



OPINION No 01/2012

OF THE EUROPEAN AVIATION SAFETY AGENCY

of 1st February 2012

for a Commission Regulation establishing the Implementing Rules for air operations

'Air Operations – OPS (Part-NCC and Part-NCO)'

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Executive Summary

This Opinion contains the following documents:

- Amendment to Cover Regulation on Air operations including amendments to Annex I - Definitions;
- Annex VI - Part-NCC (A, H), technical requirements for non-commercial operations with complex motor-powered aeroplanes and helicopters;
- Annex VII - Part-NCO (A, H, S, B) technical requirements for non-commercial operations with other-than-complex motor-powered aircraft (aeroplanes, helicopters, sailplanes and balloons).

Based on the principles set out by the Management Board together with the European Commission, the Agency's proposal aligns the requirements with ICAO standards and recommended practices (SARPs) of Annex 6 Part II and Part III Sections 3 and with the already published Opinion on Part-CAT, as far as feasible.

The development of these requirements was based on the following objectives:

- maintain a high level of safety;
- ensure proportionate rules where appropriate;
- guarantee flexibility and efficiency for operators and authorities.

This Opinion is the result of an extensive consultation process involving authorities, associations, operators and aviation experts.

The Opinion for the remaining Annex of this Regulation, Annex VIII – Part-SPO, and the remaining Sections of Annex IV – Part CAT for sailplanes and balloons will be published at a later stage.

Introduction

I. General

1. Regulation (EC) No 216/2008¹ of the European Parliament and of the Council (hereinafter referred to as the 'Basic Regulation') as amended by Regulation (EC) No 1108/2009² establishes an appropriate and comprehensive framework for the definition and implementation of common technical requirements and administrative procedures in the field of civil aviation.
2. The purpose of this Opinion is to assist the European Commission in laying down Implementing Rules for air operations.
3. The Opinion has been adopted, following the procedure specified by the European Aviation Safety Agency's (the Agency) Management Board³, in accordance with the provisions of Article 19 of the Basic Regulation.

II. Scope of the Opinion

4. This Opinion consists of the following documents:
 - Amendment to Cover Regulation on Air operations including amendments to Annex I - Definitions;
 - Annex VI - Part-NCC (A,H), technical requirements for non-commercial operations with complex⁴ aeroplanes and helicopters;

¹ 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. *OJ L 79, 19.03.2008, p. 1-49.*

² Regulation (EC) No 1108/2009 of the European Parliament and of the Council of 21 October 2009 amending Regulation (EC) No 216/2008 in the field of aerodromes, air traffic management and air navigation services and repealing Directive 2006/33/EC. *OJ L 309, 24.11.2009, pp. 51-70.*

³ Decision of the Management Board concerning the procedure to be applied by the Agency for the issuing of Opinions, Certifications Specifications and Guidance Material (Rulemaking Procedure). EASA MB 08-2007, 13.06.2007.

⁴ Regulation (EC) 216/2008 contains in Article 3(j) the definition for complex motor-powered aircraft (CMPA) as follows:

(j) 'complex motor-powered aircraft' shall mean:

(i) an aeroplane:

- with a maximum certificated take-off mass exceeding 5 700 kg, or
- certificated for a maximum passenger seating configuration of more than nineteen, or
- certificated for operation with a minimum crew of at least two pilots, or
- equipped with (a) turbojet engine(s) or more than one turboprop engine, or

(ii) a helicopter certificated:

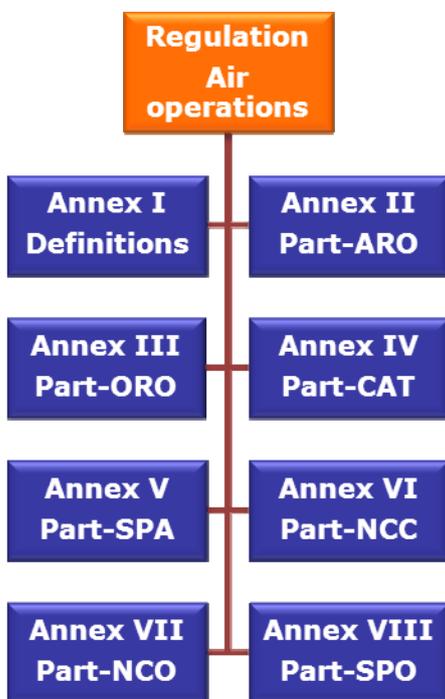
- for a maximum take-off mass exceeding 3 175 kg, or
- for a maximum passenger seating configuration of more than nine, or
- for operation with a minimum crew of at least two pilots,

