned on the instrument approach track defined by radio navigation aids, RNAV, RNP or ILS, MLS or GLS and before commencing the circling manoeuvre, the published missed approach for the instrument approach should be followed; or

(ii) if the instrument approach procedure is carried out with the aid of an ILS, MLS or a stabilised approach (SAp), the MAPt associated with an ILS or MLS procedure without glide path (GP-out procedure) or the SAp, where applicable, should be used.

(2) If a prescribed missed approach is published for the circling manoeuvre, this overrides the manoeuvres prescribed below.

(3) If visual reference is lost while circling to land after the aeroplane has departed from the initial instrument approach track, the missed approach specified for that particular instrument approach should be followed. It is expected that the pilot will make an initial

climbing turn toward the intended landing runway to a position overhead of the aerodrome where the pilot will establish the aeroplane in a climb on the instrument missed approach segment.

(4) The aeroplane should not leave the visual manoeuvring (circling) area, which is obstacle protected, unless:

(i) established on the appropriate missed approach procedure; or

(ii) at minimum sector altitude (MSA).

(5) All turns should be made in the same direction and the aeroplane should remain within the circling protected area while climbing either:

(i) to the altitude assigned to any published circling missed approach manoeuvre if applicable;

(ii) to the altitude assigned to the missed approach of the initial instrument approach;

(iii) to the MSA;

(iv) to the minimum holding altitude (MHA) applicable for transition to a holding facility or fix, or continue to climb to an MSA; or

(v) as directed by ATS.

When the missed approach procedure is commenced on the 'downwind' leg of the circling manoeuvre, an 'S' turn may be undertaken to align the aeroplane on the initial instrument approach missed approach path, provided the aeroplane remains within the protected circling area.

The pilot-in-command should be responsible for ensuring adequate terrain clearance during the above-stipulated manoeuvres, particularly during the execution of a missed approach initiated by ATS.

(6) Because the circling manoeuvre may be accomplished in more than one direction, different patterns will be required to establish the aeroplane on the prescribed missed approach course, depending on its position at the time visual reference is lost. In particular, all turns are to be in the prescribed direction if this is restricted, e.g. to the west/east (left or right hand) to remain within the protected circling area.

(7) If a missed approach procedure is published for a particular runway onto which the aeroplane is conducting a circling approach and the aeroplane has commenced a manoeuvre to align with the runway, the missed approach for this direction may be accomplished. The ATS unit should be informed of the intention to fly the published missed approach procedure for that particular runway.

(8) The pilot-in-command should advise ATS when any missed approach procedure has been commenced, the height/altitude the aeroplane is climbing to and the position the aeroplane is proceeding towards and/or heading the aeroplane is established on.

GM2 NCO.OP.112 Aerodrome operating minima — circling operations with aeroplanes

ED Decision 2022/012/R

DH/MDH — CALCULATION OF DA/MDA

NCO.OP.112 refers to MDH because the rule compares heights with other heights (minimum circling height, OCH, etc.). Usually, the MDH will be converted to MDA for operational use by adding the aerodrome elevation.

NCO.OP.113 Aerodrome operating minima – onshore circling operations with helicopters

Regulation (EU) No 379/2014

The MDH for an onshore circling operation with helicopters shall not be lower than 250 ft and the meteorological visibility not less than 800 m.

NCO.OP.115 Departure and approach procedures – aeroplanes and helicopters

Regulation (EU) No 800/2013

(a) The pilot-in-command shall use the departure and approach procedures established by the State of the aerodrome, if such procedures have been published for the runway or FATO to be used.

(b) The pilot-in-command may deviate from a published departure route, arrival route or approach procedure:

(1) provided obstacle clearance criteria can be observed, full account is taken of the operating conditions and any ATC clearance is adhered to; or

(2) when being radar-vectored by an ATC unit.

AMC1 NCO.OP.115 Departure and approach procedures — aeroplanes and helicopters

ED Decision 2022/012/R

ARRIVALS AND DEPARTURES UNDER IFR WHERE NO INSTRUMENT FLIGHT PROCEDURES ARE PUBLISHED

When arriving or departing under IFR to/from an aerodrome or operating site with no published instrument flight procedure, the pilot-in-command should ensure that sufficient obstacle clearance is available for safe operation. This may be achieved, for example, by climbing or descending visually when below a minimum altitude at which obstacle clearance is known to exist.

When operating IFR in uncontrolled airspace, separation from other aircraft remains the responsibility of the pilot-in-command. The pilot-in-command should also comply with any flight planning and communication requirements designated by the competent authority under SERA.4001(b)(3) and SERA.5025(b). Any ATC clearance required to enter controlled airspace must be obtained prior to entry.

NCO.OP.116 Performance-based navigation – aeroplanes and helicopters

Regulation (EU) 2016/1119

The pilot-in-command shall ensure that, when PBN is required for the route or procedure to be flown:

(a) the relevant PBN navigation specification is stated in the AFM or other document that has been approved by the certifying authority as part of an airworthiness assessment or is based on such approval; and

(b) the aircraft is operated in conformance with the relevant navigation specification and limitations in the AFM or other document mentioned above.

AMC1 NCO.OP.116 Performance-based navigation – aeroplanes and helicopters

ED Decision 2016/018/R

PBN OPERATIONS

For operations where a navigation specification for performance-based navigation (PBN) has been prescribed and no specific approval is required in accordance with SPA.PBN.100, the pilot-in-command should:

(a) use operating procedures specifying:

(1) normal, abnormal and contingency procedures;

(2) electronic navigation database management; and

(3) relevant entries in the minimum equipment list (MEL), where applicable;

(b) ensure that he/she is appropriately trained for the intended operation.

AMC2 NCO.OP.116 Performance-based navigation – aeroplanes and helicopters

ED Decision 2016/018/R

MONITORING AND VERIFICATION

(a) Preflight and general considerations

(1) At navigation system initialisation, the pilot-in-command should confirm that the navigation database is current and verify that the aircraft position, if required, has been entered correctly.

(2) The active flight plan, if applicable, should be checked by comparing the charts or other applicable documents with navigation equipment and displays. This includes confirmation of the waypoint sequence, reasonableness of track angles and distances, any altitude or speed constraints, and, where possible, which waypoints are fly-by and which are fly-over. Where relevant, the RF leg arc radii should be confirmed.

(3) The pilot-in-command should check that the navigation aids critical to the operation of the intended PBN procedure are available.

(4) The pilot-in-command should confirm the navigation aids that should be excluded from the operation, if any.

(5) An arrival, approach or departure procedure should not be used if the validity of the procedure in the navigation database has expired.

(b) Departure

(1) Prior to commencing a take-off on a PBN procedure, the pilot-in-command should verify that the area navigation system is available and operating correctly and the correct aerodrome and runway data has been loaded. A positive check should be made that the indicated aircraft position is consistent with the actual aircraft position at the start of the take-off roll (aeroplanes) or lift-off (helicopters).

(2) Where GNSS is used, the signal should be acquired before the take-off roll (aeroplanes) or lift-off (helicopters) commences.

(3) Unless automatic updating of the actual departure point is provided, the pilot-in-command should ensure initialisation on the runway or FATO either by means of a manual runway threshold or intersection update, as applicable. This is to preclude any inappropriate or inadvertent position shift after take-off.

(c) Arrival and approach

(1) The pilot-in-command should verify that the navigation system is operating correctly and the correct arrival procedure and runway (including any applicable transition) are entered and properly depicted.

(2) Any published altitude and speed constraints should be observed.

(3) The pilot-in-command should check approach procedures (including alternate aerodromes if needed) as extracted by the system (e.g. CDU flight plan page) or presented graphically on the moving map, in order to confirm the correct loading and the reasonableness of the procedure content.

(4) Prior to commencing the approach operation (before the IAF), the pilot-in-command should verify the correctness of the loaded procedure by comparison with the appropriate approach charts. This check should include:

(i) the waypoint sequence;

(ii) reasonableness of the tracks and distances of the approach legs and the accuracy of the inbound course; and

(iii) the vertical path angle, if applicable.

(d) Altimetry settings for RNP APCH operations using Baro VNAV

(1) Barometric settings

(i) The pilot-in-command should set and confirm the correct altimeter setting and check that the two altimeters provide altitude values that do not differ more than 100 ft at the most at or before the FAF.

(ii) The pilot-in-command should fly the procedure with:

(A) a current local altimeter setting source available — a remote or regional altimeter setting source should not be used; and

(B) the QNH/QFE, as appropriate, set on the aircraft's altimeters.

(2) Temperature compensation

(i) For RNP APCH operations to LNAV/VNAV minima using Baro VNAV:

(A) the pilot-in-command should not commence the approach when the aerodrome temperature is outside the promulgated aerodrome temperature limits for the procedure, unless the area navigation system is equipped with approved temperature compensation for the final approach;

(B) when the temperature is within promulgated limits, the pilot-in-command should not make compensation to the altitude at the FAF; and

(C) since only the final approach segment is protected by the promulgated aerodrome temperature limits, the pilot-in-command should consider the effect of temperature on terrain and obstacle clearance in other phases of flight.

(ii) For RNP APCH operations to LNAV minima using Baro VNAV:

(A) the pilot-in-command should consider the effect of temperature on terrain and obstacle clearance in all phases of flight, in particular on any step-down fix;

(B) if the temperature is outside promulgated limits for RNP APCH to LNAV/VNAV minima, the pilot-in-command should not use a Baro VNAV function for vertical guidance, unless the area navigation system is equipped with approved temperature compensation for the final approach.

(e) Sensor and lateral navigation accuracy selection

(1) For multi-sensor systems, the pilot-in-command should verify, during the approach, that the GNSS sensor is used for position computation.

(2) For aircraft with RNP input selection capability, the pilot-in-command should confirm that the indicated RNP value is appropriate for the PBN operation.

AMC3 NCO.OP.116 Performance-based navigation – aeroplanes and helicopters

ED Decision 2016/018/R

MANAGAMENT OF THE NAVIGATION DATABASE

(a) For RNAV 1, RNAV 2, RNP 1, RNP 2, and RNP APCH, the pilot-in-command should neither insert nor modify waypoints by manual entry into a procedure (departure, arrival or approach) that has been retrieved from the database. User-defined data may be entered and used for waypoint altitude/speed constraints on a procedure where said constraints are not included in the navigation database coding.

(b) For RNP 4 operations, the pilot-in-command should not modify waypoints that have been retrieved from the database. User-defined data (e.g. for flex-track routes) may be entered and used.

(c) The lateral and vertical definition of the flight path between the FAF and the missed approach point (MAPt) retrieved from the database should not be revised by the pilot-in-command.

AMC4 NCO.OP.116 Performance-based navigation – aeroplanes and helicopters

ED Decision 2016/018/R

DISPLAYS AND AUTOMATION

(a) For RNAV 1, RNP 1, and RNP APCH operations, the pilot-in-command should use a lateral deviation indicator, and where available, flight director and/or autopilot in lateral navigation mode.

(b) The appropriate displays should be selected so that the following information can be monitored:

(1) the computed desired path;

(2) aircraft position relative to the lateral path (cross-track deviation) for FTE monitoring; and

(3) aircraft position relative to the vertical path (for a 3D operation).

(c) The pilot-in-command of an aircraft with a lateral deviation indicator (e.g. CDI) should ensure that lateral deviation indicator scaling (full-scale deflection) is suitable for the navigation accuracy associated with the various segments of the procedure.

(d) The pilot-in-command should maintain procedure centrelines unless authorised to deviate by ATC or demanded by emergency conditions.

(e) Cross-track error/deviation (the difference between the area-navigation-system-computed path and the aircraft-computed position) should normally be limited to ± ½ time the RNAV/RNP value associated with the procedure. Brief deviations from this standard (e.g. overshoots or undershoots during and immediately after turns) up to a maximum of 1 time the RNAV/RNP value should be allowable.

(f) For a 3D approach operation, the pilot-in-command should use a vertical deviation indicator and, where required by AFM/POH limitations, a flight director or autopilot in vertical navigation mode.

(g) Deviations below the vertical path should not exceed 75 ft at any time, or half-scale deflection where angular deviation is indicated, and not more than 75 ft above the vertical profile, or half-scale deflection where angular deviation is indicated, at or below 1 000 ft above aerodrome level. The pilot-in-command should execute a missed approach if the vertical deviation exceeds this criterion, unless the pilot-in-command has in sight the visual references required to continue the approach.

AMC5 NCO.OP.116 Performance-based navigation – aeroplanes and helicopters

ED Decision 2016/018/R

VECTORING AND POSITIONING

(a) ATC tactical interventions in the terminal area may include radar headings, ‘direct to’ clearances which bypass the initial legs of an approach procedure, interceptions of an initial or intermediate segments of an approach procedure or the insertion of additional waypoints loaded from the database.

(b) In complying with ATC instructions, the pilot-in-command should be aware of the implications for the navigation system.

(c) 'Direct to' clearances may be accepted to the IF provided that it is clear to the pilot-in-command that the aircraft will be established on the final approach track at least 2 NM before the FAF.

(d) 'Direct to' clearance to the FAF should not be acceptable. Modifying the procedure to intercept the final approach track prior to the FAF should be acceptable for radar-vectored arrivals or otherwise only with ATC approval.

(e) The final approach trajectory should be intercepted no later than the FAF in order for the aircraft to be correctly established on the final approach track before starting the descent (to ensure terrain and obstacle clearance).

(f) 'Direct to' clearances to a fix that immediately precede an RF leg should not be permitted.

(g) For parallel offset operations en route in RNP 4 and A-RNP, transitions to and from the offset track should maintain an intercept angle of no more than 45° unless specified otherwise by ATC.

AMC6 NCO.OP.116 Performance-based navigation – aeroplanes and helicopters

ED Decision 2016/018/R

ALERTING AND ABORT

(a) Unless the pilot-in-command has sufficient visual reference to continue the approach operation to a safe landing, an RNP APCH operation should be discontinued if:

(1) navigation system failure is annunciated (e.g. warning flag);

(2) lateral or vertical deviations exceed the tolerances; and

(3) loss of the on-board monitoring and alerting system.

(b) Discontinuing the approach operation may not be necessary for a multi-sensor navigation system that includes demonstrated RNP capability without GNSS in accordance with the AFM/POH.

(c) Where vertical guidance is lost while the aircraft is still above 1 000 ft AGL, the pilot-in-command may decide to continue the approach to LNAV minima, when supported by the navigation system.

AMC7 NCO.OP.116 Performance-based navigation – aeroplanes and helicopters

ED Decision 2016/018/R

CONTINGENCY PROCEDURES

(a) The pilot-in-command should make the necessary preparation to revert to a conventional arrival procedure where appropriate. The following conditions should be considered:

(1) failure of the navigation system components including navigation sensors, and a failure effecting flight technical error (e.g. failures of the flight director or autopilot);

(2) multiple system failures affecting aircraft performance;

(3) coasting on inertial sensors beyond a specified time limit; and

(4) RAIM (or equivalent) alert or loss of integrity function.

(b) In the event of loss of PBN capability, the pilot-in-command should invoke contingency procedures and navigate using an alternative means of navigation.

(c) The pilot-in-command should notify ATC of any problem with PBN capability.

(d) In the event of communication failure, the pilot-in-command should continue with the operation in accordance with published lost communication procedures.

AMC8 NCO.OP.116 Performance-based navigation – aeroplanes and helicopters

ED Decision 2016/018/R

RNAV 10

(a) Operating procedures and routes should take account of the RNAV 10 time limit declared for the inertial system, if applicable, considering also the effect of weather conditions that could affect flight duration in RNAV 10 airspace.

(b) The operator may extend RNAV 10 inertial navigation time by position updating. The operator should calculate, using statistically-based typical wind scenarios for each planned route, points at which updates can be made, and the points at which further updates will not be possible.

GM1 NCO.OP.116 Performance-based navigation – aeroplanes and helicopters

ED Decision 2016/018/R

DESCRIPTION

(a) For both, RNP X and RNAV X designations, the 'X' (where stated) refers to the lateral navigation accuracy (total system error) in NM, which is expected to be achieved at least 95 % of the flight time by the population of aircraft operating within the airspace, route or procedure. For RNP APCH and A-RNP, the lateral navigation accuracy depends on the segment.

(b) PBN may be required on notified routes, for notified procedures and in notified airspace.

RNAV 10

(c) For purposes of consistency with the PBN concept, this Regulation is using the designation 'RNAV 10' because this specification does not include on-board performance monitoring and alerting.

(d) However, it should be noted that many routes still use the designation 'RNP 10' instead of 'RNAV 10'. 'RNP 10' was used as designation before the publication of the fourth edition of ICAO Doc 9613 in 2013. The terms 'RNP 10' and 'RNAV 10' should be considered equivalent.

NCO.OP.120 Noise abatement procedures – aeroplanes and helicopters

Regulation (EU) 2018/1975

The pilot-in-command shall take into account published noise abatement procedures to minimise the effect of aircraft noise while ensuring that safety has priority over noise abatement.

NCO.OP.125 Fuel/energy and oil supply – aeroplanes and helicopters

Regulation (EU) 2021/1296

(a) The pilot-in-command shall ensure that the quantity of fuel/energy and oil that is carried on board is sufficient, taking into account the meteorological conditions, any element affecting the performance of the aircraft, any delays that are expected in flight, and any contingencies that may reasonably be expected to affect the flight.

(b) The pilot-in-command shall plan a quantity of fuel/energy to be protected as final reserve fuel/energy to ensure a safe landing. The pilot-in-command shall take into account all of the following, and in the following order of priority, to determine the quantity of the final reserve fuel/energy:

(1) the severity of the hazard to persons or property that may result from an emergency landing after fuel/energy starvation; and

(2) the likelihood of unexpected circumstances that the final reserve fuel/energy may no longer be protected.

(c) The pilot-in-command shall commence a flight only if the aircraft carries sufficient fuel/energy and oil:

(1) when no destination alternate is required, to fly to the aerodrome or operating site of intended landing, plus the final reserve fuel/energy; or

(2) when a destination alternate is required, to fly to the aerodrome or operating site of intended landing, and thereafter, to an alternate aerodrome, plus the final reserve fuel/energy.

AMC1 NCO.OP.125(b) Fuel/energy and oil supply — aeroplanes and helicopters

ED Decision 2022/005/R

PLANNING CRITERIA — FINAL RESERVE FUEL/ENERGY

The final reserve fuel (FRF)/energy should be no less than the required fuel/energy to fly:

(a) for aeroplanes:

(1) for 10 minutes at maximum continuous cruise power at 1 500 ft (450 m) above the destination under VFR by day, taking off and landing at the same aerodrome/landing site, and always remaining within sight of that aerodrome/landing site;

(2) for 30 minutes at holding speed at 1 500 ft (450 m) above the destination under VFR by day; and

(3) for 45 minutes at holding speed at 1 500 ft (450 m) above the destination or destination alternate aerodrome under VFR flights by night and IFR; and

(b) for helicopters:

(1) for 10 minutes at best-range speed under VFR by day, taking off and landing at the same aerodrome/landing site, and always remaining within 25 NM of that aerodrome/landing site, when needed for the purpose of specialised operations;

(2) for 20 minutes at best-range speed for other VFR flights; and

(3) for 30 minutes at holding speed at 1 500 ft (450 m) above the destination or destination alternate aerodrome under IFR.

AMC2 NCO.OP.125(b) Fuel/energy and oil supply — aeroplanes and helicopters

ED Decision 2022/005/R

FINAL RESERVE FUEL/ENERGY

The quantity of the FRF/energy should be planned before flight and be an easily recalled figure against which the pilot-in-command can assess the current fuel/energy state of the aircraft.

AMC3 NCO.OP.125(b) Fuel/energy and oil supply — aeroplanes and helicopters

ED Decision 2022/005/R

FINAL RESERVE FUEL/ENERGY PROTECTION

The planned FRF/energy should be protected as a reserve in normal operations. If the fuel/energy on board falls below the FRF/energy, the pilot-in-command should consider this to be an emergency. The FRF/energy should not be used as contingency fuel in normal operations.

When the FRF/energy can no longer be protected, then a fuel/energy emergency should be declared and any landing option explored, including deviating from rules, operational procedures, and methods in the interest of safety (as per point CAT.GEN.MPA.105(b)).

GM1 NCO.OP.125(b) Fuel/energy and oil supply — aeroplanes and helicopters

ED Decision 2022/005/R

LIKELIHOOD OF UNEXPECTED CIRCUMSTANCES TO INCREASE WITH FLIGHT DURATION

The likelihood of unexpected circumstances arising after the aircraft is fuelled may increase with the duration of the planned flight (for example, during a long flight, a problem at the destination aerodrome or operating site is more likely to have occurred than during a short local flight).

GM2 NCO.OP.125(b) Fuel/energy and oil supply — aeroplanes and helicopters

ED Decision 2022/005/R

PLANNING of FUEL/ENERGY QUANTITY — HOLDING

When planning the fuel/energy quantity, in case of holding, and if the aircraft documentation does not provide approved data for the holding regime, the pilot should derive the fuel/energy flow data from the long-range/best-range cruise data or, if this is not provided, from the lowest available cruise data in power setting tables.

NCO.OP.130 Passenger briefing

Regulation (EU) No 800/2013

The pilot-in-command shall ensure that before or, where appropriate, during the flight, passengers are given a briefing on emergency equipment and procedures.

AMC1 NCO.OP.130 Passenger briefing

ED Decision 2019/008/R

GENERAL

(a) The briefing should include the locations and use of seat belts and if applicable:

(1) emergency exits;

(2) passenger emergency briefing cards;

(3) life-jackets;

(4) oxygen dispensing equipment;

(5) life rafts; and

(6) other emergency equipment provided for individual passenger use.

(b) The briefing should also include the location and general manner of use of the principal emergency equipment carried for collective use.

NCO.OP.135 Flight preparation

Regulation (EU) 2021/2237

(a) Before commencing a flight, the pilot-in-command shall ascertain by every reasonable means available that the space-based facilities, ground and/or water facilities, including communication facilities and navigation aids available and directly required on such flight, for the safe operation of the aircraft, are adequate for the type of operation under which the flight is to be conducted.

(b) Before commencing a flight, the pilot-in-command shall be familiar with all available meteorological information appropriate to the intended flight. Preparation for a flight away from the vicinity of the place of departure, and for every flight under IFR, shall include:

(1) a study of the available current meteorological reports and forecasts; and

(2) the planning of an alternative course of action to provide for the eventuality that the flight cannot be completed as planned, because of meteorological conditions.

NCO.OP.140 Destination alternate aerodromes — aeroplanes

Regulation (EU) 2021/2237

For IFR flights, the pilot-in-command shall specify at least one destination alternate aerodrome in the flight plan, unless the available current meteorological information for the destination indicates, for the period from 1 hour before until 1 hour after the estimated time of arrival, or from the actual time of departure to 1 hour after the estimated time of arrival, whichever is the shorter period, a ceiling of at least 1 000ft above the DH/MDH for an available instrument approach procedure (IAP) and a visibility of at least 5 000m.

NCO.OP.141 Destination alternate aerodromes — helicopters

Regulation (EU) 2021/2237

For IFR flights, the pilot-in-command shall specify at least one destination alternate aerodrome in the flight plan, unless the available current meteorological information for the destination indicates, for the period from 1 hour before until 1 hour after the estimated time of arrival, or from the actual time

of departure to 1 hour after the estimated time of arrival, whichever is the shorter period, a ceiling of at least 1 000ft above the DH/MDH for an available IAP and a visibility of at least 3 000m.

NCO.OP.142 Destination alternate aerodromes — instrument approach operations

Regulation (EU) 2021/2237

The pilot-in-command shall only select an aerodrome as a destination alternate aerodrome if either:

(a) an IAP that does not rely on GNSS is available either at the destination aerodrome or at a destination alternate aerodrome, or

(b) all of the following conditions are met:

(1) the onboard GNSS equipment is SBAS-capable;

(2) the destination aerodrome, any destination alternate aerodrome, and the route between them are within SBAS service area;

(3) ABAS is predicted to be available in the event of the unexpected unavailability of SBAS;

(4) an IAP is selected (either at destination or destination alternate aerodrome) that does not rely on the availability of SBAS;

(5) an appropriate contingency action allows the flight to be completed safely in the event of unavailability of GNSS.

AMC1 NCO.OP.142(b)(1) Destination alternate aerodromes — instrument approach operations

ED Decision 2022/012/R

SBAS-CAPABLE GNSS EQUIPMENT

GNSS system which are (E)TSO-C145() or (E)TSO-C146() are SBAS-capable. Aircraft certified for RNP APCH to LPV minima (see AMC1 NCO.IDE.A/H.195(l)) are considered compliant.

AMC2 NCO.OP.142(b)(3) Destination alternate aerodromes — instrument approach operations

ED Decision 2022/012/R

USE OF RAIM FOR SBAS

Where a receiver with RAIM is used to meet the requirement for SBAS, its availability should be predicted by a pre-flight RAIM check, in accordance with AMC1 NCO.GEN.105(c).

GM1 NCO.OP.142(b)(4) Destination alternate aerodromes — instrument approach operations

ED Decision 2022/012/R

IAPs THAT DO NOT RELY ON SBAS

This instrument approach can be an RNP APCH to LNAV minima. It can also be an RNP APCH to LNAV/VNAV minima using Baro VNAV if the aircraft is equipped with a Baro VNAV function certified for APV.

This requirement is only used for planning purposes to cover the possibility of an SBAS loss; it does not prevent the pilot from flying an approach relying on SBAS if SBAS is available.

AMC1 NCO.OP.142(b)(5) Destination alternate aerodromes — instrument approach operations

ED Decision 2022/012/R

APPROPRIATE CONTINGENCY ACTION

An appropriate contingency action is an alternative offered in NCO.OP.142(b)(5) to completion of the planned flight to a safe landing, either at the planned destination or a destination alternate, using normal procedures and using navigation equipment meeting the requirements of NCO.IDE.A/H.100, installed for redundancy or as a backup.

The contingency action should be considered before flight and take into account the information identified by flight preparation according to NCO.OP.135. It may depend on the flight and availability of navigation solutions (satellites, ground navaids, etc.) and weather conditions (IMC, VMC) along the flight.

The contingency action addresses partial loss of navigation capability, such as:

— loss of the stand-alone GNSS equipment;

— local loss of GNSS signal-in-space (e.g. local jamming at destination);

— loss of GNSS signal-in-space.

It should take into account what options remain in case of loss of GNSS signal; for instance, (non-GNSS-based) radar vectoring by ATC, non-GNSS-based navigation systems or the possibility to reach VMC.

Examples of contingency actions include:

— seeking navigational assistance from ATS, using communication and surveillance systems that remain operational, to enable safe descent to VMC;

— the emergency use of navigation equipment not meeting the requirements of NCO.IDE.A/H.100 by making use of the provisions in NCO.OP.105(e);

— descent over water or very flat terrain to levels with reduced (but reasonable) obstacle clearance; and

— unusually long periods of dead reckoning.

NCO.OP.143 Destination alternate aerodromes planning minima — aeroplanes

Regulation (EU) 2021/2237

An aerodrome shall not be specified as a destination alternate aerodrome unless the available current meteorological information indicates, for the period from 1 hour before until 1 hour after the estimated time of arrival, or from the actual time of departure to 1 hour after the estimated time of arrival, whichever is the shorter period:

(a) for an alternate aerodrome with an available instrument approach operation with DH less than 250 ft,

(1) a ceiling of at least 200 ft above the decision height (DH) or minimum descent height (MDH) associated with the instrument approach operation; and

(2) a visibility of at least 1 500m; or

(b) for an alternate aerodrome with an instrument approach operation with DH or MDH 250 ft or more,

(1) a ceiling of at least 400 ft above the DH or MDH associated with the instrument approach operation; and

(2) a visibility of at least 3 000m; or

(c) for an alternate aerodrome without an IAP,

(1) a ceiling of at least the higher of 2 000ft and the minimum safe IFR height; and

(2) a visibility of at least 5 000m.

GM1 NCO.OP.143 Destination alternate aerodromes planning minima — aeroplanes

ED Decision 2022/012/R

MINIMUM SAFE IFR HEIGHT

For the purpose of NCO.OP.143, the minimum safe IFR height is the height above the aerodrome of the lowest level compatible with SERA.5015(b) for en-route flight at a point from which visual flight to the aerodrome could reasonably be commenced.

NCO.OP.144 Destination alternate aerodromes planning minima — helicopters

Regulation (EU) 2021/2237

An aerodrome shall not be specified as a destination alternate aerodrome unless the available current meteorological information indicates, for the period from 1 hour before until 1 hour after the estimated time of arrival, or from the actual time of departure to 1 hour after the estimated time of arrival, whichever is the shorter period,

(a) for an alternate aerodrome with an IAP:

(1) a ceiling of at least 200 ft above the DH or MDH associated with the IAP; and

(2) a visibility of at least 1 500m by day or 3 000m by night; or

(b) for an alternate aerodrome without an IAP:

(1) a ceiling of at least the higher of 2 000ft and the minimum safe IFR height; and

(2) a visibility of at least 1 500m by day or 3 000m by night.

GM1 NCO.OP.144 Destination alternate aerodromes planning minima — helicopters

ED Decision 2022/012/R

MINIMUM SAFE IFR HEIGHT

For the purpose of NCO.OP.144, the minimum safe IFR height is the height above the aerodrome of the lowest level compatible with SERA.5015(b) for en-route flight at a point from which visual flight to the aerodrome could reasonably be commenced.

NCO.OP.145 Refuelling with passengers embarking, on board or disembarking

Regulation (EU) 2021/1296

(a) The aircraft shall not be refuelled with aviation gasoline (AVGAS) or wide-cut type fuel or a mixture of these types of fuel, when passengers are embarking, on board or disembarking.

(b) For all other types of fuel/energy, the aircraft shall not be refuelled when passengers are embarking, on board or disembarking, unless it is attended by the pilot-in-command or other qualified personnel ready to initiate and direct an evacuation of the aircraft by the most practical and expeditious means available.

AMC1 NCO.OP.145 Refuelling with passengers embarking, on board or disembarking

ED Decision 2014/016/R

OPERATIONAL PROCEDURES

If passengers are on board when refuelling with other than aviation gasoline (AVGAS), wide-cut type fuel or a mixture of these types of fuel, the following precautions should be taken:

(a) the pilot-in-command should remain at a location during fuelling operations with passengers on board which allows him to handle emergency procedures concerning fire protection and fire-fighting and initiate and direct an evacuation;

(b) personnel and passengers should be warned that refuelling will take place;

(c) passengers should be instructed to unfasten their seat belts and refrain from smoking; and

(d) if the presence of fuel vapour is detected inside the aircraft, or any other hazard arises during refuelling, fuelling should be stopped immediately.

NCO.OP.147 Refuelling with engine(s) and/or rotors turning – helicopters

Regulation (EU) 2021/1296

Refuelling with engine(s) and/or rotors turning shall only be conducted if all those conditions are met simultaneously:

(a) if it is not practical to shut down or restart the engine;

(b) in accordance with any specific procedures and limitations in the aircraft flight manual (AFM);

(c) with JET A or JET A-1 fuel types;

(d) with no passengers or task specialists on board, embarking or disembarking;

(e) if the operator of the aerodrome or operating site allows such operations;

(f) in the presence of the appropriate rescue and firefighting (RFF) facilities or equipment; and

(g) in accordance with a checklist that shall contain:

(1) normal and contingency procedures;

(2) the required equipment;

(3) any limitations; and

(4) responsibilities and duties of the pilot-in-command and, if applicable, crew members and task specialists.

AMC1 NCO.OP.147 Refuelling with the engine(s) running and/or rotors turning — helicopters

ED Decision 2022/005/R

CHECKLIST — HELICOPTERS

(a) Before commencing a refuelling with rotors turning, the pilot-in-command should conduct a risk assessment, assessing the complexity of the activity in order to determine the hazards and associated risks inherent in the operation, and establish mitigating measures.

(b) Refuelling with rotors turning should be performed in accordance with a checklist. Based on the risk assessment, the pilot-in-command should establish a checklist appropriate to the activity and aircraft used, taking into account this AMC.

(c) The checklist should cover relevant elements of GM1 NCO.SPEC.105.

(d) The checklist that is relevant to the duties of the pilot-in-command, crew members, and task specialists should be readily accessible.

(e) The checklist should be regularly reviewed and updated, as appropriate.

GM1 NCO.OP.147 Refuelling with the engine(s) running and/or rotors turning — helicopters

ED Decision 2022/005/R

PROCEDURES — HELICOPTERS

AMC1 SPO.OP.157 and GM1 SPO.OP.157 provide a generic framework for the development of standard operating procedures (SOPs) for refuelling with the rotors turning.

NCO.OP.150 Carriage of passengers

Regulation (EU) 2018/394

The pilot-in-command shall ensure that, prior to and during taxiing, take-off and landing, and whenever deemed necessary in the interest of safety, each passenger on board occupies a seat or berth and has his/her safety belt or restraint device properly secured.

NCO.OP.155 Smoking on board — aeroplanes and helicopters

Regulation (EU) No 800/2013

The pilot-in-command shall not allow smoking on board:

(a) whenever considered necessary in the interest of safety; and

(b) during refuelling of the aircraft.

NCO.OP.160 Meteorological conditions

Regulation (EU) 2021/2237

(a) The pilot-in-command shall only commence or continue a VFR flight if the latest available meteorological information indicates that the meteorological conditions along the route and at

the intended destination at the estimated time of use will be at or above the applicable VFR operating minima.

(b) The pilot-in-command shall only commence or continue an IFR flight towards the planned destination aerodrome if the latest available meteorological information indicates that, at the estimated time of arrival, the meteorological conditions at the destination or at least one destination alternate aerodrome are at or above the applicable aerodrome operating minima.

(c) If a flight contains VFR and IFR segments, the meteorological information referred to in (a) and (b) shall be applicable as far as relevant.

AMC1 NCO.OP.160 Meteorological conditions

ED Decision 2014/016/R

APPLICATION OF AERODROME FORECASTS (TAF & TREND) — AEROPLANES AND HELICOPTERS

Where a terminal area forecast (TAF) or meteorological aerodrome or aeronautical report (METAR) with landing forecast (TREND) is used as forecast, the following criteria should be used:

(a) From the start of a TAF validity period up to the time of applicability of the first subsequent 'FM...' or 'BECMG' or, if no 'FM' or 'BECMG' is given, up to the end of the validity period of the TAF, the prevailing weather conditions forecast in the initial part of the TAF should be applied.

(b) From the time of observation of a METAR up to the time of applicability of the first subsequent 'FM...' or 'BECMG' or, if no 'FM' or 'BECMG' is given, up to the end of the validity period of the TREND, the prevailing weather conditions forecast in the METAR should be applied.

(c) Following FM (alone) or BECMG AT, any specified change should be applied from the time of the change.

(d) Following BECMG (alone), BECMG FM, BECMG TL, BECMG FM TL:

(1) in the case of deterioration, any specified change should be applied from the start of the change; and

(2) in the case of improvement, any specified change should be applied from the end of the change.

(e) In a period indicated by TEMPO (alone), TEMPO FM, TEMPO TL, TEMPO FM TL, PROB30/40 (alone):

(1) deteriorations associated with persistent conditions in connection with e.g. haze, mist, fog, dust/sandstorm, continuous precipitation should be applied;

(2) deteriorations associated with transient/showery conditions in connection with short-lived weather phenomena, e.g. thunderstorms, showers may be ignored; and

(3) improvements should in all cases be disregarded.

(f) In a period indicated by PROB30/40 TEMPO:

(1) deteriorations may be disregarded; and

(2) improvements should be disregarded.

Note: Abbreviations used in the context of this AMC are as follows:

FM:	from
BECMG:	becoming
AT:	at
TL:	till

TEMPO: temporarily
PROB: probability

GM1 NCO.OP.160 Meteorological conditions

ED Decision 2014/016/R

CONTINUATION OF A FLIGHT — AEROPLANES AND HELICOPtERS

In the case of in-flight re-planning, continuation of a flight refers to the point from which a revised flight plan applies.

GM2 NCO.OP.160 Meteorological conditions

ED Decision 2014/016/R

EVALUATION OF METEOROLOGICAL CONDITIONS — AEROPLANES AND HELICOPTERS

It is recommended that the pilot-in-command carefully evaluates the available meteorological information relevant to the proposed flight, such as applicable surface observations, winds, temperatures aloft, terminal and area forecasts, air meteorological information reports (AIRMETs), significant meteorological information (SIGMET) and pilot reports. The ultimate decision whether, when, and where to make the flight rests with the pilot-in-command. The pilot-in-command also should continue to re-evaluate changing weather conditions.

NCO.OP.165 Ice and other contaminants – ground procedures

Regulation (EU) No 800/2013

The pilot-in-command shall only commence take-off if the aircraft is clear of any deposit that might adversely affect the performance or controllability of the aircraft, except as permitted in the AFM.

NCO.OP.170 Ice and other contaminants – flight procedures

Regulation (EU) No 800/2013

(a) The pilot-in-command shall only commence a flight or intentionally fly into expected or actual icing conditions if the aircraft is certified and equipped to cope with such conditions as referred to in 2.a.5 of Annex IV to Regulation (EC) No 216/2008.

(b) If icing exceeds the intensity of icing for which the aircraft is certified or if an aircraft not certified for flight in known icing conditions encounters icing, the pilot-in-command shall exit the icing conditions without delay, by a change of level and/or route, and if necessary by declaring an emergency to ATC.

GM1 NCO.OP.170(b) Ice and other contaminants – flight procedures

ED Decision 2014/016/R

KNOWN ICING CONDITIONS

Known icing conditions are conditions where actual ice is observed visually to be on the aircraft by the pilot or identified by on-board sensors.

NCO.OP.175 Take-off conditions — aeroplanes and helicopters

Regulation (EU) 2021/2237

Before commencing take-off, the pilot-in-command shall be satisfied that:

(a) according to the information available, the meteorological conditions at the aerodrome or the operating site and the condition of the runway/FATO intended to be used will not prevent a safe take-off and departure; and

(b) the selected aerodrome operating minima are consistent with all of the following:

(1) the operative ground equipment;

(2) the operative aircraft systems;

(3) the aircraft performance;

(4) flight crew qualifications.

AMC1 NCO.OP.175 Take-off conditions — aeroplanes and helicopters

ED Decision 2022/012/R

METEOROLOGICAL CONDITIONS FOR TAKE-OFF — AEROPLANES

(a) When the reported visibility is below that required for take-off and RVR is not reported, a take-off should only be commenced if the pilot-in-command can determine that the visibility along the take-off runway/area is equal to or better than the required minimum.

(b) When no reported visibility or RVR is available, a take-off should only be commenced if the pilot-in-command can determine that the RVR/VIS along the take-off runway/area is equal to or better than the required minimum.

NCO.OP.180 Simulated situations in flight

Regulation (EU) 2018/1975

(a) The pilot-in-command shall, when carrying passengers or cargo, not simulate:

(1) situations that require the application of abnormal or emergency procedures; or

(2) flight in instrument meteorological conditions (IMC).

(b) Notwithstanding (a), when training flights are conducted by a training organisation referred to in Article 10a of Commission Regulation (EU) No 1178/2011, such situations may be simulated with student pilots on-board.

GM1.NCO.OP.180 Simulated situations in flight

ED Decision 2017/011/R

DESIGNATION OF PERSONS AS CREW MEMBERS

(a) The operator may designate any person as a crew member (including a task specialist) provided that:

(1) the role, according to the reasonable expectation of the operator, will enhance the safety of the flight or achieve an operational objective of the flight;

(2) the person, according to the reasonable expectation of the operator, is capable of fulfilling the role;

(3) the person has been briefed on the role as a crew member and informed that they are crew, not a passenger; and

(4) the person agrees to the role as a crew member.

(b) Crew members are not considered to be passengers.

(c) Crew members may be required, by specific provisions of this Regulation and other Implementing Rules, to hold licences, ratings or other personnel certificates to fulfil certain roles such as instructor, examiner or flight engineer in certain circumstances.

NCO.OP.185 In-flight fuel/energy management

Regulation (EU) 2021/1296

(a) The pilot-in-command shall monitor the amount of usable fuel/energy remaining on board to ensure that it is protected and not less than the fuel/energy that is required to proceed to an aerodrome or operating site where a safe landing can be made.

(b) The pilot-in-command of a controlled flight shall advise air traffic control (ATC) of a 'minimum fuel/energy' state by declaring 'MINIMUM FUEL' when the pilot-in-command has:

(1) committed to land at a specific aerodrome or operating site; and

(2) calculated that any change to the existing clearance to that aerodrome or operating site, or other air traffic delays, may result in landing with less than the planned final reserve fuel/energy.

(c) The pilot-in-command of a controlled flight shall declare a situation of 'fuel/energy emergency' by broadcasting 'MAYDAY MAYDAY MAYDAY FUEL' when the usable fuel/energy estimated to be available upon landing at the nearest aerodrome or operating site where a safe landing can be made is less than the planned final reserve fuel/energy.

GM1 NCO.OP.185(b)&(c) In-flight fuel/energy management

ED Decision 2022/005/R

'MINIMUM FUEL' DECLARATION

(a) The pilot-in-command may consider reporting the remaining fuel/energy endurance after a 'MINIMUM FUEL' or 'MAYDAY MAYDAY MAYDAY FUEL' declaration.

Note: For Part-NCO operators, the FRF/energy varies; therefore, the ATC may not be aware of the amount of the remaining fuel/energy endurance.

(b) The 'MINIMUM FUEL' declaration informs the ATC that all planned landing options have been reduced to a specific aerodrome or operating site of intended landing, and that for helicopters, no other landing site is available. It also informs the ATC that any change to the existing clearance may result in landing with less than the planned FRF/energy. This is not an emergency situation but an indication that an emergency situation is possible, should any additional delay occur.

The pilot should not expect any form of priority handling as a result of a 'MINIMUM FUEL' declaration. However, the ATC should advise the flight crew of any additional expected delays, as well as coordinate with other ATC units when transferring the control of the aircraft, to ensure that the other ATC units are aware of the flight's fuel/energy state.

(c) The requirement for declaring 'MINIMUM FUEL' and 'MAYDAY MAYDAY MAYDAY FUEL' applies only to controlled flights; however, these declarations may also be made during uncontrolled flights if the pilot-in-command considers this advisable.

NCO.OP.190 Use of supplemental oxygen

Regulation (EU) 2016/1119

(a) The pilot-in-command shall ensure that all flight crew members engaged in performing duties essential to the safe operation of an aircraft in flight use supplemental oxygen continuously whenever he/she determines that at the altitude of the intended flight the lack of oxygen might result in impairment of the faculties of crew members, and shall ensure that supplemental oxygen is available to passengers when lack of oxygen might harmfully affect passengers.

(b) In any other case when the pilot-in-command cannot determine how the lack of oxygen might affect all occupants on board, he/she shall ensure that:

(1) all crew members engaged in performing duties essential to the safe operation of an aircraft in flight use supplemental oxygen for any period in excess of 30 minutes when the pressure altitude in the the passenger compartment will be between 10 000 ft and 13 000 ft; and

(2) all occupants use supplemental oxygen for any period that the pressure altitude in the the passenger compartment will be above 13 000 ft.

AMC1 NCO.OP.190(a) Use of supplemental oxygen

ED Decision 2016/018/R

DETERMINATION OF SUPPLEMENTAL OXYGEN NEED

When determining the need for supplemental oxygen carriage and use, the pilot-in-command should:

(a) in the preflight phase:

(1) be aware of hypoxia conditions and associated risks;

(2) consider the following objective conditions for the intended flight:

(i) altitude;

(ii) duration of the flight; and

(iii) any other relevant operational conditions.

(3) consider individual conditions of flight crew members and passengers in relation to:

(i) altitude of the place of residence;

(ii) smoking;

(iii) experience in flights at high altitudes;

(iv) actual medical conditions and medications;

(v) age

(vi) disabilities; and

(vii) any other relevant factor that may be detected, or reported by the person; and

(4) when relevant, ensure that all flight crew members and passengers are briefed on hypoxia conditions and symptoms, as well as on the usage of supplemental oxygen equipment.

(b) during flight:

(1) monitor for early symptoms of hypoxia conditions; and

(2) if detecting early symptoms of hypoxia conditions:

(i) consider to return to a safe altitude, and

(ii) ensure that supplemental oxygen is used, if available.

GM1 NCO.OP.190 Use of supplemental oxygen

ED Decision 2016/018/R

GENERAL

(a) The responsibility of the pilot-in-command for safety of all persons on board, as required by NCO.GEN.105(a)(1), includes the determination of need for supplemental oxygen use.

(b) The altitudes above which NCO.OP.190(b) requires oxygen to be available and used are applicable to those cases when the pilot-in-command cannot determine the need for supplemental oxygen. However, if the pilot-in-command is able to make this determination, he/she may elect in the interest of safety to require oxygen also for operations at or below such altitudes.

(c) The pilot-in-command should be aware that flying below altitudes mentioned in NCO.OP.190(b) does not provide absolute protection against hypoxia symptoms, should individual conditions and aptitudes be prevalent.

GM2 NCO.OP.190 Use of supplemental oxygen

ED Decision 2016/018/R

DETERMINATION OF OXYGEN NEED — BEFORE FLIGHT

Detailed information and guidance on hypoxia conditions and symptoms, content of the briefing on hypoxia and assessment of individual conditions may be found in the EASA leaflet ‘Hypoxia’.

DETERMINATION OF OXYGEN NEED — IN FLIGHT

Several methods for monitoring hypoxia early symptoms may be used and some methods may be aided by personal equipment, such as finger-mounted pulse oximeters. Detailed information and guidance on entering hypoxia conditions, on hypoxia symptoms early detection, and on use of personal equipment such as finger-mounted pulse oximeters or equivalent may be found in the EASA leaflet ‘Hypoxia’.

NCO.OP.195 Ground proximity detection

Regulation (EU) No 800/2013

When undue proximity to the ground is detected by the pilot-in-command or by a ground proximity warning system, the pilot-in-command shall take corrective action immediately in order to establish safe flight conditions.

NCO.OP.200 Airborne collision avoidance system (ACAS II)

Regulation (EU) No 800/2013

When ACAS II is used, operational procedures and training shall be in accordance with Regulation (EU) No 1332/2011.

NCO.OP.205 Approach and landing conditions — aeroplanes

Regulation (EU) 2021/2237

Before commencing an approach to land, the pilot-in-command shall be satisfied that:

(a) according to the information available, the meteorological conditions at the aerodrome or the operating site, and the condition of the runway intended to be used will not prevent a safe approach, landing, or missed approach; and

(b) the selected aerodrome operating minima are consistent with all of the following:

(1) the operative ground equipment;

(2) the operative aircraft systems;

(3) the aircraft performance, and

(4) flight crew qualifications.

AMC1 NCO.OP.205 Approach and landing conditions – aeroplanes

ED Decision 2021/005/R

LANDING DISTANCE ASSESSMENT

(a) The in-flight landing distance assessment should be based on the latest available weather report and, if available, runway condition report (RCR).

(b) The assessment should be initially carried out when weather report and RCR, if available, are obtained, usually around top of descent. If the planned duration of the flight does not allow to carry out the assessment in non-critical phases of flight, the assessment should be carried out before departure.

(c) When meteorological conditions may lead to a degradation of the runway surface condition, the assessment should include consideration of how much deterioration in runway surface friction characteristics may be tolerated, so that a quick decision can be made prior to landing.

(d) Whenever the RCR is in use and the runway braking action encountered during the landing roll is not as good as reported by the aerodrome operator in the RCR, the pilot-in-command should notify the air traffic services (ATS) by means of a special air-report (AIREP) as soon as practicable.

GM1 NCO.OP.205 Approach and landing conditions — aeroplanes

ED Decision 2021/005/R

RUNWAY CONDITION REPORT (RCR)

When the aerodrome reports the runway conditions by means of an RCR, the information contained therein includes a runway condition code (RWYCC). The determination of the RWYCC is based on the use of the runway condition assessment matrix (RCAM). The RCAM correlates the RWYCC with the contaminants present on the runway and the braking action.