- Annex VII - Part-NCO (A,H,S,B) technical requirements for non-commercial operations with other-than-complex aircraft (aeroplanes, helicopters, sailplanes and balloons).
5. This Opinion does not contain:
- Annex III – Part-CAT commercial air transport requirements for sailplanes, balloons, and A-to-A flights with aeroplanes and helicopters;
 - Annex VIII - Part-SPO, technical requirements for specific operations (aerial work).

The Opinion for these remaining requirements will be published at a later stage.

6. The documents of this Opinion are based on the revised rule structure as proposed by the European Commission and the Agency in April 2011. The following table provides an overview of the Annexes under the Regulation for Air operations.

Figure 1: Annexes of the Regulation for Air operations



III. Consultation

7. This Opinion is based on:
- NPA 2009-02 containing draft proposals for IR and related AMC and GM for air operations.
8. NPA 2009-02 was published on the EASA website (<http://www.easa.europa.eu>) on 30 January 2009. The consultation period ended on 31 July 2009. The Agency had received in total 13 775 comments, of which around 8 200 comments related to the scope of this Opinion.

or
(iii) a tilt rotor aircraft;

9. Comment summaries, related responses to summarised comments and the proposed revised rule text were discussed in detail with the following four rulemaking review groups (RGs):
 - RG01 (CAT), focusing on the rules for commercial air transport operations;
 - RG02 (SPO), focusing on the rules for specialised operations;
 - RG03 (NCC), focusing on the rules for non-commercial operations of complex motor-powered aircraft; and
 - RG04 (NCO), focusing on the rules for non-commercial operations of other-than-complex motor-powered aircraft.
10. The draft CRD texts of Part-NCC and Part NCO was reviewed by RG03 and RG04 respectively.
11. The Agency also made a consistency check with other Parts (Part-CAT and Draft Part-SPO) before publishing the CRD.
12. Based on extensive consultation with authorities, associations and operators, the Agency published the CRD OPS II on 31 August 2011. The reaction period ended on 31 October 2011.
13. The Agency received reactions to the CRD from 56 entities including National authorities, manufacturers, associations and individuals. The total number of comments is approximately 600, of which 30% are duplicates.
14. The following figures provide an overview of such reactions.

Figure 2: Overview of commenters providing reactions

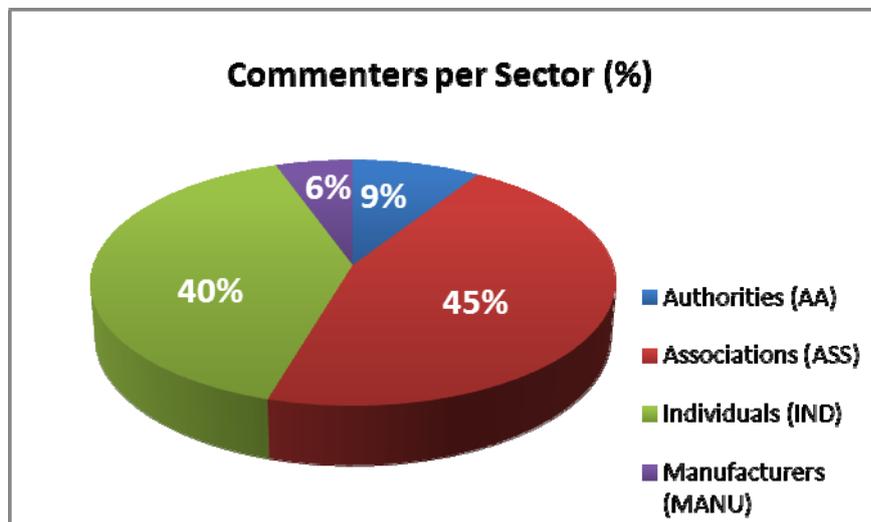


Figure 3: Distribution of the comments between Part-NCC and Part-NCO

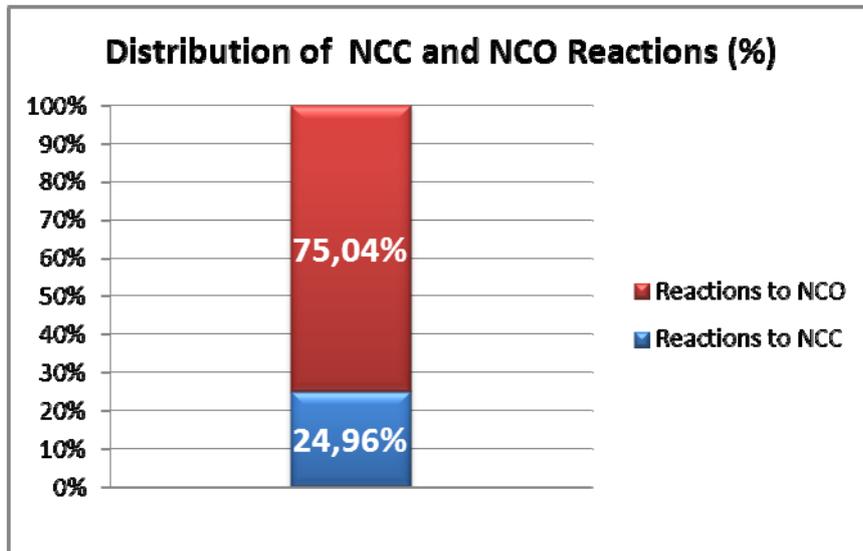
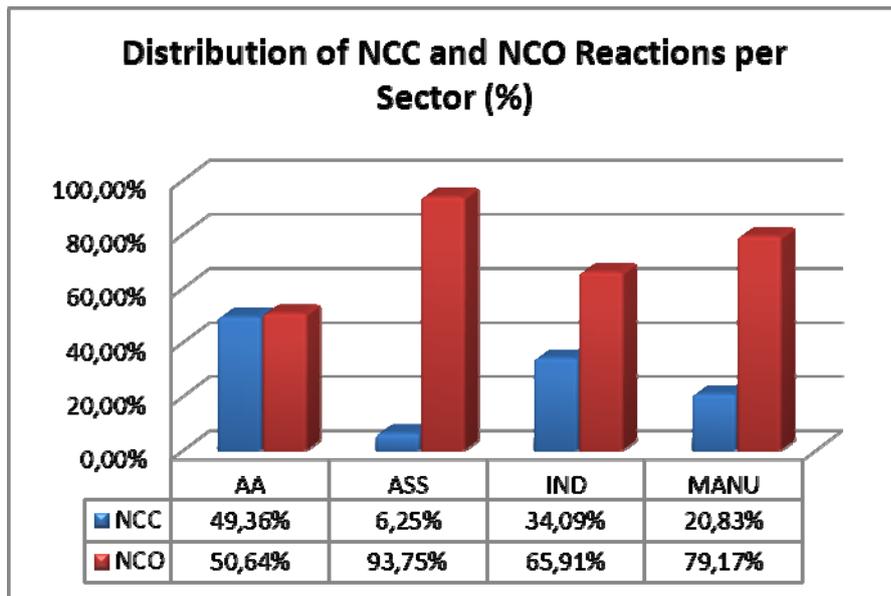


Figure 4: Distribution of the comments between Part-NCC and Part-NCO



15. All reactions have been assessed and responded and were taken into account when drafting the amendment to Annex I, Annex VI and Annex VII of this Opinion.

IV. Rule numbering convention

16. In line with the Agency's rulemaking drafting guidelines, the following rule numbering convention was applied to the IRs:

<Part>. <Subpart>. <Section>. <N>

Explanation:

<Part>: mandatory - up to four letters or digits

examples: NCC, NCO

<Subpart>: mandatory - up to four letters or digits

examples: GEN, OP, POL, IDE

<Section>: mandatory - up to five letters or digits

examples: MPA, A, H

<N>: mandatory - rule number – three digits, starting at 100, following numbers generally numbered in increments of 5.