A detailed description of the RCR format and content, the RWYCC and the RCAM may be found in Annex V (Part-ADR.OPS) to Regulation (EU) No 139/2014, in Regulation (EU) 2017/373 and in Regulation (EU) No 923/2012 (SERA). Further guidance may be found in the following documents:

(a) ICAO Doc 9981 'PANS Aerodromes';

(b) ICAO Doc 4444 'PANS ATM';

(c) ICAO Doc 10064 'Aeroplane Performance Manual'; and

(d) ICAO Circular 355 'Assessment, Measurement and Reporting of Runway Surface Conditions'.

NCO.OP.206 Approach and landing conditions — helicopters

Regulation (EU) 2021/2237

Before commencing an approach to land, the pilot-in-command shall be satisfied that:

(a) according to the information available, the meteorological conditions at the aerodrome or the operating site and the condition of the final approach and take-off area (FATO) intended to be used will not prevent a safe approach, landing or missed approach; and

(b) the selected aerodrome operating minima are consistent with all of the following:

(1) the operative ground equipment;

(2) the operative aircraft systems;

(3) the aircraft performance;

(4) flight crew qualifications.

AMC1 NCO.OP.206 Approach and landing conditions — helicopters

ED Decision 2021/005/R

FATO SUITABILITY

The in-flight determination of the FATO suitability should be based on the latest available meteorological report.

NCO.OP.210 Commencement and continuation of approach — aeroplanes and helicopters

Regulation (EU) 2021/2237

(a) If the controlling RVR for the runway to be used for landing is less than 550 m (or any lower value established in accordance with an approval under SPA.LVO), then an instrument approach operation shall not be continued:

(1) past a point at which the aircraft is 1 000 ft above the aerodrome elevation; or

(2) into the final approach segment if the DH or MDH is higher than 1 000 ft.

(b) If the required visual reference is not established, a missed approach shall be executed at or before the DA/H or the MDA/H.

(c) If the required visual reference is not maintained after DA/H or MDA/H, a go-around shall be executed promptly.

AMC1 NCO.OP.210 Commencement and continuation of approach — aeroplanes and helicopters

ED Decision 2022/012/R

VISUAL REFERENCES

(a) For a straight-in approach, at DH or MDH, at least one of the visual references specified below should be distinctly visible and identifiable to the pilot:

(1) elements of the approach lighting system;

(2) the threshold;

(3) the threshold markings;

(4) the threshold lights;

(5) the threshold identification lights;

(6) the visual glide path indicator;

(7) the touchdown zone (TDZ) or TDZ markings;

(8) the TDZ lights;

(9) FATO/runway edge lights;

(10) for helicopter PinS approaches, the identification beacon light and visual ground reference;

(11) for helicopter PinS approaches, the identifiable elements of the environment defined on the instrument chart; or

(12) for helicopter PinS approaches with instructions to 'proceed VFR', sufficient visual cues to determine that the conditions for VFR are met.

(b) For a circling approach, the required visual reference is the runway environment.

AMC2 NCO.OP.210 Commencement and continuation of approach — aeroplanes and helicopters

ED Decision 2022/012/R

RVR MINIMA FOR CONTINUED APPROACH

(a) The controlling RVR should be the touchdown RVR.

(b) If the touchdown RVR is not reported, then the midpoint RVR should be the controlling RVR.

(c) If neither the touchdown RVR nor the midpoint RVR is reported, then NCO.OP.210(a) is not applicable.

GM1 NCO.OP.210 Commencement and continuation of approach — aeroplanes and helicopters

ED Decision 2022/012/R

APPLICATION OF RVR REPORTS

(a) There is no prohibition on the commencement of an approach based on reported RVR. The restriction in NCO.OP.210 applies only if the RVR is reported and applies to the continuation of

the approach past a point where the aircraft is 1 000 ft above the aerodrome elevation or into the final approach segment (FAS) as applicable.

(b) If a deterioration in the RVR is reported once the aircraft is below 1 000 ft on in the FAS, as applicable, then there is no requirement for the approach to be discontinued. In this situation, the normal visual reference requirements would apply at the DA/H.

(c) Where additional RVR information is provided (e.g. midpoint and stop end), this is advisory; such information may be useful to the pilot in order to determine whether there will be sufficient visual reference to control the aircraft during roll-out and taxi.

(d) If the RVR is less than the RVR calculated in accordance with AMC3 NCO.OP.110, a go-around is likely to be necessary since visual reference may not be established at the DH, or at the MDH at a point where a stable approach to landing in the TDZ remains possible. Similarly, in the absence of an RVR report, the reported visibility may indicate that a go-around is likely. The pilot-in-command should consider available options, based on a thorough assessment of risk, such as diverting to an alternate, before commencing the approach.

NCO.OP.220 Airborne collision avoidance system (ACAS II)

Regulation (EU) 2016/1199

When ACAS II is used, pilot-in-command shall apply the appropriate operational procedures and be adequately trained.

SUBPART C: AIRCRAFT PERFORMANCE AND OPERATING LIMITATIONS

NCO.POL.100 Operating limitations – all aircraft

Regulation (EU) 2018/394

(a) During any phase of operation, the loading, the mass and, the centre of gravity (CG) position of the aircraft shall comply with any limitation specified in the AFM or equivalent document.

(b) Placards, listings, instrument markings, or combinations thereof, containing those operating limitations prescribed by the AFM for visual presentation, shall be displayed in the aircraft.

NCO.POL.105 Weighing

Regulation (EU) 2018/1975

(a) The operator shall ensure that the mass and, the CG of the aircraft have been established by actual weighing prior to the initial entry into service of the aircraft. The accumulated effects of modifications and repairs on the mass and balance shall be accounted for and properly documented. Such information shall be made available to the pilot-in-command. The aircraft shall be reweighed if the effect of modifications on the mass and balance is not accurately known.

(b) The weighing shall be accomplished by the manufacturer of the aircraft or by an approved maintenance organisation.

GM1 NCO.POL.105 Weighing

ED Decision 2018/003/R

GENERAL

(a) New aircraft that have been weighed at the factory may be placed into operation without reweighing if the mass records and, balance records have been adjusted for alterations or modifications to the aircraft. Aircraft transferred from one EU operator to another EU operator do not have to be weighed prior to use by the receiving operator, unless the mass and balance cannot be accurately established by calculation.

(b) The mass and centre of gravity (CG) position should be revised whenever the cumulative changes to the dry operating mass exceed ± 0.5 % of the maximum landing mass or, for aeroplanes, the cumulative change in CG position exceeds 0.5 % of the mean aerodynamic chord. This may be done by weighing the aircraft or by calculation. If the AFM requires to record changes to mass and CG position below these thresholds, or to record changes in any case, and make them known to the pilot-in-command, mass and CG position should be revised accordingly and made known to the pilot-in-command.

NCO.POL.110 Performance – general

Regulation (EU) No 800/2013

The pilot-in-command shall only operate the aircraft if the performance is adequate to comply with the applicable rules of the air and any other restrictions applicable to the flight, the airspace or the aerodromes or operating sites used, taking into account the charting accuracy of any charts and maps used.

SUBPART D: INSTRUMENTS, DATA AND EQUIPMENT

SECTION 1 – AEROPLANES

NCO.IDE.A.100 Instruments and equipment – general

Regulation (EU) 2019/1384

(a) Instruments and equipment required by this Subpart shall be approved in accordance with the applicable airworthiness requirements if they are:

(1) used by the flight crew to control the flight path;

(2) used to comply with NCO.IDE.A.190;

(3) used to comply with NCO.IDE.A.195; or

(4) installed in the aeroplane.

(b) The following items, when required under this Subpart, do not need an equipment approval:

(1) spare fuses;

(2) independent portable lights;

(3) an accurate time piece;

(4) first-aid kit;

(5) survival and signalling equipment;

(6) sea anchor and equipment for mooring;

(7) child restraint device;

(8) a simple PCDS used by a task specialist as a restraint device.

(c) Instruments and equipment not required under Annex VII (Part-NCO) as well as any other equipment that is not required under this Regulation, but is carried on a flight, shall comply with the following requirements:

(1) the information provided by those instruments or equipment shall not be used by the flight crew members to comply with Annex II to Regulation (EU) 2018/1139 or points NCO.IDE.A.190 and NCO.IDE.A.195 of Annex VII;

(2) the instruments and equipment shall not affect the airworthiness of the aeroplane, even in the case of failures or malfunction.

(d) Instruments and equipment shall be readily operable or accessible from the station where the flight crew member that needs to use it is seated.

(e) All required emergency equipment shall be easily accessible for immediate use.

GM1 NCO.IDE.A.100(a) Instruments and equipment – general

ED Decision 2014/016/R

APPLICABLE AIRWORTHINESS REQUIREMENTS

The applicable airworthiness requirements for approval of instruments and equipment required by this Part are the following:

(a) Regulation (EU) No 748/2012[1] for aeroplanes registered in the EU; and

(b) Airworthiness requirements of the State of registry for aeroplanes registered outside the EU.

GM1 NCO.IDE.A.100(b) Instruments and equipment – general

ED Decision 2014/016/R

REQUIRED INSTRUMENTS AND EQUIPMENT THAT DO NOT NEED TO BE APPROVED IN ACCORDANCE WITH THE APPLICABLE AIRWORTHINESS REQUIREMENTS

The functionality of non-installed instruments and equipment required by this Subpart and that do not need an equipment approval, as listed in NCO.IDE.A.100(b), should be checked against recognised industry standards appropriate to the intended purpose. The operator is responsible for ensuring the maintenance of these instruments and equipment.

GM1 NCO.IDE.A.100(c) Instruments and equipment – general

ED Decision 2014/016/R

NOT REQUIRED INSTRUMENTS AND EQUIPMENT THAT DO NOT NEED TO BE APPROVED IN ACCORDANCE WITH THE APPLICABLE AIRWORTHINESS REQUIREMENTS, BUT ARE CARRIED ON A FLIGHT

(a) The provision of this paragraph does not exempt any installed instrument or item of equipment from complying with the applicable airworthiness requirements. In this case, the installation should be approved as required in the applicable airworthiness requirements and should comply with the applicable Certification Specifications.

(b) The failure of additional non-installed instruments or equipment not required by this Part or by the applicable airworthiness requirements or any applicable airspace requirements should not adversely affect the airworthiness and/or the safe operation of the aeroplane. Examples may be the following:

(1) portable electronic flight bag (EFB);

(2) portable electronic devices carried by crew members; and

(3) non-installed passenger entertainment equipment.

NCO.IDE.A.105 Minimum equipment for flight

Regulation (EU) No 800/2013

A flight shall not be commenced when any of the aeroplane instruments, items of equipment or functions required for the intended flight are inoperative or missing, unless:

(a) the aeroplane is operated in accordance with the MEL, if established; or

(b) the aeroplane is subject to a permit to fly issued in accordance with the applicable airworthiness requirements.

[1] Commission Regulation (EU) No 748/2012 of 3 August 2012 laying down implementing rules for the airworthiness and environmental certification of aircraft and related products, parts and appliances, as well as for the certification of design and production organisations, *OJ L 224, 21.8.2012, p. 1.*

AMC1 NCO.IDE.A.105 Minimum equipment for flight

ED Decision 2021/005/R

MANAGEMENT OF THE STATUS OF CERTAIN INSTRUMENTS, EQUIPMENT OR FUNCTIONS

The operator should control and retain the status of the instruments, equipment or functions required for the intended operation, that are not controlled for the purpose of continuing airworthiness management.

GM1 NCO.IDE.A.105 Minimum equipment for flight

ED Decision 2021/005/R

MANAGEMENT OF THE STATUS OF CERTAIN INSTRUMENTS, EQUIPMENT OR FUNCTIONS

(a) The operator should define responsibilities and procedures to retain and control the status of instruments, equipment or functions required for the intended operation, that are not controlled for the purpose of continuing airworthiness management.

(b) Examples of such instruments, equipment or functions may be, but are not limited to, equipment related to navigation approvals as FM immunity or certain software versions.

NCO.IDE.A.110 Spare electrical fuses

Regulation (EU) No 800/2013

Aeroplanes shall be equipped with spare electrical fuses, of the ratings required for complete circuit protection, for replacement of those fuses that are allowed to be replaced in flight.

GM1 NCO.IDE.A.110 Spare electrical fuses

ED Decision 2014/016/R

FUSES

A spare electrical fuse means a replaceable fuse in the flight crew compartment, not an automatic circuit breaker or circuit breakers in the electric compartments.

NCO.IDE.A.115 Operating lights

Regulation (EU) No 800/2013

Aeroplanes operated at night shall be equipped with:

(a) an anti-collision light system;

(b) navigation/position lights;

(c) a landing light;

(d) lighting supplied from the aeroplane's electrical system to provide adequate illumination for all instruments and equipment essential to the safe operation of the aeroplane;

(e) lighting supplied from the aeroplane's electrical system to provide illumination in all passenger compartments;

(f) an independent portable light for each crew member station; and

(g) lights to conform with the International Regulations for Preventing Collisions at Sea if the aeroplane is operated as a seaplane.

NCO.IDE.A.120 Operations under VFR – flight and navigational instruments and associated equipment

Regulation (EU) 2019/1384

(a) Aeroplanes operated under VFR by day shall be equipped with a means of measuring and displaying the following:

(1) magnetic heading;

(2) time, in hours, minutes and seconds;

(3) barometric altitude;

(4) indicated airspeed; and

(5) Mach number, whenever speed limitations are expressed in terms of Mach number.

(b) Aeroplanes operated under visual meteorological conditions (VMC) at night, or in conditions where the aeroplane cannot be maintained in a desired flight path without reference to one or more additional instruments, shall be, in addition to (a), equipped with:

(1) a means of measuring and displaying the following:

(i) turn and slip;

(ii) attitude;

(iii) vertical speed; and

(iv) stabilised heading;

and

(2) a means of indicating when the supply of power to the gyroscopic instruments is not adequate.

(c) Aeroplanes operated in conditions where they cannot be maintained in a desired flight path without reference to one or more additional instruments, shall be, in addition to (a) and (b), equipped with a means of preventing malfunction of the airspeed indicating system required in (a)(4) due to condensation or icing.

AMC1 NCO.IDE.A.120&NCO.IDE.A.125 Operations under VFR & operations under IFR – flight and navigational instruments and associated equipment

ED Decision 2014/016/R

INTEGRATED INSTRUMENTS

(a) Individual equipment requirements may be met by combinations of instruments, by integrated flight systems or by a combination of parameters on electronic displays. The information so available to each required pilot should not be less than that required in the applicable operational requirements, and the equivalent safety of the installation should be approved during type certification of the aeroplane for the intended type of operation.

(b) The means of measuring and indicating turn and slip, aeroplane attitude and stabilised aeroplane heading may be met by combinations of instruments or by integrated flight director systems, provided that the safeguards against total failure, inherent in the three separate instruments, are retained.

AMC2 NCO.IDE.A.120 Operations under VFR – flight and navigational instruments and associated equipment

ED Decision 2014/016/R

LOCAL FLIGHTS

For flights that do not exceed 60 minutes duration, that take off and land at the same aerodrome, and that remain within 50 NM of that aerodrome, an equivalent means of complying with NCO.IDE.A.120(b)(1)(i), (b)(1)(ii) may be:

(a) a turn and slip indicator;

(b) a turn co-ordinator; or

(c) both an attitude indicator and a slip indicator.

GM1 NCO.IDE.A.120 Operations under VFR – flight and navigational instruments and associated equipment

ED Decision 2014/016/R

SLIP INDICATION

Aeroplanes should be equipped with a means of measuring and displaying slip.

NCO.IDE.A.125 Operations under IFR – flight and navigational instruments and associated equipment

Regulation (EU) 2019/1384

Aeroplanes operated under IFR shall be equipped with:

(a) a means of measuring and displaying the following:

(1) magnetic heading;

(2) time in hours, minutes and seconds;

(3) barometric altitude;

(4) indicated airspeed;

(5) vertical speed;

(6) turn and slip;

(7) attitude;

(8) stabilised heading;

(9) outside air temperature; and

(10) Mach number, whenever speed limitations are expressed in terms of Mach number;

(b) a means of indicating when the supply of power to the gyroscopic instruments is not adequate; and

(c) a means of preventing malfunction of the airspeed indicating system required in (a)(4) due to condensation or icing.

GM1 NCO.IDE.A.125 Operations under IFR – flight and navigational instruments and associated equipment

ED Decision 2014/016/R

ALTERNATE SOURCE OF STATIC PRESSURE

Aeroplanes should be equipped with an alternate source of static pressure.

AMC1 NCO.IDE.A.120(a)(1)&NCO.IDE.A.125(a)(1) Operations under VFR & operations under IFR – flight and navigational instruments and associated equipment

ED Decision 2014/016/R

MEANS OF MEASURING AND DISPLAYING MAGNETIC HEADING

The means of measuring and displaying magnetic direction should be a magnetic compass or equivalent.

AMC1 NCO.IDE.A.120(a)(2)&NCO.IDE.A.125(a)(2) Operations under VFR & operations under IFR – flight and navigational instruments and associated equipment

ED Decision 2014/016/R

MEANS OF MEASURING AND DISPLAYING THE TIME

A means of measuring and displaying the time in hours, minutes and seconds may be a wrist watch capable of the same functions.

AMC1 NCO.IDE.A.120(a)(3)&NCO.IDE.A.125(a)(3) Operations under VFR operations & operations under IFR – flight and navigational instruments and associated equipment

ED Decision 2019/019/R

CALIBRATION OF THE MEANS OF MEASURING AND DISPLAYING PRESSURE ALTITUDE

The instrument measuring and displaying barometric altitude should be of a sensitive type calibrated in feet (ft), with a sub-scale setting, calibrated in hectopascals/millibars, adjustable for any barometric pressure likely to be set during flight.

GM1 NCO.IDE.A.125(a)(3) Operations under IFR – flight and navigational instruments and associated equipment

ED Decision 2014/016/R

ALTIMETERS

Altimeters with counter drum-pointer or equivalent presentation are considered to be less susceptible to misinterpretation for aeroplanes operating above 10 000 ft.

AMC1 NCO.IDE.A.120(a)(4)&NCO.IDE.A.125(a)(4) Operations under VFR & operations under IFR – flight and navigational instruments and associated equipment

ED Decision 2015/004/R

CALIBRATION OF THE INSTRUMENT INDICATING AIRSPEED

(a) The instrument indicating airspeed should be calibrated in knots (kt).

(b) In the case of aeroplanes with a maximum certified take-off mass (MCTOM) below 2 000 kg, calibration in kilometres per hour (kph) or in miles per hour (mph) is acceptable when such units are used in the AFM.

AMC1 NCO.IDE.A.120(c)&NCO.IDE.A.125(c) Operations under IFR — flight and navigational instruments and associated equipment

ED Decision 2014/016/R

MEANS OF PREVENTING MALFUNCTION DUE TO CONDENSATION OR ICING

The means of preventing malfunction due to either condensation or icing of the airspeed indicating system should be a heated pitot tube or equivalent.

AMC1 NCO.IDE.A.125(a)(9) Operations under IFR – flight and navigational instruments and associated equipment

ED Decision 2014/016/R

MEANS OF DISPLAYING OUTSIDE AIR TEMPERATURE

(a) The means of displaying outside air temperature should be calibrated in degrees Celsius.

(b) In the case of aeroplanes with a maximum certified take-off mass (MCTOM) below 2 000 kg, calibration in degrees Fahrenheit is acceptable, when such unit is used in the AFM.

(c) The means of displaying outside air temperature may be an air temperature indicator that provides indications that are convertible to outside air temperature.

NCO.IDE.A.130 Terrain awareness warning system (TAWS)

Regulation (EU) No 800/2013

Turbine-powered aeroplanes certified for a maximum passenger seating configuration of more than nine shall be equipped with a TAWS that meets the requirements for:

(a) class A equipment, as specified in an acceptable standard, in the case of aeroplanes for which the individual certificate of airworthiness (CofA) was first issued after 1 January 2011; or

(b) class B equipment, as specified in an acceptable standard, in the case of aeroplanes for which the individual CofA was first issued on or before 1 January 2011.

AMC1 NCO.IDE.A.130 Terrain awareness warning system (TAWS)

ED Decision 2014/016/R

EXCESSIVE DOWNWARDS GLIDESLOPE DEVIATION WARNING FOR CLASS A TAWS

The requirement for a Class A TAWS to provide a warning to the flight crew for excessive downwards glideslope deviation should apply to all final approach glideslopes with angular vertical navigation (VNAV) guidance, whether provided by the instrument landing system (ILS), microwave landing system (MLS), satellite-based augmentation system approach procedure with vertical guidance (SBAS APV (localiser performance with vertical guidance approach LPV)), ground-based augmentation system (GBAS (GPS landing system, GLS)) or any other systems providing similar guidance. The same requirement should not apply to systems providing vertical guidance based on barometric VNAV.

GM1 NCO.IDE.A.130 Terrain awareness warning system (TAWS)

ED Decision 2014/016/R

ACCEPTABLE STANDARD FOR TAWS

An acceptable standard for Class A and Class B TAWS may be the applicable European Technical Standards Order (ETSO) issued by the Agency or equivalent.

NCO.IDE.A.135 Flight crew interphone system

Regulation (EU) No 800/2013

Aeroplanes operated by more than one flight crew member shall be equipped with a flight crew interphone system, including headsets and microphones for use by all flight crew members.

AMC1 NCO.IDE.A.135 Flight crew interphone system

ED Decision 2014/016/R

GENERAL

(a) The flight crew interphone system should not be of a handheld type.

(b) A headset consists of a communication device that includes two earphones to receive and a microphone to transmit audio signals to the aeroplane's communication system. To comply with the minimum performance requirements, the earphones and microphone should match the communication system's characteristics and the flight crew compartment environment. The headset should be adequately adjustable in order to fit the pilot's head. Headset boom microphones should be of the noise cancelling type.

(c) If the intention is to utilise noise cancelling earphones, the pilot-in-command should ensure that the earphones do not attenuate any aural warnings or sounds necessary for alerting the flight crew on matters related to the safe operation of the aeroplane.

GM1 NCO.IDE.A.135 Flight crew interphone system

ED Decision 2014/016/R

HEADSET

The term 'headset' includes any aviation helmet incorporating headphones and microphone worn by a flight crew member.

NCO.IDE.A.140 Seats, seat safety belts, restraint systems and child restraint devices

Regulation (EU) 2019/1384

(a) Aeroplanes shall be equipped with:

(1) a seat or berth for each person on board who is aged 24 months or more;

(2) a seat belt on each seat and restraining belts for each berth;

(3) a child restraint device (CRD) for each person on board younger than 24 months; and

(4) a seat belt with upper torso restraint system on each flight crew seat, having a single point release for aeroplanes having a CofA first issued on or after 25 August 2016.

AMC1 NCO.IDE.A.140 Seats, seat safety belts, restraint systems and child restraint devices

ED Decision 2019/019/R

CHILD RESTRAINT DEVICES (CRDs)

(a) A CRD is considered to be acceptable if:

(1) it is a supplementary loop belt manufactured with the same techniques and the same materials as the approved safety belts; or

(2) it complies with (b).

(b) Provided the CRD can be installed properly on the respective aircraft seat, the following CRDs are considered acceptable:

(1) CRDs approved for use in aircraft according to the European Technical Standard Order ETSO-C100c on Aviation Child Safety Device (ACSD);

(2) CRDs approved by EASA through a Type Certificate or Supplemental Type Certificate;

(3) Child seats approved for use in motor vehicles on the basis of the technical standard specified in (i). The child seat must be also approved for use in aircraft on the basis of the technical standard specified in either point (ii) or point (iii):

(i) UN Standard ECE R44-04 (or 03), or ECE R129 bearing the respective 'ECE R' label; and

(ii) German 'Qualification Procedure for Child Restraint Systems for Use in Aircraft' (TÜV/958-01/2001) bearing the label 'For Use in Aircraft'; or

(iii) Other technical standard acceptable to the competent authority. The child seat should hold a qualification sign that it can be used in aircraft.