Cover Regulation on Air operations

I. Scope

17. The Cover Regulation on 'Air operations' defines the general applicability of the Parts it covers and proposes transition measures in the form of opt-outs.⁵ It is prepared as an amending Regulation and takes into account changes made by the European Commission related to the initial OPS Cover Regulation that was published with the EASA Opinion 04/2011.

II. Overview of reactions

18. Reactions received on the OPS Cover Regulation focused on consistent wording and required clarification in a few instances.

III. Explanations

19. Article 1(1)-(3) of the amending Regulation establishes the scope of the Regulation addressing any non-commercial operation with aeroplanes, helicopters, sailplanes and balloons. Operators of complex motor-powered aeroplanes and helicopters will have to declare their activity to the competent authority (Article 1(6) first point). The related provisions on declaration and organisation requirements were already published with the EASA Opinion 04/2011.

20. Two new Annexes are proposed containing the technical requirements on operational procedures, performance, equipment and some general requirements: Annex VI – Part-NCC and Annex VII – Part-NCO (Article 1(11)). The related applicability is established in the first 2 points of Article 1(6). In addition, whenever operating within defined airspace or conducting operations to lower minima, both commercial and non-commercial operators are required to hold a specific approval. The provisions related to such activities and approvals are contained in Part-SPA (operations requiring specific approvals), which was published with Opinion 04/2011. The Cover Regulation now establishes the related applicability (Article 1(4) and (5)).

21. As regards the applicable operational requirements for approved training organisations (ATOs), it is stated that flying training by ATOs is conducted in accordance with either Part-NCC or Part-NCO, depending on whether the aircraft is complex motor-powered or not and regardless of whether it is a commercial or non-commercial activity (Article 1(6) third point).

22. The table below summarises the different OPS requirements applicable to non-commercial operations and approved training organisations:

⁵ An opt-out is a type of transition measure that leaves to the Member States the choice to postpone the implementation date of a certain provision, up to a certain time limit defined by law.

Operation	Part	Aircraft	Publication
Non-commercial operations with CMPA	Part-NCC	Aeroplanes Helicopters	Published with this Opinion
	Part-SPA	Aeroplanes Helicopters	Published with Opinion 04/2011
	Part-ORO	Aeroplanes Helicopters	Published with Opinion 04/2011
Non-commercial operations with other-than-complex motor-powered aircraft (otCMPA)	Part-NCO	Aeroplanes Helicopters Balloons Sailplanes	Published with this Opinion
	Part-SPA	Aeroplanes Helicopters Balloons Sailplanes	Published with Opinion 04/2011
Approved training organisations	Part-ORA	any	Published with Opinion 03/2011
	Part-NCO	otCMPA: Aeroplanes Helicopters Balloons Sailplanes	Published with this Opinion
	Part-NCC	CMPA: Aeroplanes Helicopters	Published with this Opinion
	Part-SPA (any operator)	Aeroplanes Helicopters Balloons Sailplanes	Published with Opinion 04/2011

23. Article 1(7) contains clarifications as regards the applicable FTL requirements. For the time being, for non-commercial operations with complex motor-powered aircraft, national provisions continue to apply. The related Implementing Rules (IRs) will be proposed at a later stage.
24. Article 1(8) and (9) of the amending Regulation contain the opt-out provisions. The definition of a maximum applicability date for the IR in Article 70 of the Basic Regulation limits the periods available for transition by establishing that the IRs shall be applicable no later than 8 April 2012. On request of the European Commission, the method of opt-outs was chosen to cater for the transitional period

where it extends beyond 8 April 2012. For non-commercial operations a general opt-out of 2 years is proposed.

25. Article 1(10) includes the additional definitions that will be added to Annex I Definitions (amending that published in Opinion 04/2011). Annex I presents definitions for terms used in the Annexes to the Regulation on Air Operations. The addendum contains the definitions for 'approach procedure with vertical guidance (APV)' and 'weather-permissible aerodrome'.
26. The definition for APV was transferred from the AMC to Annex I into the main Annex, as the term is used in Implementing Rules within Part-NCC. This was presented in the CRD OPS II, where it was also clarified that the definition is aligned with that in EU-OPS, covering approaches made down to a decision height (DH) of 250 ft and runway visual range (RVR) not less than 600 m. The alignment with EU-OPS means that operations using localiser precision with vertical guidance (LPV) with a DH down to 200 ft should be considered as CAT I and not APV.
27. The definition for 'weather-permissible aerodrome' was added in CRD OPS II. It requires that a weather check is made indicating that a safe landing will be possible. The definition is based on that given for 'suitable alternate aerodrome' in ICAO Annex 6 Part I Attachment E. The term 'weather-permissible aerodrome' is used in preference to 'suitable aerodrome', particularly as the latter could have created challenges for translators, who would have needed to distinguish it from an 'adequate aerodrome'. No reactions were made to these definitions.
28. Finally, Article 2 includes the entry into force requirements of the amending Regulation.

Annex VI - Part-NCC (A,H)

I. Scope

29. Part-NCC should be read together with:
- the Cover Regulation on Air Operations in particular concerning applicability dates and transition periods;
 - Annex I – Definitions for terms used in Annexes II to VIII;
 - Annex II – Part-ARO containing, among others, authority requirements for NCC operators relating to oversight responsibilities, the management of declarations and the issuance of the list of specific approvals;
 - Annex III – Part-ORO containing, among others, organisation requirements for NCC operators relating to the management system, the procedure for acceptable means of compliance, the operator requirements for submitting the declaration, the maintenance of manual, logs and records, flight crew and cabin crew training, and - at a later stage - requirements for flight time limitations; and
 - Annex V - Part-SPA, which contains the requirements for operations requiring a specific approval.
30. Part-NCC contains the technical requirements for non-commercial operations of complex aeroplanes and helicopters. It consists of four Subparts of which the one on instruments, data and equipment is further broken down to Sections containing aircraft category specific rules.
31. The structure of the Subparts is comparable to the structure of the Essential Requirements in Annex IV of the Basic Regulation and ICAO Annex 6.
32. The rule structure, and in particular the Sections, have been designed in such a way that requirements for additional aircraft categories, or specific operations, could be added in the future without the need to make changes to the existing rule text or the existing structure. It should be noted that future rulemaking tasks will develop the requirements for tilt-rotor aircraft.
33. Figure 5 and Figure 6 provide an overview of the structure of Part-NCC.

Figure 5: Structure of Part-NCC – Headings

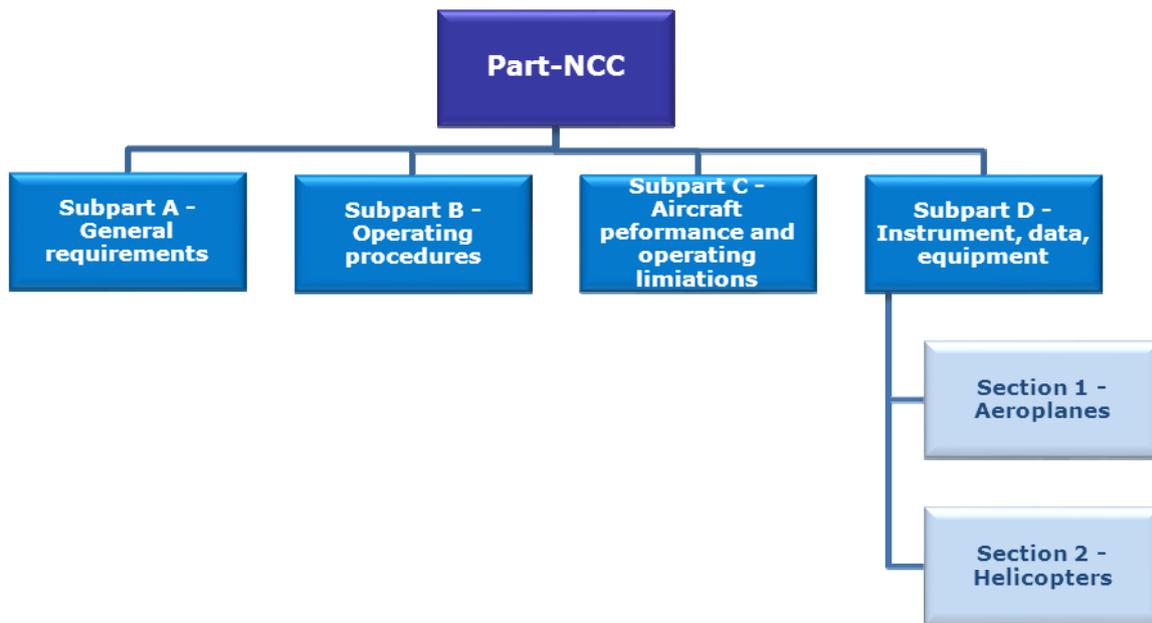
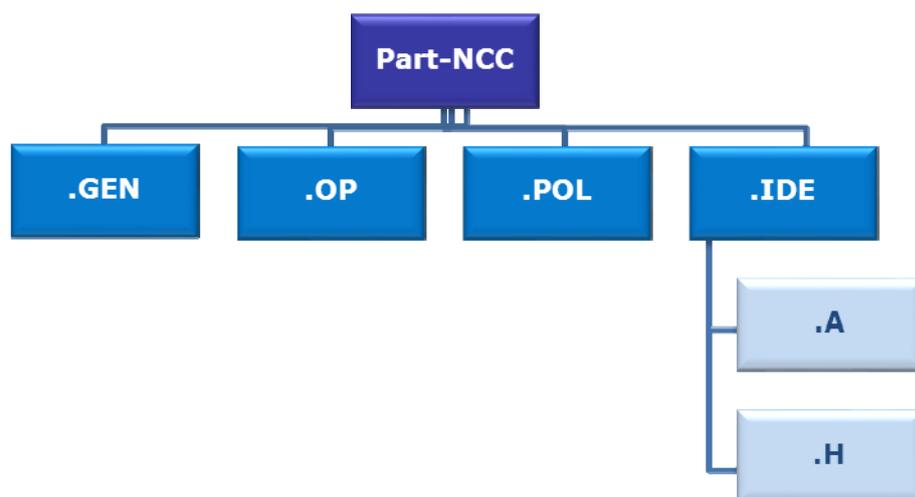