(4) Child seats approved for use in motor vehicles and aircraft according to Canadian CMVSS 213/213.1 bearing the respective label;

(5) Child seats approved for use in motor vehicles and aircraft according to US FMVSS No 213 and bearing one or two labels displaying the following two sentences:

(i) 'THIS CHILD RESTRAINT SYSTEM CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE SAFETY STANDARDS'; and

(ii) in red letters 'THIS RESTRAINT IS CERTIFIED FOR USE IN MOTOR VEHICLES AND AIRCRAFT';

(6) Child seats approved for use in motor vehicles and aircraft according to Australia/New Zealand's technical standard AS/NZS 1754:2013 bearing the green part on the label displaying 'For Use in Aircraft'; and

(7) CRDs manufactured and tested according to other technical standards equivalent to those listed above. The devices should be marked with an associated qualification sign, which shows the name of the qualification organisation and a specific identification number, related to the associated qualification project. The qualifying organisation should be a competent and independent organisation that is acceptable to the competent authority.

(c) Location

(1) Forward-facing child seats may be installed on both forward-and rearward-facing passenger seats, but only when fitted in the same direction as the passenger seat on which they are positioned. Rearward-facing child seats should only be installed on forward-facing passenger seats. A child seat may not be installed within the radius of action of an airbag unless it is obvious that the airbag is de-activated or it can be demonstrated that there is no negative impact from the airbag.

(2) An infant/child in a CRD should be located in the vicinity of a floor level exit.

(3) An infant/child in a CRD should not hinder evacuation for any passenger.

(d) Installation

(1) CRDs tested and approved for use in aircraft should only be installed on a suitable passenger seat by the method shown in the manufacturer's instructions provided with each CRD and with the type of connecting device they are approved for the installation in aircraft. CRDs designed to be installed only by means of rigid bar lower anchorages (ISOFIX or equivalent) should only be used on passenger seats equipped with such connecting devices and should not be secured by passenger seat lap belt.

(2) All safety and installation instructions should be followed carefully by the responsible adult accompanying the infant/child. Operators should prohibit the use of a CRD not installed on the passenger seat according to the manufacturer's instructions or not approved for use in aircraft.

(3) If a forward-facing child seat with a rigid backrest is to be fastened by a seat lap belt, the restraint device should be fastened when the backrest of the passenger seat on which it rests is in a reclined position. Thereafter, the backrest is to be positioned upright. This procedure ensures better tightening of the child seat on the aircraft seat if the aircraft seat is reclinable.

(4) The buckle of the adult safety belt should be easily accessible for both opening and closing, and should be in line with the seat belt halves (not canted) after tightening.

(5) Forward-facing restraint devices with an integral harness must not be installed such that the adult safety belt is secured over the infant.

(e) Operation

(1) Each CRD should remain secured to a passenger seat during all phases of flight unless it is properly stowed when not in use.

(2) Where a child seat is adjustable in recline, it should be in an upright position for all occasions when passenger restraint devices are required.

AMC2 NCO.IDE.A.140 Seats, seat safety belts, restraint systems and child restraint devices

ED Decision 2016/018/R

UPPER TORSO RESTRAINT SYSTEM

(a) The following systems are deemed to be compliant with the requirement for an upper torso restraint system:

(1) A seat belt with a diagonal shoulder strap;

(2) A restraint system having a seat belt and two shoulder straps that may be used independently;

(3) A restraint system having a seat belt, two shoulder straps and additional straps that may be used independently.

(b) The use of the upper torso restraint independently from the use of the seat belt is intended as an option for the comfort of the occupant of the seat in those phases of flight where only the seat belt is required to be fastened. A restraint system including a seat belt and an upper torso restraint that both remain permanently fastened is also acceptable.

SEAT BELT

A seat belt with a diagonal shoulder strap (three anchorage points) is deemed to be compliant with the requirement for a seat belt (two anchorage points).

NCO.IDE.A.145 First-aid kit

Regulation (EU) No 800/2013

(a) Aeroplanes shall be equipped with a first-aid kit.

(b) The first-aid kit shall be:

(1) readily accessible for use; and

(2) kept up-to-date.

AMC1 NCO.IDE.A.145 First-aid kit

ED Decision 2021/005/R

CONTENT OF FIRST-AID KITS

(a) First-aid kits should be equipped with appropriate and sufficient medications and instrumentation. However, these kits should be supplemented by the operator according to the characteristics of the operation (scope of operation, flight duration, number and demographics of passengers, etc.).

(b) The following should be included in the FAKs:

(1) bandages (assorted sizes, including a triangular bandage),

(2) burns dressings (large and small),

(3) wound dressings (large and small),

(4) adhesive dressings (assorted sizes),

(5) antiseptic wound cleaner,

(6) safety scissors,

(7) disposable gloves,

(8) disposable resuscitation aid, and

(9) surgical masks.

AMC2 NCO.IDE.A.145 First-aid kit

ED Decision 2014/016/R

MAINTENANCE OF FIRST-AID KIT

To be kept up-to-date, the first-aid kit should be:

(a) inspected periodically to confirm, to the extent possible, that contents are maintained in the condition necessary for their intended use;

(b) replenished at regular intervals, in accordance with instructions contained on their labels, or as circumstances warrant; and

(c) replenished after use in-flight at the first opportunity where replacement items are available.

GM1 NCO.IDE.A.145 First-aid kit

ED Decision 2021/005/R

LOCATION

The location of the first-aid kit in the cabin is normally indicated using internationally recognisable signs.

GM2 NCO.IDE.A.145 First-aid kit

ED Decision 2021/005/R

CONTENT OF FIRST-AID KITS

The operator may supplement first-aid kits according to the characteristics of the operation based on a risk assessment. The assessment does not require an approval by the competent authority.

NCO.IDE.A.150 Supplemental oxygen – pressurised aeroplanes

Regulation (EU) No 800/2013

(a) Pressurised aeroplanes operated at flight altitudes for which the oxygen supply is required in accordance with (b) shall be equipped with oxygen storage and dispensing apparatus capable of storing and dispensing the required oxygen supplies.

(b) Pressurised aeroplanes operated above flight altitudes at which the pressure altitude in the passenger compartments is above 10 000 ft shall carry enough breathing oxygen to supply:

(1) all crew members and:

(i) 100 % of the passengers for any period when the cabin pressure altitude exceeds 15 000 ft, but in no case less than 10 minutes' supply;

(ii) at least 30 % of the passengers, for any period when, in the event of loss of pressurisation and taking into account the circumstances of the flight, the pressure altitude in the passenger compartment will be between 14 000 ft and 15 000 ft; and

(iii) at least 10 % of the passengers for any period in excess of 30 minutes when the pressure altitude in the passenger compartment will be between 10 000 ft and 14 000 ft;

and

(2) all the occupants of the passenger compartment for no less than 10 minutes, in the case of aeroplanes operated at pressure altitudes above 25 000 ft, or operated below that altitude but under conditions that will not allow them to descend safely to a pressure altitude of 13 000 ft within 4 minutes.

(c) Pressurised aeroplanes operated at flight altitudes above 25 000 ft shall, in addition, be equipped with a device to provide a warning indication to the flight crew of any loss of pressurisation.

AMC1 NCO.IDE.A.150 Supplemental oxygen – pressurised aeroplanes

ED Decision 2014/016/R

DETERMINATION OF OXYGEN

(a) In the determination of the amount of oxygen for the routes to be flown, it is assumed that the aeroplane will descend in accordance with the emergency procedures specified in the AFM, without exceeding its operating limitations, to a flight altitude that will allow the flight to be completed safely (i.e. flight altitudes ensuring adequate terrain clearance, navigational accuracy, hazardous weather avoidance, etc.).

(b) The amount of oxygen should be determined on the basis of cabin pressure altitude, flight duration, and on the assumption that a cabin pressurisation failure will occur at the pressure altitude or point of flight that is most critical from the standpoint of oxygen need.

(c) Following a cabin pressurisation failure, the cabin pressure altitude should be considered to be the same as the aeroplane pressure altitude, unless it can be demonstrated to the competent authority that no probable failure of the cabin or pressurisation system will result in a cabin pressure altitude equal to the aeroplane pressure altitude. Under these circumstances, the demonstrated maximum cabin pressure altitude may be used as a basis for determination of oxygen supply.

NCO.IDE.A.155 Supplemental oxygen – non-pressurised aeroplanes

Regulation (EU) 2016/1119

Non-pressurised aeroplanes operated when an oxygen supply is required in accordance with NCO.OP.190 shall be equipped with oxygen storage and dispensing apparatus capable of storing and dispensing the required oxygen supplies.

AMC1 NCO.IDE.A.155 Supplemental oxygen – non-pressurised aeroplanes

ED Decision 2014/016/R

DETERMINATION OF OXYGEN

(a) In the determination of the amount of oxygen for the routes to be flown, it is assumed that the aeroplane will operate at a flight altitude that will allow the flight to be completed safely (i.e.

flight altitudes ensuring adequate terrain clearance, navigational accuracy, hazardous weather avoidance, etc.).

(b) The amount of oxygen should be determined on the basis of cabin pressure altitude and flight duration.

AMC2 NCO.IDE.A.155 Supplemental oxygen supply – non-pressurised aeroplanes

ED Decision 2016/018/R

OXYGEN SUPPLY

The need for oxygen supply, when required by NCO.OP.190, may be met either by means of installed equipment or portable equipment.

NCO.IDE.A.160 Hand fire extinguishers

Regulation (EU) 2018/1975

(a) Aeroplanes, except ELA1 aeroplanes, shall be equipped with at least one hand fire extinguisher:

(1) in the flight crew compartment; and

(2) in each passenger compartment that is separate from the flight crew compartment, except if the compartment is readily accessible to the flight crew.

(b) The type and quantity of extinguishing agent for the required fire extinguishers shall be suitable for the type of fire likely to occur in the compartment where the extinguisher is intended to be used and to minimise the hazard of toxic gas concentration in compartments occupied by persons.

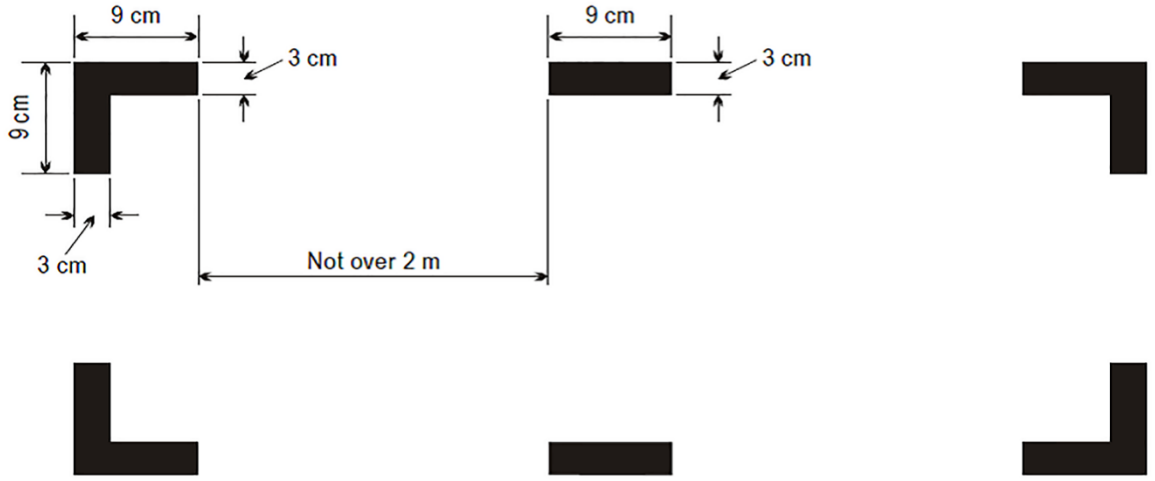
NCO.IDE.A.165 Marking of break-in points

Regulation (EU) No 800/2013

If areas of the aeroplane's fuselage suitable for break-in by rescue crews in an emergency are marked, such areas shall be marked as shown in Figure 1.

Figure 1

Marking of break-in points



AMC1 NCO.IDE.A.165 Marking of break-in points

ED Decision 2014/016/R

MARKINGS — COLOUR AND CORNERS

(a) The colour of the markings should be red or yellow and, if necessary, should be outlined in white to contrast with the background.

(b) If the corner markings are more than 2 m apart, intermediate lines 9 cm x 3 cm should be inserted so that there is no more than 2 m between adjacent markings.

NCO.IDE.A.170 Emergency locator transmitter (ELT)

Regulation (EU) No 800/2013

(a) Aeroplanes shall be equipped with:

(1) an ELT of any type, when first issued with an individual CofA on or before 1 July 2008;

(2) an automatic ELT, when first issued with an individual CofA after 1 July 2008; or

(3) a survival ELT (ELT(S)) or a personal locator beacon (PLB), carried by a crew member or a passenger, when certified for a maximum passenger seating configuration of six or less.

(b) ELTs of any type and PLBs shall be capable of transmitting simultaneously on 121,5 MHz and 406 MHz.

AMC1 NCO.IDE.A.170 Emergency locator transmitter (ELT)

ED Decision 2014/016/R

BATTERIES

(a) All batteries used in ELTs or PLBs should be replaced (or recharged, if the battery is rechargeable) when the equipment has been in use for more than 1 cumulative hour or in the following cases:

(1) Batteries specifically designed for use in ELTs and having an airworthiness release certificate (EASA Form 1 or equivalent) should be replaced (or recharged, if the battery is rechargeable) before the end of their useful life in accordance with the maintenance instructions applicable to the ELT.

(2) Standard batteries manufactured in accordance with an industry standard and not having an airworthiness release certificate (EASA Form 1 or equivalent), when used in ELTs should be replaced (or recharged, if the battery is rechargeable) when 50 % of their useful life (or for rechargeable, 50 % of their useful life of charge), as established by the battery manufacturer, has expired.

(3) All batteries used in PLBs should be replaced (or recharged, if the battery is rechargeable) when 50 % of their useful life (or for rechargeable, 50 % of their useful life of charge), as established by the battery manufacturer, has expired.

(4) The battery useful life (or useful life of charge) criteria in (1),(2) and (3) do not apply to batteries (such as water-activated batteries) that are essentially unaffected during probable storage intervals.

(b) The new expiry date for a replaced (or recharged) battery should be legibly marked on the outside of the equipment.

AMC2 NCO.IDE.A.170 Emergency locator transmitter (ELT)

ED Decision 2021/008/R

TYPES OF ELTs AND GENERAL TECHNICAL SPECIFICATIONS

(a) The ELT required by this provision should be one of the following:

(1) Automatic fixed (ELT(AF)). An automatically activated ELT that is permanently attached to an aircraft and is designed to aid search and rescue (SAR) teams in locating the crash site.

(2) Automatic portable (ELT(AP)). An automatically activated ELT that is rigidly attached to an aircraft before a crash, but is readily removable from the aircraft after a crash. It functions as an ELT during the crash sequence. If the ELT does not employ an integral antenna, the aircraft-mounted antenna may be disconnected and an auxiliary antenna (stored on the ELT case) attached to the ELT. The ELT can be tethered to a survivor or a life-raft. This type of ELT is intended to aid SAR teams in locating the crash site or survivor(s).

(3) Automatic deployable (ELT(AD)). An ELT that is rigidly attached to the aircraft before the crash and that is automatically deployed and activated by an impact, and, in some cases, also by water sensors. This type of ELT should float in water and is intended to aid SAR teams in locating the crash site. The ELT(AD) may be either a stand-alone beacon or an inseparable part of a deployable recorder.

(4) Survival ELT (ELT(S)). An ELT that is removable from an aircraft, stowed so as to facilitate its ready use in an emergency and manually activated by a survivor. An ELT(S) may be activated manually or automatically (e.g. by water activation). It should be designed either to be tethered to a life-raft or a survivor. A water-activated ELT(S) is not an ELT(AP).

(b) To minimise the possibility of damage in the event of crash impact, the automatic ELT should be rigidly fixed to the aircraft structure, as far aft as is practicable, with its antenna and connections arranged so as to maximise the probability of the signal being transmitted after a crash.

(c) Any ELT carried should operate in accordance with the relevant provisions of ICAO Annex 10, Volume III, and should be registered with the national agency responsible for initiating search and rescue or other nominated agency.

AMC3 NCO.IDE.A.170 Emergency locator transmitter (ELT)

ED Decision 2014/016/R

PLB TECHNICAL SPECIFICATIONS

(a) A personal locator beacon (PLB) should have a built-in GNSS receiver with a cosmicheskaya sistyema poiska avariynich sudov — search and rescue satellite-aided tracking (COSPAS-SARSAT) type approval number. However, devices with a COSPAS-SARSAT number belonging to series 700 are excluded as this series of numbers identifies the special-use beacons not meeting all the technical requirements and all the tests specified by COSPAS-SARSAT.

(b) Any PLB carried should be registered with the national agency responsible for initiating search and rescue or other nominated agency.

AMC4 NCO.IDE.A.170 Emergency locator transmitter (ELT)

ED Decision 2014/016/R

BRIEFING ON PLB USE

When a PLB is carried by a passenger, he/she should be briefed on its characteristics and use by the pilot-in-command before the flight.

GM1 NCO.IDE.A.170 Emergency locator transmitter (ELT)

ED Decision 2021/008/R

TERMINOLOGY

GM1 CAT.IDE.A.280 contains explanations of terms used in point NCO.IDE.A.170 and in the related AMC.

NCO.IDE.A.175 Flight over water

Regulation (EU) No 800/2013

(a) The following aeroplanes shall be equipped with a life-jacket for each person on board, or equivalent individual floatation device for each person on board younger than 24 months, that shall be worn or stowed in a position that is readily accessible from the seat or berth of the person for whose use it is provided:

(1) single-engined landplanes when:

(i) flying over water beyond gliding distance from land; or

(ii) taking off or landing at an aerodrome or operating site where, in the opinion of the pilot-in-command, the take-off or approach path is so disposed over water that there would be a likelihood of a ditching;

(2) seaplanes operated over water; and

(3) aeroplanes operated at a distance away from land where an emergency landing is possible greater than that corresponding to 30 minutes at normal cruising speed or 50 NM, whichever is less.

(b) Seaplanes operated over water shall be equipped with:

(1) one anchor;

(2) one sea anchor (drogue), when necessary to assist in manoeuvring; and

(3) equipment for making the sound signals, as prescribed in the International Regulations for Preventing Collisions at Sea, where applicable.

(c) The pilot-in-command of an aeroplane operated at a distance away from land where an emergency landing is possible greater than that corresponding to 30 minutes at normal cruising speed or 50 NM, whichever is the lesser, shall determine the risks to survival of the occupants of the aeroplane in the event of a ditching, based on which he/she shall determine the carriage of:

(1) equipment for making the distress signals;

(2) life-rafts in sufficient numbers to carry all persons on board, stowed so as to facilitate their ready use in emergency; and

(3) life-saving equipment, to provide the means of sustaining life, as appropriate to the flight to be undertaken.

AMC1 NCO.IDE.A.175 Flight over water

ED Decision 2014/016/R

ACCESSIBILITY OF LIFE-JACKETS

The life-jacket, if not worn, should be accessible from the seat or berth of the person for whose use it is provided, with a safety belt or a restraint system fastened.

MEANS OF ILLUMINATION FOR LIFE-JACKETS

Each life-jacket or equivalent individual flotation device should be equipped with a means of electric illumination for the purpose of facilitating the location of persons.

RISK ASSESSMENT

(a) When conducting the risk assessment, the pilot-in-command should base his/her decision, as far as is practicable, on the Implementing Rules and AMCs applicable to the operation of the aeroplane.

(b) The pilot-in-command should, for determining the risk, take the following operating environment and conditions into account:

(1) sea state;

(2) sea and air temperatures;

(3) the distance from land suitable for making an emergency landing; and

(4) the availability of search and rescue facilities.

GM1 NCO.IDE.A.175 Flight over water

ED Decision 2014/016/R

SEAT CUSHIONS

Seat cushions are not considered to be flotation devices.

NCO.IDE.A.180 Survival equipment

Regulation (EU) No 800/2013

Aeroplanes operated over areas in which search and rescue would be especially difficult shall be equipped with such signalling devices and life-saving equipment, including means of sustaining life, as may be appropriate to the area overflown.

AMC1 NCO.IDE.A.180 Survival equipment

ED Decision 2014/016/R

GENERAL

(a) Aeroplanes operated across land areas in which search and rescue would be especially difficult should be equipped with the following:

(1) signalling equipment to make the distress signals;

(2) at least one ELT(S) or a PLB, carried by the pilot-in-command or a passenger; and

(3) additional survival equipment for the route to be flown, taking account of the number of persons on board.

(b) The additional survival equipment specified in (a)(3) does not need to be carried when the aeroplane remains within a distance from an area where search and rescue is not especially difficult, that corresponds to:

(1) 120 minutes at one-engine-inoperative (OEI) cruising speed for aeroplanes capable of continuing the flight to an aerodrome with the critical engine(s) becoming inoperative at any point along the route or planned diversion routes; or

(2) 30 minutes at cruising speed for all other aeroplanes.

AMC2 NCO.IDE.A.180 Survival equipment

ED Decision 2014/016/R

ADDITIONAL SURVIVAL EQUIPMENT

(a) The following additional survival equipment should be carried when required:

(1) 500 ml of water for each four, or fraction of four, persons on board;

(2) one knife;

(3) first-aid equipment; and

(4) one set of air/ground codes.

(b) If any item of equipment contained in the above list is already carried on board the aeroplane in accordance with another requirement, there is no need for this to be duplicated.

GM1 NCO.IDE.A.180 Survival equipment

ED Decision 2014/016/R

SIGNALLING EQUIPMENT

The signalling equipment for making distress signals is described in ICAO Annex 2, Rules of the Air.

GM2 NCO.IDE.A.180 Survival equipment

ED Decision 2014/016/R

AREAS IN WHICH SEARCH AND RESCUE WOULD BE ESPECIALLY DIFFICULT

The expression ‘areas in which search and rescue would be especially difficult’ should be interpreted, in this context, as meaning:

(a) areas so designated by the competent authority responsible for managing search and rescue; or

(b) areas that are largely uninhabited and where:

(1) the authority referred to in (a) has not published any information to confirm whether search and rescue would be or would not be especially difficult; and

(2) the authority referred to in (a) does not, as a matter of policy, designate areas as being especially difficult for search and rescue.

NCO.IDE.A.190 Radio communication equipment

Regulation (EU) No 800/2013

(a) Where required by the airspace being flown aeroplanes shall be equipped with radio communication equipment capable of conducting two-way communication with those aeronautical stations and on those frequencies to meet airspace requirements.

(b) Radio communication equipment, if required by (a), shall provide for communication on the aeronautical emergency frequency 121,5 MHz.

(c) When more than one communication equipment unit is required, each shall be independent of the other or others to the extent that a failure in any one will not result in failure of any other.

GM1 NCO.IDE.A.190 Radio communication equipment

ED Decision 2014/016/R

APPLICABLE AIRSPACE REQUIREMENTS

For aeroplanes being operated under European air traffic control, the applicable airspace requirements include the Single European Sky legislation.

NCO.IDE.A.195 Navigation equipment

Regulation (EU) 2019/1384

(a) Aeroplanes operated over routes that cannot be navigated by reference to visual landmarks shall be equipped with any navigation equipment necessary to enable them to proceed in accordance with:

(1) the ATS flight plan; if applicable; and

(2) the applicable airspace requirements.

(b) Aeroplanes shall have sufficient navigation equipment to ensure that, in the event of the failure of one item of equipment at any stage of the flight, the remaining equipment shall allow safe navigation in accordance with (a), or an appropriate contingency action, to be completed safely.

(c) Aeroplanes operated on flights in which it is intended to land in IMC shall be equipped with suitable equipment capable of providing guidance to a point from which a visual landing can be performed. This equipment shall be capable of providing such guidance for each aerodrome at which it is intended to land in IMC and for any designated alternate aerodromes.

(d) For PBN operations the aircraft shall meet the airworthiness certification requirements for the appropriate navigation specification.

(e) Aeroplanes shall be equipped with surveillance equipment in accordance with the applicable airspace requirements.

AMC1 NCO.IDE.A.195 Navigation equipment

ED Decision 2014/016/R

NAVIGATION WITH VISUAL REFERENCE TO LANDMARKS

Where aeroplanes, with the surface in sight, can proceed according to the ATS flight plan by navigation with visual reference to landmarks, no additional equipment is needed to comply with NCO.IDE.A.195(a)(1).

GM1 NCO.IDE.A.195 Navigation equipment

ED Decision 2016/018/R

AIRCRAFT ELIGIBILITY FOR PBN SPECIFICATION NOT REQUIRING SPECIFIC APPROVAL

(a) The performance of the aircraft is usually stated in the AFM/POH.

(b) Where such a reference cannot be found in the AFM/POH, other information provided by the aircraft manufacturer as TC holder, the STC holder or the design organisation having a privilege to approve minor changes may be considered.

(c) The following documents are considered acceptable sources of information:

(1) AFM/POH, supplements thereto, and documents directly referenced in the AFM/POH;

(2) FCOM or similar document;

(3) Service Bulletin or Service Letter issued by the TC holder or STC holder;

(4) approved design data or data issued in support of a design change approval;

(5) any other formal document issued by the TC or STC holders stating compliance with PBN specifications, AMC, Advisory Circulars (AC) or similar documents issued by the State of Design; and

(6) written evidence obtained from the State of Design.

(d) Equipment qualification data, in itself, is not sufficient to assess the PBN capabilities of the aircraft, since the latter depend on installation and integration.

(e) As some PBN equipment and installations may have been certified prior to the publication of the PBN Manual and the adoption of its terminology for the navigation specifications, it is not always possible to find a clear statement of aircraft PBN capability in the AFM/POH. However, aircraft eligibility for certain PBN specifications can rely on the aircraft performance certified for PBN procedures and routes prior to the publication of the PBN Manual.

(f) Below, various references are listed which may be found in the AFM/POH or other acceptable documents (see listing above) in order to consider the aircraft's eligibility for a specific PBN specification if the specific term is not used.

(g) RNAV 5

(1) If a statement of compliance with any of the following specifications or standards is found in the acceptable documentation as listed above, the aircraft is eligible for RNAV 5 operations.

(i) B-RNAV;

(ii) RNAV 1;

(iii) RNP APCH;

(iv) RNP 4;

(v) A-RNP;

(vi) AMC 20-4;

(vii) JAA TEMPORARY GUIDANCE MATERIAL, LEAFLET NO. 2 (TGL 2);

(viii) JAA AMJ 20X2;

(ix) FAA AC 20-130A for en route operations;

(x) FAA AC 20-138 for en route operations; and

(xi) FAA AC 90-96.

(h) RNAV 1/RNAV 2

(1) If a statement of compliance with any of the following specifications or standards is found in the acceptable documentation as listed above, the aircraft is eligible for RNAV 1/RNAV 2 operations.

(i) RNAV 1;

(ii) PRNAV;

(iii) US RNAV type A;

(iv) FAA AC 20-138 for the appropriate navigation specification;

(v) FAA AC 90-100A;

(vi) JAA TEMPORARY GUIDANCE MATERIAL, LEAFLET NO. 10 Rev1 (TGL 10); and

(vii) FAA AC 90-100.

(2) However, if position determination is exclusively computed based on VOR-DME, the aircraft is not eligible for RNAV 1/RNAV 2 operations.

(i) RNP 1/RNP 2 continental

(1) If a statement of compliance with any of the following specifications or standards is found in the acceptable documentation as listed above, the aircraft is eligible for RNP 1/RNP 2 continental operations.

(i) A-RNP;

(ii) FAA AC 20-138 for the appropriate navigation specification; and

(iii) FAA AC 90-105.

(2) Alternatively, if a statement of compliance with any of the following specifications or standards is found in the acceptable documentation as listed above and position determination is primarily based on GNSS, the aircraft is eligible for RNP 1/RNP 2 continental operations. However, in these cases, loss of GNSS implies loss of RNP 1/RNP 2 capability.

(i) JAA TEMPORARY GUIDANCE MATERIAL, LEAFLET NO. 10 (TGL 10) (any revision); and

(ii) FAA AC 90-100.

(j) RNP APCH — LNAV minima

(1) If a statement of compliance with any of the following specifications or standards is found in the acceptable documentation as listed above, the aircraft is eligible for RNP APCH — LNAV operations.

(i) A-RNP;

(ii) AMC 20-27;

(iii) AMC 20-28;

(iv) FAA AC 20-138 for the appropriate navigation specification; and

(v) FAA AC 90-105 for the appropriate navigation specification.

(2) Alternatively, if a statement of compliance with RNP 0.3 GNSS approaches in accordance with any of the following specifications or standards is found in the acceptable documentation as listed above, the aircraft is eligible for RNP APCH — LNAV operations. Any limitation such as 'within the US National Airspace' may be ignored since RNP APCH procedures are assumed to meet the same ICAO criteria around the world.

(i) JAA TEMPORARY GUIDANCE MATERIAL, LEAFLET NO. 3 (TGL 3);

(ii) AMC 20-4;

(iii) FAA AC 20-130A; and

(iv) FAA AC 20-138.

(k) RNP APCH — LNAV/VNAV minima

(1) If a statement of compliance with any of the following specifications or standards is found in the acceptable documentation as listed above, the aircraft is eligible for RNP APCH — LNAV/VNAV operations.

(i) A-RNP;

(ii) AMC 20-27 with Baro VNAV;

(iii) AMC 20-28;

(iv) FAA AC 20-138; and

(v) FAA AC 90-105 for the appropriate navigation specification.

(2) Alternatively, if a statement of compliance with FAA AC 20-129 is found in the acceptable documentation as listed above, and the aircraft complies with the requirements and limitations of EASA SIB 2014-04[1], the aircraft is eligible for RNP APCH — LNAV/VNAV operations. Any limitation such as 'within the US National Airspace' may be ignored since RNP APCH procedures are assumed to meet the same ICAO criteria around the world.

(l) RNP APCH — LPV minima

(1) If a statement of compliance with any of the following specifications or standards is found in the acceptable documentation as listed above, the aircraft is eligible for RNP APCH — LPV operations.

(i) AMC 20-28;

(ii) FAA AC 20-138 for the appropriate navigation specification; and

(iii) FAA AC 90-107.

(2) For aircraft that have a TAWS Class A installed and do not provide Mode-5 protection on an LPV approach, the DH is limited to 250 ft.

(m) RNAV 10

(1) If a statement of compliance with any of the following specifications or standards is found in the acceptable documentation as listed above, the aircraft is eligible for RNAV 10 operations.

[1] http://ad.easa.europa.eu/ad/2014-04

(i) RNP 10;

(ii) FAA AC 20-138 for the appropriate navigation specification;

(iii) AMC 20-12;

(iv) FAA Order 8400.12 (or later revision); and

(v) FAA AC 90-105.

(n) RNP 4

(1) If a statement of compliance with any of the following specifications or standards is found in the acceptable documentation as listed above, the aircraft is eligible for RNP 4 operations.

(i) FAA AC 20-138B or later, for the appropriate navigation specification;

(ii) FAA Order 8400.33; and

(iii) FAA AC 90-105 for the appropriate navigation specification.

(o) RNP 2 oceanic

(1) If a statement of compliance with FAA AC 90-105 for the appropriate navigation specification is found in the acceptable documentation as listed above, the aircraft is eligible for RNP 2 oceanic operations.

(2) If the aircraft has been assessed eligible for RNP 4, the aircraft is eligible for RNP 2 oceanic.

(p) Special features

(1) RF in terminal operations (used in RNP 1 and in the initial segment of the RNP APCH)

(i) If a statement of demonstrated capability to perform an RF leg, certified in accordance with any of the following specifications or standards, is found in the acceptable documentation as listed above, the aircraft is eligible for RF in terminal operations.

(A) AMC 20-26; and

(B) FAA AC 20-138B or later.

(ii) If there is a reference to RF and a reference to compliance with AC 90-105, then the aircraft is eligible for such operations.

(q) Other considerations

(1) In all cases, the limitations in the AFM/POH need to be checked, in particular the use of AP or FD which can be required to reduce the FTE primarily for RNP APCH, RNAV 1, and RNP 1.

(2) Any limitation such as ‘within the US National Airspace’ may be ignored since RNP APCH procedures are assumed to meet the same ICAO criteria around the world.

GM2 NCO.IDE.A.195 Navigation equipment

ED Decision 2016/018/R

GENERAL

(a) The PBN specifications for which the aircraft complies with the relevant airworthiness criteria are set out in the AFM/POH, together with any limitations to be observed.

(b) Because functional and performance requirements are defined for each navigation specification, an aircraft approved for an RNP specification is not automatically approved for all RNAV specifications. Similarly, an aircraft approved for an RNP or RNAV specification having a stringent accuracy requirement (e.g. RNP 0.3 specification) is not automatically approved for a navigation specification having a less stringent accuracy requirement (e.g. RNP 4).

RNP 4

(c) For RNP 4, at least two LRNSs, capable of navigating to RNP 4, and listed in the AFM/POH, may be operational at the entry point of the RNP 4 airspace. If an item of equipment required for RNP 4 operations is unserviceable, then the pilot-in-command may consider an alternate route or diversion for repairs. For multi-sensor systems, the AFM/POH may permit entry if one GNSS sensor is lost after departure, provided one GNSS and one inertial sensor remain available.

AMC1 NCO.IDE.A.195(a) Navigation equipment

ED Decision 2022/012/R

NAVIGATION EQUIPMENT — RNAV SUBSTITUTION

An RNAV system may be used to substitute for conventional navigation aids and radio equipment, without monitoring of the raw data from conventional navigation aids, under the following conditions:

SCOPE OF RNAV SUBSTITUTION

(a) RNAV substitution may be used in all the phases of flight except:

(1) to provide lateral guidance in the FAS of an IAP; and

(2) to substitute for DME, if a DME transceiver is either not installed on the aircraft or found to be unserviceable before flight.

SUITABILITY OF THE RNAV SYSTEM FOR RNAV SUBSTITUTION

(b) The RNAV system should meet:

(1) at least the requirements of (E)TSO-C129/-C196/-C145/-C146 (or later equivalent standards); and

(2) the requirements of NCO.OP.116(a) for RNAV 1, RNP 1 or RNP APCH as regards its installation in the aircraft.

OPERATING PROCEDURE

(c) The pilot-in-command is responsible for:

(1) ensuring that any procedure and waypoints used are retrieved from a navigation database which meets the requirements of NCO.IDE.A.205;

(2) verifying waypoint sequence, reasonableness of track angles, and distances of any overlay procedure used;

(3) applying pre-flight procedures associated with GNSS use (e.g. RAIM check if applicable); and

(4) complying with any limitation on RNAV substitution in the AFM.

PILOT COMPETENCE

(d) The pilot-in-command should be aware of the limitations of RNAV substitution.

AIRSPACE LIMITATIONS

(e) RNAV substitution should not be applied on any procedure where RNAV substitution has been indicated as 'not authorised' by an AIP entry or a notice to airmen (NOTAM).

CONTINGENCY PLANNING

(f) Nothing in this AMC relieves the pilot-in-command from compliance with NCO.IDE.A.195(b) which requires sufficient navigation equipment to ensure that, in the event of the failure of one item of equipment at any stage of the flight, the remaining equipment shall allow safe navigation according to the flight plan, or an appropriate contingency action, to be completed safely.

GM1 NCO.IDE.A.195(a) Navigation equipment

ED Decision 2022/012/R

NAVIGATION EQUIPMENT — SCOPE OF RNAV SUBSTITUTION

(a) Applications of RNAV substitution include use to:

(1) determine aircraft position relative to or distance from a VOR, marker, DME fix or a named fix defined by a VOR radial or NDB bearing;

(2) navigate to or from a VOR, or NDB, except as lateral guidance in the FAS of an IAP;

(3) hold over a VOR, NDB, or DME fix;

(4) fly an arc based upon DME;

(5) fly an overlay of a conventional departure, arrival, approach or route except as lateral guidance in the FAS of an IAP.

(b) RNAV substitution for ADF, marker and VOR may be used where airborne and/or ground-based equipment is not available.

(c) RNAV substitution for DME may be used where the ground-based DME transponder is unserviceable or the airborne DME transceiver is found to be unserviceable in flight. Caution must be exercised by the pilot-in-command when calculating and using GNSS distances to the active waypoint as reference points are often different.

GM2 NCO.IDE.A.195(a) Navigation equipment

ED Decision 2022/012/R

NAVIGATION EQUIPMENT — SUITABILITY OF THE RNAV SYSTEM FOR RNAV SUBSTITUTION

GNSS (E)TSOs are referenced in AMC1 NCO.IDE.A.195(a) since most of the aircraft conducting NCO are equipped with an RNAV stand-alone system which exclusively bases its positioning on GNSS.

GM3 NCO.IDE.A.195(a) Navigation equipment

ED Decision 2022/012/R

NAVIGATION EQUIPMENT — RNAV SUBSTITUTION — OPERATING PROCEDURE

Although RNAV substitution may not be used for lateral guidance in the FAS, this does not preclude the use of the RNAV system to fly the FAS, provided that raw data from the associated conventional navigation aids is monitored.

AMC1 NCO.IDE.A.195(b) Navigation equipment

ED Decision 2022/012/R

APPROPRIATE CONTINGENCY ACTION

An appropriate contingency action is an alternative offered in NCO.IDE.A.195(b) to completion of the planned flight to a safe landing, either at the planned destination or a destination alternate, using normal procedures and using navigation equipment meeting the requirements of NCO.IDE.A.100, installed for redundancy or as a backup.

The contingency action should be considered before flight and take into account the information identified by flight preparation according to NCO.OP.135. It may depend on the flight and availability of navigation solutions (satellites, ground navaids, etc.) and weather conditions (IMC, VMC) along the flight.

The contingency action addresses partial loss of navigation capability. An appropriate contingency action to meet the requirements of NCO.IDE.A.195(b) does not rely on the performance of any function of the item of equipment whose potential failure is being considered. For example, in considering the failure of a VOR/LOC/DME receiver, none of the functions of that receiver should be relied upon in the contingency action.

Examples of contingency actions include:

— seeking navigational assistance from ATS, using communication, navigation and surveillance systems that remain operational, to enable a safe instrument approach or a safe descent to VMC;

— unusually long periods of dead reckoning.

A contingency action is required such that the failure of one item of navigation equipment has a reasonable likelihood of a safe outcome to the flight, consistent with other risks to which the operation is exposed.

NCO.IDE.A.200 Transponder

Regulation (EU) No 800/2013

Where required by the airspace being flown, aeroplanes shall be equipped with a secondary surveillance radar (SSR) transponder with all the required capabilities.

AMC1 NCO.IDE.A.200 Transponder

ED Decision 2014/016/R

GENERAL

(a) The secondary surveillance radar (SSR) transponders of aeroplanes being operated under European air traffic control should comply with any applicable Single European Sky legislation.

(b) If the Single European Sky legislation is not applicable, the SSR transponders should operate in accordance with the relevant provisions of Volume IV of ICAO Annex 10.

NCO.IDE.A.205 Management of aeronautical databases

Regulation (EU) 2016/1119

(a) Aeronautical databases used on certified aircraft system applications shall meet data quality requirements that are adequate for the intended use of the data.

(b) The pilot-in-command shall ensure the timely distribution and insertion of current and unaltered aeronautical databases to the aircraft that require them.

(c) Notwithstanding any other occurrence reporting requirements as defined in Regulation (EU) No 376/2014, the pilot-in-command shall report to the database provider instances of erroneous, inconsistent or missing data that might be reasonably expected to constitute a hazard to flight.

In such cases, the pilot-in-command shall not use the affected data.

AMC1 NCO.IDE.A.205 Management of aeronautical databases

ED Decision 2017/003/R

AERONAUTICAL DATABASES

When the operator of an aircraft uses an aeronautical database that supports an airborne navigation application as a primary means of navigation used to meet the airspace usage requirements, the database provider should be a Type 2 DAT provider certified in accordance with Regulation (EU) 2017/373 or equivalent.

GM1 NCO.IDE.A.205 Management of aeronautical databases

ED Decision 2017/003/R

AERONAUTICAL DATABASE APPLICATIONS

The certification of a Type 2 DAT provider in accordance with Regulation (EU) 2017/373 ensures data integrity and compatibility with the certified aircraft application/equipment.

GM2 NCO.IDE.A.205 Management of aeronautical databases

ED Decision 2017/003/R

TIMELY DISTRIBUTION

The operator should distribute current and unaltered aeronautical databases to all aircraft requiring them in accordance with the validity period of the databases or in accordance with an established procedure if no validity period is defined.

GM3 NCO.IDE.A.205 Management of aeronautical databases

ED Decision 2017/003/R

STANDARDS FOR AERONAUTICAL DATABASES AND DAT PROVIDERS

(a) A 'Type 2 DAT provider' is an organisation as defined in Article 2(5)(b) of Regulation (EU) 2017/373.

(b) Equivalent to a certified 'Type 2 DAT provider' is defined in any Aviation Safety Agreement between the European Union and a third country, including any Technical Implementation Procedures, or any Working Arrangements between EASA and the competent authority of a third country.

SECTION 2 – HELICOPTERS

NCO.IDE.H.100 Instruments and equipment – general

Regulation (EU) 2019/1384

(a) Instruments and equipment required by this Subpart shall be approved in accordance with the applicable airworthiness requirements if they are:

(1) used by the flight crew to control the flight path;

(2) used to comply with NCO.IDE.H.190;

(3) used to comply with NCO.IDE.H.195; or

(4) installed in the helicopter.

(b) The following items, when required under this Subpart, do not need an equipment approval:

(1) independent portable lights;

(2) an accurate time piece;

(3) first-aid kit;

(4) survival and signalling equipment;

(5) sea anchor and equipment for mooring;

(6) child restraint device;

(7) a simple PCDS used by a task specialist as a restraint device.

(c) Instruments and equipment or accessories not required under Annex VII (Part-NCO), as well as any other equipment that is not required under this Regulation, but carried on a flight, shall comply with the following requirements:

(1) the information provided by those instruments, equipment or accessories shall not be used by the flight crew members to comply with Annex II to Regulation (EU) 2018/1139 or points NCO.IDE.H.190 and NCO.IDE.H.195 of Annex VII;

(2) the instruments and equipment shall not affect the airworthiness of the helicopter, even in the case of failures or malfunction.

(d) Instruments and equipment shall be readily operable or accessible from the station where the flight crew member that needs to use it is seated.

(e) All required emergency equipment shall be easily accessible for immediate use.

GM1 NCO.IDE.H.100(a) Instruments and equipment – general

ED Decision 2014/016/R

APPLICABLE AIRWORTHINESS REQUIREMENTS

The applicable airworthiness requirements for approval of instruments and equipment required by this Part are the following:

(a) Regulation (EU) No 748/2012 for helicopters registered in the EU; and

(b) Airworthiness requirements of the State of registry for helicopters registered outside the EU.

GM1 NCO.IDE.H.100(b) Instruments and equipment – general

ED Decision 2014/016/R

REQUIRED INSTRUMENTS AND EQUIPMENT THAT DO NOT NEED TO BE APPROVED IN ACCORDANCE WITH THE APPLICABLE AIRWORTHINESS REQUIREMENTS

The functionality of non-installed instruments and equipment required by this Subpart and that do not need an equipment approval, as listed in NCO.IDE.H.100(b), should be checked against recognised industry standards appropriate to the intended purpose. The operator is responsible for ensuring the maintenance of these instruments and equipment.

GM1 NCO.IDE.H.100(c) Instruments and equipment – general

ED Decision 2014/016/R

NOT REQUIRED INSTRUMENTS AND EQUIPMENT THAT DO NOT NEED TO BE APPROVED IN ACCORDANCE WITH THE APPLICABLE AIRWORTHINESS REQUIREMENTS, BUT ARE CARRIED ON A FLIGHT

(a) The provision of this paragraph does not exempt any installed instrument or item of equipment from complying with the applicable airworthiness requirements. In this case, the installation should be approved as required in the applicable airworthiness requirements and should comply with the applicable Certification Specifications.

(b) The failure of additional non-installed instruments or equipment not required by this Part or by the applicable airworthiness requirements or any applicable airspace requirements should not adversely affect the airworthiness and/or the safe operation of the helicopter. Examples may be the following:

(1) portable electronic flight bag (EFB);

(2) portable electronic devices carried by crew members; and

(3) non-installed passenger entertainment equipment.

NCO.IDE.H.105 Minimum equipment for flight

Regulation (EU) No 800/2013

A flight shall not be commenced when any of the helicopter's instruments, items of equipment or functions required for the intended flight are inoperative or missing, unless:

(a) the helicopter is operated in accordance with the MEL, if established; or

(b) the helicopter is subject to a permit to fly issued in accordance with the applicable airworthiness requirements.

AMC1 NCO.IDE.H.105 Minimum equipment for flight

ED Decision 2021/005/R

MANAGEMENT OF THE STATUS OF CERTAIN INSTRUMENTS, EQUIPMENT OR FUNCTIONS

The operator should control and retain the status of the instruments, equipment or functions required for the intended operation, that are not controlled for the purpose of continuing airworthiness management.

GM1 NCO.IDE.H.105 Minimum equipment for flight

ED Decision 2021/005/R

MANAGEMENT OF THE STATUS OF CERTAIN INSTRUMENTS, EQUIPMENT OR FUNCTIONS

(a) The operator should define responsibilities and procedures to retain and control the status of instruments, equipment or functions required for the intended operation, that are not controlled for the purpose of continuing airworthiness management.

(b) Examples of such instruments, equipment or functions may be, but are not limited to, equipment related to navigation approvals as FM immunity or certain software versions.

NCO.IDE.H.115 Operating lights

Regulation (EU) No 800/2013

Helicopters operated at night shall be equipped with:

(a) an anti-collision light system;

(b) navigation/position lights;

(c) a landing light;

(d) lighting supplied from the helicopter's electrical system to provide adequate illumination for all instruments and equipment essential to the safe operation of the helicopter;

(e) lighting supplied from the helicopter's electrical system to provide illumination in all passenger compartments;

(f) an independent portable light for each crew member station; and

(g) lights to conform with the International Regulations for Preventing Collisions at Sea if the helicopter is amphibious.

AMC1 NCO.IDE.H.115 Operating lights

ED Decision 2014/016/R

LANDING LIGHT

The landing light should be trainable, at least in the vertical plane, or optionally be an additional fixed light or lights positioned to give a wide spread of illumination.

NCO.IDE.H.120 Operations under VFR – flight and navigational instruments and associated equipment

Regulation (EU) 2019/1394 2019/1394

(a) Helicopters operated under VFR by day shall be equipped with a means of measuring and displaying the following:

(1) magnetic heading;

(2) time in hours, minutes and seconds;

(3) barometric altitude;

(4) indicated airspeed; and

(5) slip.

(b) Helicopters operated under VMC at night, or when the visibility is less than 1 500 m, or in conditions where the helicopter cannot be maintained in a desired flight path without reference to one or more additional instruments, shall be, in addition to (a), equipped with:

(1) a means of measuring and displaying the following:

(i) attitude;

(ii) vertical speed; and

(iii) stabilised heading; and

(2) a means of indicating when the supply of power to the gyroscopic instruments is not adequate.

(c) Helicopters operated when the visibility is less than 1 500 m, or in conditions where the helicopter cannot be maintained in a desired flight path without reference to one or more additional instruments, shall be, in addition to (a) and (b), equipped with a means of preventing malfunction of the airspeed indicating system required in (a)(4) due to condensation or icing.

AMC1 NCO.IDE.H.120&NCO.IDE.H.125 Operations under VFR & operations under IFR – flight and navigational instruments and associated equipment

ED Decision 2014/016/R

INTEGRATED INSTRUMENTS

(a) Individual equipment requirements may be met by combinations of instruments, by integrated flight systems or by a combination of parameters on electronic displays. The information so available to each required pilot should not be less than that required in the applicable operational requirements, and the equivalent safety of the installation should be approved during type certification of the helicopter for the intended type of operation.

(b) The means of measuring and indicating turn and slip, helicopter attitude and stabilised helicopter heading may be met by combinations of instruments or by integrated flight director systems, provided that the safeguards against total failure, inherent in the three separate instruments, are retained.

AMC1 NCO.IDE.H.120(a)(1)&NCO.IDE.H.125(a)(1) Operations under VFR & operations under IFR – flight and navigational instruments and associated equipment

ED Decision 2014/016/R

MEANS OF MEASURING AND DISPLAYING MAGNETIC HEADING

The means of measuring and displaying magnetic direction should be a magnetic compass or equivalent.