Figure 6: Structure of Part-NCC – Rule identifiers



34. The rules for NCC operations are aligned with ICAO Annex 6 Part II and Part III and are based on draft JAR-OPS 2.

II. Overview of reactions

35. 150 comments submitted by 14 commenters were received for Part-NCC.
36. In general, commenters provided support for the rule structure of this Subpart. Therefore, the Agency maintained the concept of four Subparts, which have been further broken down into Sections and Chapters, where appropriate.
37. Several comments requested that NCC rules should be aligned with commercial rules, where applicable. The Agency acknowledged that such an alignment would be in the interest of safety in particular for such operations that involve commercial

and non-commercial flights and this request has been accepted where appropriate. Further details are described in the subheadings for the different Sections below.

III. Overview of differences

Differences to ICAO Annex 6

38. The following table provides an overview of ICAO Annex 6 Part II and Part III Section 3 standards that are considered to be either not transposed or transposed in a way that does not provide at least an equivalent level of safety as specified in ICAO Annex 6.

Table 7: Differences to ICAO Annex 6

Annex 6 Part I/III reference	EASA-EU reference	Description of difference
Annex 6 Part II 3.6.3.2.1.1/3 & Part III Sect III 4.7.2.1	NCC.IDE.A/H.160	Implementation date for CVR applies to CofA issued on or after 01/01/2016.
Annex 6 Part II 3.6.3.1.2.2/3 & Part III Sect III 4.7.1.2.1	NCC.IDE.A/H.165	Implementation date for FDR applies to CofA issued on or after 01/01/2016.
Annex 6 Part II 3.6.3.1.2.5	NCC.IDE.A.165	Maximum sampling and recording interval of certain parameters in FDRs not implemented
Annex 6 Part II 3.6.3.3.1.2 & Part III Sect III 4.7.3.1.1.1	NCC.IDE.A./H.170	Retrofit of data link communication recording not implemented

IV. List of proposed rulemaking tasks

39. During the consultation phases with stakeholders a number of items have been identified which – if they would have been addressed in this Opinion - would have gone far beyond the Agency's mandate to transpose the content of existing rules. These items however have been documented and will be addressed in separated rulemaking tasks to allow for an appropriate consultation with and involvement of stakeholders. The following table provides an overview of these proposed rulemaking tasks.