AMC1 NCO.IDE.H.120(a)(2)&NCO.IDE.H.125(a)(2) Operations under VFR & operations under IFR – flight and navigational instruments and associated equipment

ED Decision 2014/016/R

MEANS OF MEASURING AND DISPLAYING THE TIME

A means of measuring and displaying the time in hours, minutes and seconds may be a wrist watch capable of the same functions.

AMC1 NCO.IDE.H.120(a)(3)&NCO.IDE.H.125(a)(3) Operations under VFR & operations under IFR – flight and navigational instruments and associated equipment

ED Decision 2014/016/R

CALIBRATION OF THE MEANS OF MEASURING AND DISPLAYING PRESSURE ALTITUDE

The instrument measuring and displaying pressure altitude should be of a sensitive type calibrated in feet (ft), with a sub-scale setting, calibrated in hectopascals/millibars, adjustable for any barometric pressure likely to be set during flight.

AMC1 NCO.IDE.H.120(a)(5) Operations under VFR – flight and navigational instruments and associated equipment

ED Decision 2014/016/R

SLIP

The means of measuring and displaying slip may be a slip string for operations under VFR.

NCO.IDE.H.125 Operations under IFR – flight and navigational instruments and associated equipment

Regulation (EU) 2019/1384

Helicopters operated under IFR shall be equipped with:

(a) a means of measuring and displaying the following:

(1) magnetic heading;

(2) time in hours, minutes and seconds;

(3) barometric altitude;

(4) indicated airspeed;

(5) vertical speed;

(6) slip;

(7) attitude;

(8) stabilised heading; and

(9) outside air temperature;

(b) a means of indicating when the supply of power to the gyroscopic instruments is not adequate;

(c) a means of preventing malfunction of the airspeed indicating system required by (a)(4) due to condensation or icing; and

(d) an additional means of measuring and displaying attitude as a standby instrument.

GM1 NCO.IDE.H.125(a)(3) Operations under IFR – flight and navigational instruments and associated equipment

ED Decision 2014/016/R

ALTIMETERS

Altimeters with counter drum-pointer or equivalent presentation are considered to be less susceptible to misinterpretation for helicopters operating above 10 000 ft.

AMC1 NCO.IDE.H.120(a)(4)&NCO.IDE.H.125(a)(4) Operations under VFR & operations under IFR – flight and navigational instruments and associated equipment

ED Decision 2015/004/R

CALIBRATION OF THE INSTRUMENT INDICATING AIRSPEED

(a) The instrument indicating airspeed should be calibrated in knots (kt).

(b) In the case of helicopters with an MCTOM below 2 000 kg, calibration in kilometres per hour (kph) or in miles per hour (mph) is acceptable when such units are used in the AFM.

AMC1 NCO.IDE.H.120(b)(1)(iii)&NCO.IDE.H.125(a)(8) Operations under VFR & operations under IFR – flight and navigational instruments and associated equipment

ED Decision 2014/016/R

STABILISED HEADING

Stabilised direction should be achieved for VFR flights by a gyroscopic direction indicator, whereas for IFR flights, this should be achieved through a magnetic gyroscopic direction indicator.

AMC1 NCO.IDE.H.120(c)&NCO.IDE.H.125(c) Operations under VFR & Operations under IFR – flight and navigational instruments and associated equipment

ED Decision 2014/016/R

MEANS OF PREVENTING MALFUNCTION DUE TO CONDENSATION OR ICING

The means of preventing malfunction due to either condensation or icing of the airspeed indicating system should be a heated pitot tube or equivalent.

AMC1 NCO.IDE.H.125(a)(9) Operations under IFR – flight and navigational instruments and associated equipment

ED Decision 2014/016/R

MEANS OF DISPLAYING OUTSIDE AIR TEMPERATURE

(a) The means of displaying outside air temperature should be calibrated in degrees Celsius.

(b) In the case of helicopters with a maximum certified take-off mass (MCTOM) below 2 000 kg, calibration in degrees Fahrenheit is acceptable, when such unit is used in the AFM.

(c) The means of displaying outside air temperature may be an air temperature indicator that provides indications that are convertible to outside air temperature.

NCO.IDE.H.126 Additional equipment for single pilot operations under IFR

Regulation (EU) No 800/2013

Helicopters operated under IFR with a single pilot shall be equipped with an autopilot with at least altitude hold and heading mode.

NCO.IDE.H.135 Flight crew interphone system

Regulation (EU) No 800/2013

Helicopters operated by more than one flight crew member shall be equipped with a flight crew interphone system, including headsets and microphones for use by all flight crew members.

AMC1 NCO.IDE.H.135 Flight crew interphone system

ED Decision 2014/016/R

GENERAL

(a) The flight crew interphone system should not be of a handheld type.

(b) A headset consists of a communication device which includes two earphones to receive and a microphone to transmit audio signals to the helicopter's communication system. To comply with the minimum performance requirements, the earphones and microphone should match the communication system's characteristics and the flight crew compartment environment. The headset should be adequately adjustable in order to fit the pilot's head. Headset boom microphones should be of the noise cancelling type.

(c) If the intention is to utilise noise cancelling earphones, the pilot-in-command should ensure that the earphones do not attenuate any aural warnings or sounds necessary for alerting the flight crew on matters related to the safe operation of the helicopter.

GM1 NCO.IDE.H.135 Flight crew interphone system

ED Decision 2014/016/R

HEADSET

The term 'headset' includes any aviation helmet incorporating headphones and microphone worn by a flight crew member.

NCO.IDE.H.140 Seats, seat safety belts, restraint systems and child restraint devices

Regulation (EU) 2019/1384

(a) Helicopters shall be equipped with:

(1) a seat or berth for each person on board who is aged 24 months or more, or a station for each crew member or task specialist on board;

(2) a seat belt on each passenger seat and restraining belts for each berth, and restraint devices for each station;

(3) for helicopters first issued with an individual CofA after 31 December 2012, a seat belt with an upper torso restraint system for each passenger who is aged 24 months or more;

(4) a child restraint device for each person on board younger than 24 months; and

(5) a seat belt with upper torso restraint system incorporating a device that will automatically restrain the occupant's torso in the event of rapid deceleration on each flight crew seat.

(b) A seat belt with upper torso restraint system shall have a single point release.

AMC1 NCO.IDE.H.140 Seats, seat safety belts, restraint systems and child restraint devices

ED Decision 2019/019/R

CHILD RESTRAINT DEVICES (CRDs)

(a) A CRD is considered to be acceptable if:

(1) it is a supplementary loop belt manufactured with the same techniques and the same materials of the approved safety belts; or

(2) it complies with (b).

(b) Provided the CRD can be installed properly on the respective helicopter seat, the following CRDs are considered acceptable:

(1) CRDs approved for use in aircraft according to the European Technical Standard Order ETSO-C100c on Aviation Child Safety Device (ACSD);

(2) CRDs approved by EASA through a Type Certificate or Supplemental Type Certificate;

(3) Child seats approved for use in motor vehicles on the basis of the technical standard specified in (i). The child seat must be also approved for use in aircraft on the basis of the technical standard specified in either point (ii) or point (iii):

(i) UN Standard ECE R44-04 (or 03), or ECE R129 bearing the respective 'ECE R' label; and

(ii) German 'Qualification Procedure for Child Restraint Systems for Use in Aircraft' (TÜV Doc.: TÜV/958-01/2001) bearing the label 'For Use in Aircraft'; or

(iii) Other technical standard acceptable to the competent authority. The child seat should hold a qualification sign that it can be used in aircraft.

(4) Child seats approved for use in motor vehicles and aircraft according to Canadian CMVSS 213/213.1 bearing the respective label;

(5) Child seats approved for use in motor vehicles and aircraft according to US FMVSS No 213 and bearing one or two labels displaying the following two sentences:

(i) 'THIS CHILD RESTRAINT SYSTEM CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE SAFETY STANDARDS'; and

(ii) in red letters 'THIS RESTRAINT IS CERTIFIED FOR USE IN MOTOR VEHICLES AND AIRCRAFT';

(6) Child seats approved for use in motor vehicles and aircraft according to Australia/New Zealand's technical standard AS/NZS 1754:2013 bearing the green part on the label displaying 'For Use in Aircraft'; and

(7) CRDs manufactured and tested according to other technical standards equivalent to those listed above. The devices should be marked with an associated qualification sign, which shows the name of the qualification organisation and a specific identification number, related to the associated qualification project. The qualifying organisation should be a competent and independent organisation that is acceptable to the competent authority.

(c) Location

(1) Forward-facing child seats may be installed on both forward- and rearward-facing passenger seats, but only when fitted in the same direction as the passenger seat on which they are positioned. Rearward-facing child seats should only be installed on forward-facing passenger seats. A child seat may not be installed within the radius of action of an airbag unless it is obvious that the airbag is de-activated or it can be demonstrated that there is no negative impact from the airbag.

(2) An infant/child in a CRD should be located in the vicinity of a floor level exit.

(3) An infant/child in a CRD should not hinder evacuation for any passenger.

(d) Installation

(1) CRDs tested and approved for use in aircraft should only be installed on a suitable passenger seat by the method shown in the manufacturer's instructions provided with each CRD and with the type of connecting device they are approved for the installation in aircraft. CRDs designed to be installed only by means of rigid bar lower anchorages (ISOFIX or equivalent) should only be used on passenger seats equipped with such connecting devices and should not be secured by passenger seat lap belt.

(2) All safety and installation instructions should be followed carefully by the responsible person accompanying the infant/child. Operators should prohibit the use of a CRD not installed on the passenger seat according to the manufacturer's instructions or not approved for use in aircraft.

(3) If a forward-facing child seat with a rigid backrest is to be fastened by a seat lap belt, the restraint device should be fastened when the backrest of the passenger seat on which it rests is in a reclined position. Thereafter, the backrest is to be positioned upright. This procedure ensures better tightening of the child seat on the aircraft seat if the aircraft seat is reclinable.

(4) The buckle of the adult safety belt should be easily accessible for both opening and closing, and should be in line with the seat belt halves (not canted) after tightening.

(5) Forward-facing restraint devices with an integral harness must not be installed such that the adult safety belt is secured over the infant.

(e) Operation

(1) Each CRD should remain secured to a passenger seat during all phases of flight, unless it is properly stowed when not in use.

(2) Where a child seat is adjustable in recline, it should be in an upright position for all occasions when passenger restraint devices are required.

AMC2 NCO.IDE.H.140 Seats, seat safety belts, restraint systems and child restraint devices

ED Decision 2014/016/R

UPPER TORSO RESTRAINT SYSTEM

The following systems are deemed to be compliant with the requirement for an upper torso restraint system:

(a) a seat belt with a diagonal shoulder strap;

(b) a restraint system having a seat belt and two shoulder straps that may be used independently;

(c) a restraint system having a seat belt, two shoulder straps and additional straps that may be used independently.

SEAT BELT

A seat belt with diagonal shoulder strap (three anchorage points) is deemed to be compliant with the requirement for a seat belt (two anchorage points).

NCO.IDE.H.145 First-aid kit

Regulation (EU) No 800/2013

(a) Helicopters shall be equipped with a first-aid kit.

(b) The first-aid kit shall be:

(1) readily accessible for use; and

(2) kept up-to-date.

AMC1 NCO.IDE.H.145 First-aid kit

ED Decision 2021/005/R

CONTENT OF FIRST-AID KITS

(a) First-aid kits should be equipped with appropriate and sufficient medications and instrumentation. However, these kits should be supplemented by the operator according to the characteristics of the operation (scope of operation, flight duration, number and demographics of passengers, etc.).

(b) The following should be included in the FAKs:

(1) bandages (assorted sizes, including a triangular bandage),

(2) burns dressings (large and small),

(3) wound dressings (large and small),

(4) adhesive dressings (assorted sizes),

(5) antiseptic wound cleaner,

(6) safety scissors,

(7) disposable gloves,

(8) disposable resuscitation aid, and

(9) surgical masks.

AMC2 NCO.IDE.H.145 First-aid kit

ED Decision 2014/016/R

MAINTENANCE OF FIRST-AID KIT

To be kept up-to-date, the first-aid kit should be:

(a) inspected periodically to confirm, to the extent possible, that contents are maintained in the condition necessary for their intended use;

(b) replenished at regular intervals, in accordance with instructions contained on their labels, or as circumstances warrant; and

(c) replenished after use in-flight at the first opportunity where replacement items are available.

GM1 NCO.IDE.H.145 First-aid kit

ED Decision 2021/005/R

LOCATION AND USE

The location of the first-aid kit is normally indicated using internationally recognisable signs.

The FAK ‘should be readily accessible for use’ in helicopter operations should be understood as the first-aid kit being either accessible in flight or immediately after landing.

In some operations, it is not practicable to use the first-aid kit during flight. Therefore, the first-aid kit can be carried in the cargo compartment, where it will be easily accessible for use as soon as the aircraft has landed, when the following conditions are met:

(a) precautionary landing sites are available;

(b) the lack of cabin space is such that movement or use of the first-aid kit is impaired; and

(c) the installation of the first-aid kit in the cabin is not practicable.

GM2 NCO.IDE.H.145 First-aid kit

ED Decision 2021/005/R

CONTENT OF FIRST-AID KITS

The operator may supplement first-aid kits according to the characteristics of the operation based on a risk assessment. The assessment does not require an approval by the competent authority.

NCO.IDE.H.155 Supplemental oxygen – non-pressurised helicopters

Regulation (EU) 2016/1119

Non-pressurised helicopters operated when an oxygen supply is required in accordance with NCO.OP.190 shall be equipped with oxygen storage and dispensing apparatus capable of storing and dispensing the required oxygen supplies.

AMC1 NCO.IDE.H.155 Supplemental oxygen – non-pressurised helicopters

ED Decision 2014/016/R

DETERMINATION OF OXYGEN

The amount of oxygen should be determined on the basis of cabin pressure altitude and flight duration, consistent with the operating procedures, including emergency procedures, established for each operation and the routes to be flown as specified in the AFM.

AMC2 NCO.IDE.H.155 Supplemental oxygen supply – non-pressurised helicopters

ED Decision 2016/018/R

OXYGEN SUPPLY

The need for oxygen supply, when required by NCO.OP.190, may be met either by means of installed equipment or portable equipment.

NCO.IDE.H.160 Hand fire extinguishers

Regulation (EU) No 800/2013

(a) Helicopters, except ELA2 helicopters, shall be equipped with at least one hand fire extinguisher:

(1) in the flight crew compartment; and

(2) in each passenger compartment that is separate from the flight crew compartment, except if the compartment is readily accessible to the flight crew.

(b) The type and quantity of extinguishing agent for the required fire extinguishers shall be suitable for the type of fire likely to occur in the compartment where the extinguisher is intended to be used and to minimise the hazard of toxic gas concentration in compartments occupied by persons.

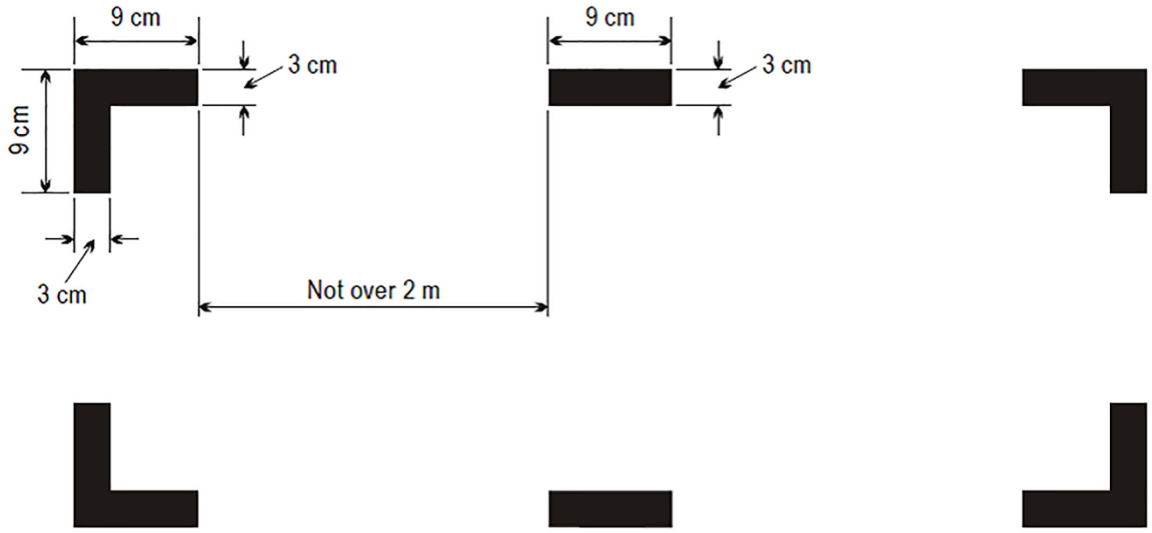
NCO.IDE.H.165 Marking of break-in points

Regulation (EU) No 800/2013

If areas of the helicopter's fuselage suitable for break-in by rescue crews in an emergency are marked, such areas shall be marked as shown in Figure 1.

Figure 1

Marking of break-in points



AMC1 NCO.IDE.H.165 Marking of break-in points

ED Decision 2014/016/R

MARKINGS — COLOUR AND CORNERS

(a) The colour of the markings should be red or yellow and, if necessary, should be outlined in white to contrast with the background.

(b) If the corner markings are more than 2 m apart, intermediate lines 9 cm x 3 cm should be inserted so that there is no more than 2 m between adjacent markings.

NCO.IDE.H.170 Emergency locator transmitter (ELT)

Regulation (EU) No 800/2013

(a) Helicopters certified for a maximum passenger seating configuration above six shall be equipped with:

(1) an automatic ELT; and

(2) one survival ELT (ELT(S)) in a life-raft or life-jacket when the helicopter is operated at a distance from land corresponding to more than 3 minutes flying time at normal cruising speed.

(b) Helicopters certified for a maximum passenger seating configuration of six or less shall be equipped with an ELT(S) or a personal locator beacon (PLB), carried by a crew member or a passenger.

(c) ELTs of any type and PLBs shall be capable of transmitting simultaneously on 121,5 MHz and 406 MHz.

AMC1 NCO.IDE.H.170 Emergency locator transmitter (ELT)

ED Decision 2014/016/R

BATTERIES

(a) All batteries used in ELTs or PLBs should be replaced (or recharged, if the battery is rechargeable) when the equipment has been in use for more than 1 cumulative hour or in the following cases:

(1) Batteries specifically designed for use in ELTs and having an airworthiness release certificate (EASA Form 1 or equivalent) should be replaced (or recharged, if the battery is rechargeable) before the end of their useful life in accordance with the maintenance instructions applicable to the ELT.

(2) Standard batteries manufactured in accordance with an industry standard and not having an airworthiness release certificate (EASA Form 1 or equivalent), when used in ELTs should be replaced (or recharged, if the battery is rechargeable) when 50 % of their useful life (or for rechargeable, 50 % of their useful life of charge), as established by the battery manufacturer, has expired.

(3) All batteries used in PLBs should be replaced (or recharged, if the battery is rechargeable) when 50 % of their useful life (or for rechargeable, 50 % of their useful life of charge), as established by the battery manufacturer, has expired.

(4) The battery useful life (or useful life of charge) criteria in (1),(2) and (3) do not apply to batteries (such as water-activated batteries) that are essentially unaffected during probable storage intervals.

(b) The new expiry date for a replaced (or recharged) battery should be legibly marked on the outside of the equipment.

AMC2 NCO.IDE.H.170 Emergency locator transmitter (ELT)

ED Decision 2021/008/R

TYPES OF ELT AND GENERAL TECHNICAL SPECIFICATIONS

(a) The ELT required by this provision should be one of the following:

(1) Automatic fixed (ELT(AF)). An automatically activated ELT that is permanently attached to an aircraft and is designed to aid SAR teams in locating the crash site.

(2) Automatic portable (ELT(AP)). An automatically activated ELT that is rigidly attached to an aircraft before a crash, but is readily removable from the aircraft after a crash. It functions as an ELT during the crash sequence. If the ELT does not employ an integral antenna, the aircraft-mounted antenna may be disconnected and an auxiliary antenna (stored on the ELT case) attached to the ELT. The ELT can be tethered to a survivor or a life-raft. This type of ELT is intended to aid SAR teams in locating the crash site or survivor(s).

(3) Automatic deployable (ELT(AD)). An ELT that is rigidly attached to the aircraft before the crash and that is automatically deployed and activated by an impact, and, in some cases, also by water sensors. This type of ELT should float in water and is intended to aid SAR

teams in locating the crash site. The ELT(AD) may be either a stand-alone beacon or an inseparable part of a deployable recorder.

(4) Survival ELT (ELT(S)). An ELT that is removable from an aircraft, stowed so as to facilitate its ready use in an emergency, and manually activated by a survivor. An ELT(S) may be activated manually or automatically (e.g. by water activation). It should be designed either to be tethered to a life-raft or a survivor. A water-activated ELT(S) is not an ELT(AP).

(b) To minimise the possibility of damage in the event of crash impact, the automatic ELT should be rigidly fixed to the aircraft structure, as far aft as is practicable, with its antenna and connections arranged so as to maximise the probability of the signal being transmitted after a crash.

(c) Any ELT carried should operate in accordance with the relevant provisions of ICAO Annex 10, Volume III, and should be registered with the national agency responsible for initiating search and rescue or other nominated agency.

AMC3 NCO.IDE.H.170 Emergency locator transmitter (ELT)

ED Decision 2014/016/R

PLB TECHNICAL SPECIFICATIONS

(a) A personal locator beacon (PLB) should have a built-in GNSS receiver with a cosmicheskaya sistyema poiska avariynich sudov — search and rescue satellite-aided tracking (COSPAS-SARSAT) type approval number. However, devices with a COSPAS-SARSAT number belonging to series 700 are excluded as this series of numbers identifies the special-use beacons not meeting all the technical requirements and all the tests specified by COSPAS-SARSAT.

(b) Any PLB carried should be registered with the national agency responsible for initiating search and rescue or other nominated agency.

AMC4 NCO.IDE.H.170 Emergency locator transmitter (ELT)

ED Decision 2014/016/R

BRIEFING ON PLB USE

When a PLB is carried by a passenger, he/she should be briefed on its characteristics and use by the pilot-in-command before the flight.

GM1 NCO.IDE.H.170 Emergency locator transmitter (ELT)

ED Decision 2021/008/R

TERMINOLOGY

GM1 CAT.IDE.H.280 contains explanations of terms used in point NCO.IDE.H.170 and in the related AMC.

NCO.IDE.H.175 Flight over water

Regulation (EU) No 800/2013

(a) Helicopters shall be equipped with a life-jacket for each person on board or equivalent individual flotation device for each person on board younger than 24 months, which shall be worn or stowed in a position that is readily accessible from the seat or berth of the person for whose use it is provided, when:

(1) flying over water beyond autorotational distance from land where in case of the critical engine failure, the helicopter is not able to sustain level flight; or

(2) flying over water at a distance of land corresponding to more than 10 minutes flying at normal cruising speed, where in case of the critical engine failure, the helicopter is able to sustain level flight; or

(3) taking off or landing at an aerodrome/operating site where the take-off or approach path is over water.

(b) Each life-jacket or equivalent individual flotation device shall be equipped with a means of electric illumination for the purpose of facilitating the location of persons.

(c) The pilot-in-command of a helicopter operated on a flight over water at a distance from land corresponding to more than 30 minutes flying time at normal cruising speed or 50 NM, whichever is less, shall determine the risks to survival of the occupants of the helicopter in the event of a ditching, based on which he/she shall determine the carriage of:

(1) equipment for making the distress signals;

(2) life-rafts in sufficient numbers to carry all persons on board, stowed so as to facilitate their ready use in emergency; and

(3) life-saving equipment, to provide the means of sustaining life, as appropriate to the flight to be undertaken.

(d) The pilot-in-command shall determine the risks to survival of the occupants of the helicopter in the event of a ditching, when deciding if the life-jackets required in (a) shall be worn by all occupants.

AMC1 NCO.IDE.H.175 Flight over water

ED Decision 2014/016/R

ACCESSIBILITY OF LIFE-JACKETS

The life-jacket, if not worn, should be accessible from the seat or berth of the person for whose use it is provided, with a safety belt or a restraint system fastened.

RISK ASSESSMENT

(a) When conducting the risk assessment, the pilot-in-command should base his/her decision, as far as is practicable, on the Implementing Rules and AMCs applicable to the operation of the helicopter.

(b) The pilot-in-command should, for determining the risk, take the following operating environment and conditions into account:

(1) sea state;

(2) sea and air temperatures;

(3) the distance from land suitable for making an emergency landing; and

(4) the availability of search and rescue facilities.

GM1 NCO.IDE.H.175 Flight over water

ED Decision 2014/016/R

SEAT CUSHIONS

Seat cushions are not considered to be flotation devices.

NCO.IDE.H.180 Survival equipment

Regulation (EU) No 800/2013

Helicopters, operated over areas in which search and rescue would be especially difficult, shall be equipped with such signalling devices and life-saving equipment, including means of sustaining life, as may be appropriate to the area overflown.

AMC1 NCO.IDE.H.180 Survival equipment

ED Decision 2014/016/R

GENERAL

Helicopters operated across areas in which search and rescue would be especially difficult should be equipped with the following:

(a) signalling equipment to make the distress signals;

(b) at least one ELT(S) or a PLB, carried by the pilot-in-command or a passenger; and

(c) additional survival equipment for the route to be flown taking account of the number of persons on board.

AMC2 NCO.IDE.H.180 Survival equipment

ED Decision 2014/016/R

ADDITIONAL SURVIVAL EQUIPMENT

(a) The following additional survival equipment should be carried when required:

(1) 500 ml of water for each four, or fraction of four, persons on board;

(2) one knife;

(3) first-aid equipment; and

(4) one set of air/ground codes.

(b) If any item of equipment contained in the above list is already carried on board the helicopter in accordance with another requirement, there is no need for this to be duplicated.

GM1 NCO.IDE.H.180 Survival equipment

ED Decision 2014/016/R

SIGNALLING EQUIPMENT

The signalling equipment for making distress signals is described in ICAO Annex 2, Rules of the Air.

GM2 NCO.IDE.H.180 Survival equipment

ED Decision 2014/016/R

AREAS IN WHICH SEARCH AND RESCUE WOULD BE ESPECIALLY DIFFICULT

The expression 'areas in which search and rescue would be especially difficult' should be interpreted, in this context, as meaning:

(a) areas so designated by the competent authority responsible for managing search and rescue; or

(b) areas that are largely uninhabited and where:

(1) the authority referred to in (a) has not published any information to confirm whether search and rescue would be or would not be especially difficult; and

(2) the authority referred to in (a) does not, as a matter of policy, designate areas as being especially difficult for search and rescue.

NCO.IDE.H.185 All helicopters on flights over water – ditching

Regulation (EU) 2019/1384

Helicopters flying over water in a hostile environment beyond a distance of 50 NM from land shall be either of the following:

(a) designed for landing on water in accordance with the relevant certification specifications;

(b) certified for ditching in accordance with the relevant certification specifications;

(c) fitted with emergency flotation equipment.

AMC1 NCO.IDE.H.185 All helicopters on flights over water – ditching

ED Decision 2016/022/R

The considerations of AMC1 SPA.HOFO.165(d) should apply in respect of emergency flotation equipment.

NCO.IDE.H.190 Radio communication equipment

Regulation (EU) No 800/2013

(a) Where required by the airspace being flown helicopters shall be equipped with radio communication equipment capable of conducting two-way communication with those aeronautical stations and on those frequencies to meet airspace requirements.

(b) Radio communication equipment, if required by (a), shall provide for communication on the aeronautical emergency frequency 121,5 MHz.

(c) When more than one communications equipment unit is required, each shall be independent of the other or others to the extent that a failure in any one will not result in failure of any other.

(d) When a radio communication system is required, and in addition to the flight crew interphone system required in NCO.IDE.H.135, helicopters shall be equipped with a transmit button on the flight controls for each required pilot and/or crew member at his/her working station.

NCO.IDE.H.195 Navigation equipment

Regulation (EU) 2019/1384

(a) Helicopters operated over routes that cannot be navigated by reference to visual landmarks shall be equipped with navigation equipment that will enable them to proceed in accordance with:

(1) the ATS flight plan, if applicable; and

(2) the applicable airspace requirements.

(b) Helicopters shall have sufficient navigation equipment to ensure that, in the event of the failure of one item of equipment at any stage of the flight, the remaining equipment shall allow safe navigation in accordance with (a), or an appropriate contingency action, to be completed safely.

(c) Helicopters operated on flights in which it is intended to land in IMC shall be equipped with navigation equipment capable of providing guidance to a point from which a visual landing can be performed. This equipment shall be capable of providing such guidance for each aerodrome at which is intended to land in IMC and for any designated alternate aerodromes.

(d) For PBN operations the aircraft shall meet the airworthiness certification requirements for the appropriate navigation specification.

(e) Helicopters shall be equipped with surveillance equipment in accordance with the applicable airspace requirements.

AMC1 NCO.IDE.H.195 Navigation equipment

ED Decision 2014/016/R

NAVIGATION WITH VISUAL REFERENCE TO LANDMARKS

Where helicopters, with the surface in sight, can proceed according to the ATS flight plan by navigation with visual reference to landmarks, no additional equipment is needed to comply NCO.IDE.H.195(a)(1).

GM1 NCO.IDE.H.195 Navigation equipment

ED Decision 2014/016/R

APPLICABLE AIRSPACE REQUIREMENTS

For helicopters being operated under European air traffic control, the applicable airspace requirements include the Single European Sky legislation.

GM2 NCO.IDE.H.195 Navigation equipment

ED Decision 2016/018/R

AIRCRAFT ELIGIBILITY FOR PBN SPECIFICATION NOT REQUIRING SPECIFIC APPROVAL

(a) The performance of the aircraft is usually stated in the AFM/POH.

(b) Where such a reference cannot be found in the AFM/POH, other information provided by the aircraft manufacturer as TC holder, the STC holder or the design organisation having a privilege to approve minor changes may be considered.

(c) The following documents are considered acceptable sources of information:

(1) AFM/POH, supplements thereto, and documents directly referenced in the AFM/POH;

(2) FCOM or similar document;

(3) Service Bulletin or Service Letter issued by the TC holder or STC holder;

(4) approved design data or data issued in support of a design change approval;

(5) any other formal document issued by the TC or STC holders stating compliance with PBN specifications, AMC, Advisory Circulars (AC) or similar documents issued by the State of Design; and

(6) written evidence obtained from the State of Design.

(d) Equipment qualification data, in itself, is not sufficient to assess the PBN capabilities of the aircraft, since the latter depend on installation and integration.

(e) As some PBN equipment and installations may have been certified prior to the publication of the PBN Manual and the adoption of its terminology for the navigation specifications, it is not always possible to find a clear statement of aircraft PBN capability in the AFM/POH. However, aircraft eligibility for certain PBN specifications can rely on the aircraft performance certified for PBN procedures and routes prior to the publication of the PBN Manual.

(f) Below, various references are listed which may be found in the AFM/POH or other acceptable documents (see listing above) in order to consider the aircraft's eligibility for a specific PBN specification if the specific term is not used.

(g) RNAV 5

(1) If a statement of compliance with any of the following specifications or standards is found in the acceptable documentation as listed above, the aircraft is eligible for RNAV 5 operations.

(i) B-RNAV;

(ii) RNAV 1;

(iii) RNP APCH;

(iv) RNP 4;

(v) A-RNP;

(vi) AMC 20-4;

(vii) JAA TEMPORARY GUIDANCE MATERIAL, LEAFLET NO. 2 (TGL 2)

(viii) JAA AMJ 20X2;

(ix) FAA AC 20-130A for en route operations;

(x) FAA AC 20-138 for en route operations; and

(xi) FAA AC 90-96.

(h) RNAV 1/RNAV 2

(1) If a statement of compliance with any of the following specifications or standards is found in the acceptable documentation as listed above, the aircraft is eligible for RNAV 1/RNAV 2 operations.

(i) RNAV 1;

(ii) PRNAV;

(iii) US RNAV type A;

(iv) FAA AC 20-138 for the appropriate navigation specification;

(v) FAA AC 90-100A;

(vi) JAA TEMPORARY GUIDANCE MATERIAL, LEAFLET NO. 10 Rev1 (TGL 10); and

(vii) FAA AC 90-100.

(2) However, if position determination is exclusively computed based on VOR-DME, the aircraft is not eligible for RNAV 1/RNAV 2 operations.

(i) RNP 1/RNP 2 continental

(1) If a statement of compliance with any of the following specifications or standards is found in the acceptable documentation as listed above, the aircraft is eligible for RNP 1/RNP 2 continental operations.

(i) A-RNP;

(ii) FAA AC 20-138 for the appropriate navigation specification; and

(iii) FAA AC 90-105.

(2) Alternatively, if a statement of compliance with any of the following specifications or standards is found in the acceptable documentation as listed above and position determination is primarily based on GNSS, the aircraft is eligible for RNP 1/RNP 2 continental operations. However, in these cases, loss of GNSS implies loss of RNP 1/RNP 2 capability.

(i) JAA TEMPORARY GUIDANCE MATERIAL, LEAFLET NO. 10 (TGL 10) (any revision); and

(ii) FAA AC 90-100.

(j) RNP APCH — LNAV minima

(1) If a statement of compliance with any of the following specifications or standards is found in the acceptable documentation as listed above, the aircraft is eligible for RNP APCH — LNAV operations.

(i) A-RNP;

(ii) AMC 20-27;

(iii) AMC 20-28;

(iv) FAA AC 20-138 for the appropriate navigation specification; and

(v) FAA AC 90-105 for the appropriate navigation specification.

(2) Alternatively, if a statement of compliance with RNP 0.3 GNSS approaches in accordance with any of the following specifications or standards is found in the acceptable documentation as listed above, the aircraft is eligible for RNP APCH — LNAV operations. Any limitation such as ‘within the US National Airspace’ may be ignored since RNP APCH procedures are assumed to meet the same ICAO criteria around the world.

(i) JAA TEMPORARY GUIDANCE MATERIAL, LEAFLET NO. 3 (TGL 3);

(ii) AMC 20-4;

(iii) FAA AC 20-130A; and

(iv) FAA AC 20-138.

(k) RNP APCH — LNAV/VNAV minima

(1) If a statement of compliance with any of the following specifications or standards is found in the acceptable documentation as listed above, the aircraft is eligible for RNP APCH — LNAV/VNAV operations.

(i) A-RNP;

(ii) AMC 20-27 with Baro VNAV;

(iii) AMC 20-28;

(iv) FAA AC 20-138; and

(v) FAA AC 90-105 for the appropriate navigation specification.

(2) Alternatively, if a statement of compliance with FAA AC 20-129 is found in the acceptable documentation as listed above, and the aircraft complies with the requirements and limitations of EASA SIB 2014-04[1], the aircraft is eligible for RNP APCH — LNAV/VNAV operations. Any limitation such as 'within the US National Airspace' may be ignored since RNP APCH procedures are assumed to meet the same ICAO criteria around the world.

(l) RNP APCH — LPV minima

(1) If a statement of compliance with any of the following specifications or standards is found in the acceptable documentation as listed above, the aircraft is eligible for RNP APCH — LPV operations.

(i) AMC 20-28;

(ii) FAA AC 20-138 for the appropriate navigation specification; and

(iii) FAA AC 90-107.

(2) For aircraft that have a TAWS Class A installed and do not provide Mode-5 protection on an LPV approach, the DH is limited to 250 ft.

(m) RNAV 10

(1) If a statement of compliance with any of the following specifications or standards is found in the acceptable documentation as listed above, the aircraft is eligible for RNAV 10 operations.

(i) RNP 10;

(ii) FAA AC 20-138 for the appropriate navigation specification;

(iii) AMC 20-12;

(iv) FAA Order 8400.12 (or later revision); and

(v) FAA AC 90-105.

(n) RNP 4

(1) If a statement of compliance with any of the following specifications or standards is found in the acceptable documentation as listed above, the aircraft is eligible for RNP 4 operations.

(i) FAA AC 20-138B or later, for the appropriate navigation specification;

[1] http://ad.easa.europa.eu/ad/2014-04

(ii) FAA Order 8400.33; and

(iii) FAA AC 90-105 for the appropriate navigation specification.

(o) RNP 2 oceanic

(1) If a statement of compliance with FAA AC 90-105 for the appropriate navigation specification is found in the acceptable documentation as listed above, the aircraft is eligible for RNP 2 oceanic operations.

(2) If the aircraft has been assessed eligible for RNP 4, the aircraft is eligible for RNP 2 oceanic.

(p) Special features

(1) RF in terminal operations (used in RNP 1 and in the initial segment of the RNP APCH)

(i) If a statement of demonstrated capability to perform an RF leg, certified in accordance with any of the following specifications or standards, is found in the acceptable documentation as listed above, the aircraft is eligible for RF in terminal operations:

(A) AMC 20-26; and

(B) FAA AC 20-138B or later.

(ii) If there is a reference to RF and a reference to compliance with AC 90-105, then the aircraft is eligible for such operations.

(q) Other considerations

(1) In all cases, the limitations in the AFM/POH need to be checked, in particular the use of AP or FD which can be required to reduce the FTE primarily for RNP APCH, RNAV 1, and RNP 1.

(2) Any limitation such as 'within the US National Airspace' may be ignored since RNP APCH procedures are assumed to meet the same ICAO criteria around the world.

GM3 NCO.IDE.H.195 Navigation equipment

ED Decision 2016/018/R

GENERAL

(a) The PBN specifications for which the aircraft complies with the relevant airworthiness criteria are set out in the AFM/POH, together with any limitations to be observed.

(b) Because functional and performance requirements are defined for each navigation specification, an aircraft approved for an RNP specification is not automatically approved for all RNAV specifications. Similarly, an aircraft approved for an RNP or RNAV specification having a stringent accuracy requirement (e.g. RNP 0.3 specification) is not automatically approved for a navigation specification having a less stringent accuracy requirement (e.g. RNP 4).

RNP 4

(c) For RNP 4, at least two LRNSs, capable of navigating to RNP 4, and listed in the AFM/POH, may be operational at the entry point of the RNP 4 airspace. If an item of equipment required for RNP 4 operations is unserviceable, then the pilot-in-command may consider an alternate route or diversion for repairs. For multi-sensor systems, the AFM/POH may permit entry if one GNSS sensor is lost after departure, provided one GNSS and one inertial sensor remain available.

AMC1 NCO.IDE.H.195(a) Navigation equipment

ED Decision 2022/012/R

NAVIGATION EQUIPMENT — RNAV SUBSTITUTION

An RNAV system may be used to substitute for conventional navigation aids and radio equipment, without monitoring of the raw data from conventional navigation aids, under the conditions defined in AMC1 NCO.IDE.A.195(a).

GM1 NCO.IDE.H.195(a) Navigation equipment

ED Decision 2022/012/R

NAVIGATION EQUIPMENT — SCOPE OF RNAV SUBSTITUTION

(a) Applications of RNAV substitution include use to:

(1) determine aircraft position relative to or distance from a VOR, marker, DME fix or a named fix defined by a VOR radial or NDB bearing;

(2) navigate to or from a VOR, or NDB, except as lateral guidance in the FAS of an IAP;

(3) hold over a VOR, NDB, or DME fix;

(4) fly an arc based upon DME;

(5) fly an overlay of a conventional departure, arrival, approach or route except as lateral guidance in the FAS of an IAP.

(b) RNAV substitution for ADF, marker and VOR may be used where airborne and/or ground-based equipment is not available.

(c) RNAV substitution for DME may be used where the ground-based DME transponder is unserviceable or the airborne DME transceiver is found to be unserviceable in flight. Caution must be exercised by the pilot-in-command when calculating and using GNSS distances to the active waypoint as reference points are often different.

GM2 NCO.IDE.H.195(a) Navigation equipment

ED Decision 2022/012/R

NAVIGATION EQUIPMENT — SUITABILITY OF THE RNAV SYSTEM FOR RNAV SUBSTITUTION

GNSS (E)TSOs are referenced in AMC1 NCO.IDE.A.195(a) since most of the aircraft conducting NCO are equipped with an RNAV stand-alone system which exclusively bases its positioning on GNSS.

GM3 NCO.IDE.H.195(a) Navigation equipment

ED Decision 2022/012/R

NAVIGATION EQUIPMENT — RNAV SUBSTITUTION — OPERATING PROCEDURE

Although RNAV substitution may not be used for lateral guidance in the FAS, this does not preclude the use of the RNAV system to fly the FAS, provided that raw data from the associated conventional navigation aids is monitored.

AMC1 NCO.IDE.H.195(b) Navigation equipment

ED Decision 2022/012/R

APPROPRIATE CONTINGENCY ACTION

An appropriate contingency action is an alternative offered in NCO.IDE.H.195(b) to completion of the planned flight to a safe landing, either at the planned destination or a destination alternate, using normal procedures and using navigation equipment meeting the requirements of NCO.IDE.H.100, installed for redundancy or as a backup.

The contingency action should be considered before flight and take into account the information identified by flight preparation according to NCO.OP.135. It may depend on the flight and availability of navigation solutions (satellites, ground navaids, etc.) and weather conditions (IMC, VMC) along the flight.

The contingency action addresses partial loss of navigation capability. An appropriate contingency action to meet the requirements of NCO.IDE.H.195(b) does not rely on the performance of any function of the item of equipment whose potential failure is being considered. For example, in considering the failure of a VOR/LOC/DME receiver, none of the functions of that receiver should be relied upon in the contingency action.

Examples of contingency actions include:

— seeking navigational assistance from ATS, using communication, navigation and surveillance systems that remain operational, to enable a safe instrument approach or a safe descent to VMC;

— unusually long periods of dead reckoning.

A contingency action is required such that the failure of one item of navigation equipment has a reasonable likelihood of a safe outcome to the flight, consistent with other risks to which the operation is exposed.

NCO.IDE.H.200 Transponder

Regulation (EU) No 800/2013

Where required by the airspace being flown, helicopters shall be equipped with a secondary surveillance radar (SSR) transponder with all the required capabilities.

AMC1 NCO.IDE.H.200 Transponder

ED Decision 2014/016/R

GENERAL

(a) The secondary surveillance radar (SSR) transponders of helicopters being operated under European air traffic control should comply with any applicable Single European Sky legislation.

(b) If the Single European Sky legislation is not applicable, the SSR transponders should operate in accordance with the relevant provisions of Volume IV of ICAO Annex 10.

NCO.IDE.H.205 Management of aeronautical databases

Regulation (EU) 2016/1119

(a) Aeronautical databases used on certified aircraft system applications shall meet data quality requirements that are adequate for the intended use of the data.

(b) The pilot-in-command shall ensure the timely distribution and insertion of current and unaltered aeronautical databases to the aircraft that require them.

(c) Notwithstanding any other occurrence reporting requirements as defined in Regulation (EU) No 376/2014, the pilot-in-command shall report to the database provider instances of erroneous, inconsistent or missing data that might be reasonably expected to constitute a hazard to flight.

In such cases, the pilot-in-command shall not use the affected data.

AMC1 NCO.IDE.H.205 Management of aeronautical databases

ED Decision 2017/003/R

AERONAUTICAL DATABASES

When the operator of an aircraft uses an aeronautical database that supports an airborne navigation application as a primary means of navigation used to meet the airspace usage requirements, the database provider should be a Type 2 DAT provider certified in accordance with Regulation (EU) 2017/373 or equivalent.

GM1 NCO.IDE.H.205 Management of aeronautical databases

ED Decision 2017/003/R

AERONAUTICAL DATABASE APPLICATIONS

The certification of a Type 2 DAT provider in accordance with Regulation (EU) 2017/373 ensures data integrity and compatibility with the certified aircraft application/equipment.

GM2 NCO.IDE.H.205 Management of aeronautical databases

ED Decision 2017/003/R

TIMELY DISTRIBUTION

The operator should distribute current and unaltered aeronautical databases to all aircraft requiring them in accordance with the validity period of the databases or in accordance with an established procedure if no validity period is defined.

GM3 NCO.IDE.H.205 Management of aeronautical databases

ED Decision 2017/003/R

STANDARDS FOR AERONAUTICAL DATABASES AND DAT PROVIDERS

(a) A 'Type 2 DAT provider' is an organisation as defined in Article 2(5)(b) of Regulation (EU) 2017/373.

(b) Equivalent to a certified 'Type 2 DAT provider' is defined in any Aviation Safety Agreement between the European Union and a third country, including any Technical Implementation Procedures, or any Working Arrangements between EASA and the competent authority of a third country.

SUBPART E: SPECIFIC REQUIREMENTS

SECTION 1 – GENERAL

NCO.SPEC.100 Scope

Regulation (EU) 2015/140

This subpart establishes specific requirements to be followed by a pilot-in-command conducting non-commercial specialised operations with other-than complex motor-powered aircraft.

AMC1 NCO.SPEC.100 Scope

ED Decision 2019/019/R

CRITERIA

The pilot-in-command should consider the following criteria to determine whether an activity falls within the scope of specialised operations:

(a) the aircraft is flown close to the surface to fulfil the mission;

(b) abnormal manoeuvres are performed;

(c) special equipment is necessary to fulfil the mission and which affects the manoeuvrability of the aircraft;

(d) substances are released from the aircraft during the flight where these substances are either harmful or affect the manoeuvrability of the aircraft;

(e) external loads or goods are lifted or towed;

(f) persons enter or leave the aircraft during flight; or

(g) the flight falls under the definition of 'maintenance check flight'.

GM1 NCO.SPEC.100 Scope

ED Decision 2019/019/R

LIST OF SPECIALISED OPERATIONS

(a) Specialised operations include the following activities:

(1) helicopter external loads operations;

(2) helicopter survey operations;

(3) human external cargo operations;

(4) parachute operations and skydiving;

(5) agricultural flights;

(6) aerial photography flights;

(7) glider towing;

(8) aerial advertising flights;

(9) calibration flights;

(10) construction work flights, including stringing power line operations, clearing saw operations;

(11) oil spill work;

(12) avalanche mining operations;

(13) survey operations, including aerial mapping operations, pollution control activity;

(14) news media flights, television and movie flights;

(15) special events flights, including such as flying display, competition flights;

(16) aerobatic flights;

(17) animal herding and rescue flights and veterinary dropping flights;

(18) maritime funeral operations;

(19) scientific research flights (other than those under Annex I to Regulation (EU) 2018/1139);

(20) cloud seeding; and

(21) maintenance check flights.

(b) For other operations, the pilot-in-command can apply the criteria specified in AMC1 NCO.SPEC.100 to determine whether an activity falls within the scope of specialised operations.

NCO.SPEC.105 Checklist

Regulation (EU) No 379/2014

(a) Before commencing a specialised operation, the pilot-in-command shall conduct a risk assessment, assessing the complexity of the activity to determine the hazards and associated risks inherent in the operation and establish mitigating measures.

(b) A specialised operation shall be performed in accordance with a checklist. Based on the risk assessment, the pilot-in-command shall establish such checklist appropriate to the specialised activity and aircraft used, taking account of any section of this subpart.

(c) The checklist that is relevant to the duties of the pilot-in-command, crew members and task specialists shall be readily accessible on each flight.

(d) The checklist shall be regularly reviewed and updated, as appropriate.

GM1 NCO.SPEC.105 Checklist

ED Decision 2014/016/R

DEVELOPMENT OF CHECKLISTS

For developing the checklist, the pilot-in-command should duly take into account at least the following items:

(a) nature and complexity of the activity:

(1) the nature of the flight and the risk exposure, e.g. low height;

(2) the complexity of the activity taking into account the necessary pilot skills and level of experience, ground support, safety and individual protective equipment;

(3) the operational environment and geographical area, e.g., congested hostile environment, mountainous areas, sea areas, or desert areas;

(4) the result of the risk assessment and evaluation;

(b) aircraft and equipment:

(1) the category of aircraft to be used for the activity should be indicated, e.g. helicopter/aeroplane, single/multi-engined;

(2) all equipment required for the activity should be listed;

(c) crew members:

(1) crew composition;

(2) minimum crew experience and training provisions; and

(3) recency provisions;

(d) task specialists:

(1) description of the task specialists' function(s)

(2) minimum crew experience and training provisions; and

(3) recency provisions;

(4) briefing;

(e) aircraft performance:

this chapter should detail the specific performance requirements to be applied, in order to ensure an adequate power margin;

(f) normal procedures and emergency procedures:

(1) operating procedures for the flight crew, including the coordination with task specialists;

(2) ground procedures for the task specialists;

(g) ground equipment:

this chapter should detail the nature, number and location of ground equipment required for the activity;

(h) records:

it should be determined which records specific to these flight(s) are to be kept, such as task details, aircraft registration, pilot-in-command, flight times, weather and any remarks, including a record of occurrences affecting flight safety or the safety of persons or property on the ground.

GM2 NCO.SPEC.105 Checklists

ED Decision 2014/016/R

TEMPLATE FORMS

The following templates are examples, which could be used for developing checklist.

(a) Template Form A — Risk assessment (RA)

Date: RA of Responsible:
Purpose:
Type of operation and brief description:
Participants, working group:
Preconditions, assumptions and simplifications:
Data used:
Description of the analysis method:
External context:
— Regulatory requirements — Approvals — Environmental conditions (visibility, wind, turbulence, contrast, light, elevation, etc.; unless evident from the checklists) — Stakeholders and their potential interest
Internal context:
— Type(s) of aircraft — Personnel and qualifications — Combination/similarity with other operations/SOPs — Other RA used/considered/plugged in
Existing barriers and emergency preparedness:
Monitoring and follow up:
Description of the risk:
Risk evaluation:
Conclusions:

(b) Template Form B — Hazard identification (HI)

Date: HI of Responsible**:**

Phase of operation	**Haz ref**	**Hazard / accidental event**	**Cause / threat**	**Current Treatment Measures (TM)**	**Further treatment required**	**TM ref**	**Comment**

Haz ref: A unique number for hazards, e.g., for use in a database
TM ref: A unique number for the treatment method

(c) Template Form C — Mitigating measures

Date:…….. RA of Responsible:……

Phase of operation	**Haz ref**	**Hazard/ accidental event**	**Current Treatment Measures (TM)/ controls**	**TM ref**	**L**	**C**	**Further treatment required**

Haz ref: A unique number for hazards, e.g., for use in a database
TM ref: A unique number for the treatment method
L: Likelihood (probability)
C: Consequence

(d) Template register A — Risk register

Ref	Operation/ Procedure	Ref	Generic hazard	Ref	Accidental event	Treatment/ control	L	C	Monitoring

L: Likelihood (probability)
C: Consequence

NCO.SPEC.110 Pilot-in-command responsibilities and authority

Regulation (EU) 2016/1119

Whenever crew members or task specialists are involved in the operation, the pilot-in-command shall

(a) ensure compliance of crew members and task specialists with NCO.SPEC.115 and NCO.SPEC.120;

(b) not commence a flight if any crew member or task specialist is incapacitated from performing duties by any cause such as injury, sickness, fatigue or the effects of any psychoactive substance;

(c) not continue a flight beyond the nearest weather-permissible aerodrome or operating site when any crew member or task specialist's capacity to perform duties is significantly reduced from causes such as fatigue, sickness or lack of oxygen;

(d) ensure that crew members and task specialists comply with the laws, regulations and procedures of those States where operations are conducted;

(e) ensure that all crew members and task specialists are able to communicate with each other in a common language; and

(f) ensure that task specialists and crew members use supplemental oxygen continuously whenever he/she determines that at the altitude of the intended flight the lack of oxygen might result in impairment of the faculties of crew members or harmfully affect task specialists. If the pilot-in-command cannot determine how the lack of oxygen might affect the occupants on board, he/she shall ensure that task specialists and crew members use supplemental oxygen continuously whenever the cabin altitude exceeds 10 000 ft for a period of more than 30 minutes and whenever the cabin altitude exceeds 13 000 ft.

AMC1 NCO.SPEC.110(f) Pilot-in-command responsibilities and authority

ED Decision 2016/018/R

DETERMINATION OF SUPPLEMENTAL OXYGEN NEED

When determining the need for supplemental oxygen carriage and use, the pilot-in-command should:

(a) in the preflight phase:

(1) be aware of hypoxia conditions and associated risks;

(2) consider the following objective conditions for the intended flight:

(i) altitude;

(ii) duration of the flight; and

(iii) any other relevant operational conditions;

(3) consider individual conditions of flight crew members and task specialists in relation to:

(i) altitude of the place of residence;

(ii) smoking;

(iii) experience in flights at high altitudes;

(iv) actual medical conditions and medications;

(v) age;

(vi) disabilities; and

(vii) any other relevant factor that may be detected, or reported by the person; and

(4) when relevant, ensure that all flight crew members and task specialists are briefed on hypoxia conditions and symptoms, as well as on the usage of supplemental oxygen equipment.

(b) during flight:

(1) monitor for early symptoms of hypoxia conditions; and

(2) if detecting early symptoms of hypoxia conditions:

(i) consider to return to a safe altitude, and

(ii) ensure that supplemental oxygen is used, if available.

GM1 NCO.SPEC.110(f) Pilot-in-command responsibilities and authority

ED Decision 2016/018/R

DETERMINATION OF SUPPLEMENTAL OXYGEN NEED

(a) The responsibility of the pilot-in-command for safety of all persons on board, as required by NCO.GEN.105(a)(1), includes the determination of need for supplemental oxygen use.

(b) The altitudes above which NCO.SPEC.110(f) requires oxygen to be available and used are applicable to those cases when the pilot-in-command cannot determine the need for supplemental oxygen. However, if the pilot-in-command is able to make this determination,

he/she may elect in the interest of safety to require oxygen also for operations at or below such altitudes.

(c) The pilot-in-command should be aware that flying below altitudes mentioned in NCO.SPEC.110(f) does not provide absolute protection against hypoxia symptoms, should individual conditions and aptitudes be prevalent.

GM2 NCO.SPEC.110(f) Pilot-in-command responsibilities and authority

ED Decision 2016/018/R

DETERMINATION OF OXYGEN NEED — BEFORE FLIGHT

Detailed information and guidance on hypoxia conditions and symptoms, content of the briefing on hypoxia and assessment of individual conditions may be found in the EASA leaflet 'Hypoxia'.

DETERMINATION OF OXYGEN NEED — IN FLIGHT

Several methods for monitoring hypoxia early symptoms may be used and some methods may be aided by personal equipment, such as finger-mounted pulse oximeters. Detailed information and guidance on entering hypoxia conditions, on hypoxia symptoms early detection, and on use of personal equipment such as finger-mounted pulse oximeters or equivalent may be found in the EASA leaflet 'Hypoxia'.

NCO.SPEC.115 Crew responsibilities

Regulation (EU) 2018/1042

(a) The crew member shall be responsible for the proper execution of his/her duties. Crew duties shall be specified in the checklist.

(b) During critical phases of the flight or whenever deemed necessary by the pilot-in-command in the interest of safety, the crew member shall be restrained at his/her assigned station, unless otherwise specified in the checklist.

(c) During flight, the flight crew member shall keep his/her safety belt fastened while at his/her station.

(d) During flight, at least one qualified flight crew member shall remain at the controls of the aircraft at all times.

(e) The crew member shall not undertake duties on an aircraft:

(1) if he/she knows or suspects that he/she is suffering from fatigue as referred to in 7.f. of Annex IV to Regulation (EC) No 216/2008 or feels otherwise unfit to perform his/her duties; or

(2) when under the influence of psychoactive substances or for other reasons as referred to in 7.g of Annex IV to Regulation (EC) No 216/2008.

(f) The crew member who undertakes duties for more than one operator shall:

(1) maintain his/her individual records regarding flight and duty times and rest periods as referred to in Annex III (Part-ORO), Subpart FTL to Regulation (EU) No 965/2012, if applicable; and

(2) provide each operator with the data needed to schedule activities in accordance with the applicable FTL requirements.

(g) The crew member shall report to the pilot-in-command:

(1) any fault, failure, malfunction or defect, which he/she believes may affect the airworthiness or safe operation of the aircraft, including emergency systems; and

(2) any incident that was endangering, or could endanger, the safety of the operation.

AMC1 NCO.SPEC.115(a) Crew responsibilities

ED Decision 2022/012/R

PILOT DUTIES — RECORDING OF FLIGHT TIME

(a) The pilot should only record flight time for the purpose of meeting experience requirements in specialised operations defined in AMC1 ORO.FC.146(f) and AMC1 SPO.SPEC.HESLO.100 if NCO.SPEC applies.

(b) The list of specialised operations in GM1 NCO.SPEC.100 may be used for the purpose of (a).

NCO.SPEC.120 Task specialists responsibilities

Regulation (EU) 2018/394

(a) The task specialist shall be responsible for the proper execution of his/her duties. Task specialists' duties shall be specified in the checklist.

(b) During critical phases of the flight or whenever deemed necessary by the pilot-in-command in the interest of safety, the task specialist shall be restrained at his/her assigned station, unless otherwise specified in the checklist.

(c) The task specialist shall ensure that he/she is restrained when carrying out specialised tasks with external doors opened or removed.

(d) The task specialist shall report to the pilot-in-command:

(1) any fault, failure, malfunction or defect, which he/she believes may affect the airworthiness or safe operation of the aircraft, including emergency systems; and

(2) any incident that was endangering, or could endanger, the safety of the operation.

NCO.SPEC.125 Safety briefing

Regulation (EU) No 379/2014

(a) Before take-off, the pilot-in-command shall brief task specialists on:

(1) emergency equipment and procedures;

(2) operational procedures associated with the specialised task before each flight or series of flights.

(b) The briefing referred to in (a)(2) may not be required if task specialists have been instructed on the operational procedures before the start of the operating season in that calendar year.

AMC1 NCO.SPEC.125 Safety briefing

ED Decision 2014/016/R

TASK SPECIALISTS

(a) Safety briefings should ensure that task specialists are familiar with all aspects of the operation, including their responsibilities.

(b) Such briefings should include, as appropriate:

(1) behaviour on the ground and in-flight, including emergency procedures;

(2) procedures for boarding and disembarking;

(3) procedures for loading and unloading the aircraft;

(4) use of doors in normal and emergency operations;

(5) use of communication equipment and hand signals;

(6) precautions in case of a landing on sloping ground; and

(7) in addition to the items listed from (b)(1) to (b)(6) before take-off:

(i) location of emergency exits;

(ii) restrictions regarding smoking;

(iii) restrictions regarding the use of portable electronic equipment; and

(iv) stowage of tools and hand baggage.

(c) Briefings may be given as a verbal presentation or by issuing the appropriate procedures and instructions in written form. Before commencement of the flight, their understanding should be confirmed.

NCO.SPEC.130 Minimum obstacle clearance altitudes – IFR flights

Regulation (EU) No 379/2014

The pilot-in-command shall establish minimum flight altitudes for each flight providing the required terrain clearance for all route segments to be flown in IFR. The minimum flight altitudes shall not be lower than those published by the State overflown.

NCO.SPEC.145 Simulated situations in flight

Regulation (EU) No 379/2014

Unless a task specialist is on-board the aircraft for training, the pilot-in-command shall, when carrying task specialists, not simulate:

(a) situations that require the application of abnormal or emergency procedures; or

(b) flight in instrument meteorological conditions (IMC).

NCO.SPEC.150 Ground proximity detection

Regulation (EU) No 379/2014

If installed, the ground proximity warning system may be disabled during those specialised tasks, which by their nature require the aircraft to be operated within a distance from the ground below that which would trigger the ground proximity warning system.

NCO.SPEC.155 Airborne collision avoidance system (ACAS II)

Regulation (EU) No 379/2014

Notwithstanding NCO.OP.200, the ACAS II may be disabled during those specialised tasks, which by their nature require the aircraft to be operated within a distance from each other below that which would trigger the ACAS.

NCO.SPEC.160 Release of dangerous goods

Regulation (EU) No 379/2014

The pilot-in-command shall not operate an aircraft over congested areas of cities, towns or settlements or over an open-air assembly of persons when releasing dangerous goods.

NCO.SPEC.165 Carriage and use of weapons

Regulation (EU) 379/2014

(a) The pilot-in-command shall ensure that, when weapons are carried on a flight for the purpose of a specialised task, these are secured when not in use.

(b) The task specialist using the weapon shall take all necessary measures to prevent the aircraft and persons on board or on the ground from being endangered.

NCO.SPEC.170 Performance and operating criteria – aeroplanes

Regulation (EU) 379/2014

When operating an aeroplane at a height of less than 150 m (500 ft) above a non-congested area, for operations of aeroplanes that are not able to sustain level flight in the event of a critical engine failure, the pilot-in-command shall have:

(a) established operational procedures to minimise the consequences of an engine failure; and

(b) briefed all crew members and task specialists on board on the procedures to be carried out in the event of a forced landing.

NCO.SPEC.175 Performance and operating criteria – helicopters

Regulation (EU) No 379/2014

(a) The pilot-in-command may operate an aircraft over congested areas provided that:

(1) the helicopter is certified in category A or B; and

(2) safety measures are established to prevent undue hazard to persons or property on the ground

(b) The pilot-in-command shall have:

(1) established operational procedures to minimise the consequences of an engine failure; and

(2) briefed all crew members and task specialists on board on the procedures to be carried out in the event of a forced landing.

(c) The pilot-in-command shall ensure that the mass at take-off, landing or hover shall not exceed the maximum mass specified for:

(1) a hover out of ground effect (HOGE) with all engines operating at the appropriate power rating; or

(2) if conditions prevail that a HOGE is not likely to be established, the helicopter mass shall not exceed the maximum mass specified for a hover in ground effect (HIGE) with all engines operating at the appropriate power rating, provided prevailing conditions allow a hover in ground effect at the maximum specified mass.

GM1 NCO.SPEC.175(c) Performance and operating criteria – helicopters

ED Decision 2014/016/R

GENERAL

(a) Even when the surface allows a hover in ground effect (HIGE), the likelihood of, for example, dust or blowing snow may necessitate hover out of ground effect (HOGE) performance.

(b) Wind conditions on some sites, particularly downdraft in mountainous areas, may require a reduction in the helicopter mass in order to ensure that an out of ground effect hover can be achieved at the operational site in the conditions prevailing.

SECTION 2 – HELICOPTER EXTERNAL SLING LOAD OPERATIONS (HESLO)

NCO.SPEC.HESLO.100 Checklist

Regulation (EU) No 379/2014

The checklist for HESLO shall contain:

(a) normal, abnormal and emergency procedures;

(b) relevant performance data;

(c) required equipment;

(d) any limitations; and

(e) responsibilities and duties of the pilot-in-command, and, if applicable, crew members and task specialists.

GM1 NCO.SPEC.HESLO.100 Checklist

ED Decision 2017/011/R

REFERENCES

The following references to the AMC and GM of Annex VIII (Part-SPO) provide further guidance for the development of checklists.

(a) AMC1 SPO.SPEC.HESLO.100 provides a generic framework for the development of standard operating procedures (SOP) for HESLO operations. This AMC can be regarded as a good practice example for developing the checklist for HESLO operations.

(b) GM1 SPO.SPEC.HESLO.100 provides guidance for initial pilot training for HESLO types 1, 2, 3 and 4.

NCO.SPEC.HESLO.105 Specific HESLO equipment

Regulation (EU) No 379/2014

The helicopter shall be equipped with at least:

(a) one cargo safety mirror or alternative means to see the hook(s)/load; and

(b) one load meter, unless there is another method of determining the weight of the load.

NCO.SPEC.HESLO.110 Transportation of dangerous goods

Regulation (EU) No 379/2017

The operator transporting dangerous goods to or from unmanned sites or remote locations shall apply to the competent authority for an exemption from the provisions of the Technical Instructions if they intend not to comply with the requirements of those Instructions.

SECTION 3 – HUMAN EXTERNAL CARGO OPERATIONS (HEC)

NCO.SPEC.HEC.100 Checklist

Regulation (EU) No 800/2013

The checklist for HEC shall contain:

(a) normal, abnormal and emergency procedures;

(b) relevant performance data;

(c) required equipment;

(d) any limitations; and

(e) responsibilities and duties of the pilot-in-command, and, if applicable, crew members and task specialists.

GM1 NCO.SPEC.HEC.100 Checklist

ED Decision 2014/016/R

REFERENCES

AMC1 SPO.SPEC.HEC.100 of Annex VIII (Part-SPO) provides a generic framework for the development of SOP for HEC operations. This AMC can be regarded as a good practice example for developing the checklist for HEC operations.

NCO.SPEC.HEC.105 Specific HEC equipment

Regulation (EU) 2019/1384

(a) The helicopter shall be equipped with:

(1) hoist operations equipment or cargo hook;

(2) one cargo safety mirror or alternative means to see the hook; and

(3) one load meter, unless there is another method of determining the weight of the load.

(b) The installation of all hoist and cargo hook equipment other than a simple PCDS, and any subsequent modifications shall have an airworthiness approval appropriate to the intended function.

SECTION 4 – PARACHUTE OPERATIONS (PAR)

NCO.SPEC.PAR.100 Checklist

Regulation (EU) No 379/2014

The checklist for PAR shall contain:

(a) normal, abnormal and emergency procedures;

(b) relevant performance data;

(c) required equipment;

(d) any limitations; and

(e) responsibilities and duties of the pilot-in-command, and, if applicable, crew members and task specialists.

NCO.SPEC.PAR.105 Carriage of crew members and task specialists

Regulation (EU) No 379/2014

The requirement laid down in NCO.SPEC.120(c) shall not be applicable for task specialists performing parachute jumping.

NCO.SPEC.PAR.110 Seats

Regulation (EU) No 379/2014

Notwithstanding NCO.IDE.A.140(a)(1) and NCO.IDE.H.140(a)(1), the floor of the aircraft may be used as a seat, provided means are available for the task specialist to hold or strap on.

NCO.SPEC.PAR.115 Supplemental oxygen

Regulation (EU) No 379/2014

Notwithstanding NCO.SPEC.110(f), the requirement to use supplemental oxygen shall not be applicable for crew members other than the pilot-in-command and for task specialists carrying out duties essential to the specialised task, whenever the cabin altitude:

(a) exceeds 13 000 ft, for a period of not more than 6 minutes;, or

(b) exceeds 15 000 ft, for a period of not more 3 minutes.

NCO.SPEC.PAR.120 Release of dangerous goods

Regulation (EU) 2019/1384

Notwithstanding point NCO.SPEC.160, parachutists may carry smoke trail devices and exit the aircraft for the purpose of parachute display over congested areas of cities, towns or settlements or over an open-air assembly of persons, provided those devices are manufactured for that purpose.

SECTION 5 – AEROBATIC FLIGHTS (ABF)

NCO.SPEC.ABF.100 Checklist

Regulation (EU) No 379/2014

The checklist for ABF shall contain:

(a) normal, abnormal and emergency procedures;

(b) relevant performance data;

(c) required equipment;

(d) any limitations; and

(e) responsibilities and duties of the pilot-in-command, and, if applicable, crew members and task specialists.

NCO.SPEC.ABF.105 Documents and information

Regulation (EU) No 379/2014

The following documents and information listed in NCO.GEN.135(a) need not be carried during aerobatic flights:

(a) details of the filed ATS flight plan, if applicable;

(b) current and suitable aeronautical charts for the route/area of the proposed flight and all routes along which it is reasonable to expect that the flight may be diverted; and

(c) procedures and visual signals information for use by intercepting and intercepted aircraft.

NCO.SPEC.ABF.110 Equipment

Regulation (EU) No 379/2014

The following equipment requirements need not be applicable to aerobatic flights:

(a) first-aids kit as laid down in NCO.IDE.A.145 and NCO.IDE.H.145;

(b) hand-fire extinguishers as laid down in NCO.IDE.A.160 and NCO.IDE.H.180; and

(c) emergency locator transmitters or personal locator beacons as laid down in NCO.IDE.A.170 and NCO.IDE.H.170.

SECTION 6 – MAINTENANCE CHECK FLIGHTS (MCF)

NCO.SPEC.MCF.100 Levels of maintenance check flights

Regulation (EU) 2019/1384

Before conducting a maintenance check flight, the operator shall determine the applicable level of the maintenance check flight as follows:

(a) a “Level A” maintenance check flight for a flight where the use of abnormal or emergency procedures, as defined in the aircraft flight manual, is expected, or where a flight is required to prove the functioning of a backup system or other safety devices;

(b) a “Level B” maintenance check flight for any maintenance check flight other than a “Level A” maintenance check flight.

NCO.SPEC.MCF.105 Operational limitations

Regulation (EU) 2019/1387

(a) By way of derogation from point NCO.GEN.105(a)(4) of this Annex, a maintenance check flight may be conducted with an aircraft that has been released to service with incomplete maintenance in accordance with points M.A.801(f) of Annex I (Part-M), 145.A.50(e) of Annex II (Part-145) or ML.A.801(f) of Annex Vb (Part-ML) to Commission Regulation (EU) No 1321/2014.

(b) By way of derogation from point NCO.IDE.A.105 or NCO.IDE.H.105, the pilot-in-command may conduct a flight with inoperative or missing items of equipment or functions required for the flight if those inoperative or missing items of equipment or functions have been identified in the checklist referred to in point NCO.SPEC.MCF.110.

NCO.SPEC.MCF.110 Checklist and safety briefing

Regulation (EU) 2019/1384

(a) The checklist referred to in point NCO.SPEC.105 shall be updated as needed before each maintenance check flight and shall consider the operating procedures that are planned to be followed during the particular maintenance check flight.

(b) Notwithstanding point NCO.SPEC.125(b), a safety briefing of the task specialist shall be required before each maintenance check flight.

GM1 NCO.SPEC.MCF.110 Checklist and safety briefing

ED Decision 2019/019/R

SPECIFIC PROCEDURES

Specific preparation for a maintenance check flight (MCF) is essential. In addition to the standard considerations before a typical flight (weather, aircraft weight and balance, pre-flight inspection, checklists, etc.), the pilot should:

(a) inform ATC of the particular MCF;

(b) if needed, agree on the appropriate airspace;

(c) understand the airworthiness status of the aircraft;

(d) assess the complexity of the flight; and

(e) develop appropriate strategies to mitigate potential risks.

The operator planning to conduct an MCF should develop checklists for the in-flight assessment of the unreliable systems, considering relevant abnormal and emergency procedures. When developing the checklists, the operator should consider the applicable documentation available from the type certificate holder or other valid documentation.

The pilot-in-command should only allow on board the persons needed for the purpose of the flight and brief the crew and task specialist on abnormal and emergency procedures relevant for the MCF.

NCO.SPEC.MCF.120 Flight crew requirements

Regulation (EU) 2019/1384

When selecting a flight crew member for a maintenance check flight, the operator shall consider the aircraft complexity and the level of the maintenance check flight as defined in point NCO.SPEC.MCF.100.

AMC1 NCO.SPEC.MCF.120 Flight crew requirements

ED Decision 2019/019/R

SELECTION OF PILOT-IN-COMMAND FOR A LEVEL-A MCF

The operator may select a flight instructor to act as pilot-in-command for a 'Level A' MCF on other than complex motor-powered aircraft.

NCO.SPEC.MCF.125 Crew composition and persons on board

Regulation (EU) 2019/1384

(a) The pilot-in-command shall identify the need for additional crew members or task specialists, or both, before each intended maintenance check flight, taking into consideration the expected flight crew member or task specialist workload and the risk assessment.

(b) The pilot-in-command shall not allow persons on board other than those required under point (a) during a "Level A" maintenance check flight.

GM1 NCO.SPEC.MCF.125 Crew composition and persons on board

ED Decision 2019/019/R

TASK SPECIALIST

The task specialist should be trained as necessary in crew coordination procedures as well as emergency procedures and be appropriately equipped.

NCO.SPEC.MCF.130 Simulated abnormal or emergency procedures in flight

Regulation (EU) 2019/1387

By way of derogation from point NCO.SPEC.145, a pilot-in-command may simulate situations that require the application of abnormal or emergency procedures with a task specialist on board if the simulation is required to meet the intention of the flight and if it has been identified in the check list referred to in point NCO.SPEC.MCF.110 or in operating procedures.

NCO.SPEC.MCF.140 Systems and equipment

Regulation (EU) 2019/1384

When a maintenance check flight is intended to check the proper functioning of a system or equipment, that system or equipment shall be identified as potentially unreliable, and appropriate mitigation measures shall be agreed prior to the flight in order to minimise risks to flight safety.