Table 8: Proposed rulemaking tasks

Part, rule references	Scope	Reference to RMP
NCC.POL.105	Review of standard mass values	RMT.0.312 & 0.313 / OPS.027
NCC.IDE.A.165	Update of the parameter list including the parameter performance.	RMT.0.308 & 0.309
NCC.IDE.A./H.170	Retrofit of Datalink recorders	RMT 0.294 & 0.295

V. NCC.GEN: Subpart A – General requirements

40. This Subpart contains general requirements for NCC operations.

General

41. Some concerns have been raised about the relevant competent authority for aircraft registered in a third country. Regulation (EC) No 216/2008 is applicable to aircraft registered in a third country and operated in the Community. The determination of the competent authority is based on two criteria:
42. - the 'principal place of business' for corporate aviation and managed operations provided as non-commercial operation; and
43. - the 'residence' for private/owner operators.
44. NCC.GEN.100 has therefore been drafted in accordance with article 4.1 of Regulation (EC) No 216/2008.
45. Some comments requested to clarify the content of NCC.GEN.130 on Portable Electronic Devices (PED). A new AMC/GM is going to be developed to provide further guidance on PED.
46. Since an aircraft Certificate of Airworthiness (CofA) is considered to be valid only upon the attachment of a valid Airworthiness Review Certificate (ARC) and considering that a special mention of the CofA is already stating that a current ARC shall be attached to the C of A, the ARC has not been included in the required document to be carried in NCC.GEN.140 in order not to duplicate the requirement.
47. Many comments were received asking for more exemptions in NCC.GEN.150 to be able to carry on-board items that are normally considered as dangerous goods. The Agency has some concerns about these additional exemptions and considers exemptions already provided by the ICAO technical instructions shouldn't be extended.

NCC.GEN.106 Pilot-in-command responsibilities and authority

48. In accordance with the new drafting principles, the IR makes a reference to the Essential Requirements in Annex IV of the Basic Regulation, where such requirements are addressed in more detail in the IR.

NCC.GEN.120 Taxiing of aeroplanes

49. Due to the comments received especially on the requirement to be trained to use a radio telephone, alleviation has been provided for aerodrome where radio communications are not required. This modification also aligns this requirement with ICAO Annex 6 part II.
50. Following a few comments, a GM is going to be added to provide some guidance on the skills and knowledge required in order to be able to conform to the operational standards required for safe aeroplane movement at the aerodrome.

NCC.GEN.125 Rotor engagement

51. The text describes the conditions for the rotor engagement for flight and maintenance reasons, and is aligned with Part-CAT, CAT.GEN.MPA.130.

NCC.GEN.130 Portable electronic devices

52. The text requires not to use PED that may adversely affect the aircraft and is aligned with Part-CAT, CAT.GEN.MPA.135.

NCC.GEN.150 Transport of dangerous goods

53. This requirement addresses the circumstances under which dangerous goods might be carried without holding an approval in accordance with SPA.DG. This concerns, for example, items carried in passengers' or crew members' baggage that are normally considered as dangerous goods.
54. The reporting requirement for undeclared or misdeclared dangerous goods has been removed since it is considered to be not relevant and practicable for non-commercial operations.
55. The approach taken by the Agency is to work with a dynamic reference to the ICAO Technical Instructions, as presented in the NPA. The reference is specified in the IR. Extracts from the Technical Instructions are not generally included in these rules. Only requirements specifying particular operator responsibilities have been repeated from the Technical Instructions.
56. The term 'Technical Instructions' is defined in Annex I (as published in Opinion 04/2011).

VI. NCC.OP: Subpart B – Operating procedures

57. This Subpart contains requirements for operating procedures for NCC operations.

General

58. The requirements for LVTO are aligned with the Part-CAT and Part-SPA proposal requiring a Part-SPA approval for any take-off below 400m.
59. Many stakeholders expressed their concerns over NCC.OP.155 and NCC.OP.156 related to the selection of destination alternate aerodromes for aeroplanes and helicopters. It is not the intent of the rule, as expressed in the comments, to require destination and alternate aerodrome to be weather permissible at the same time. As mentioned in these rules, an alternate has to be selected complying with the applicable weather requirements if the weather at the destination is below the minimum.
60. Following comments received on the use of a DA(H) when flying non-precision approaches using the continuous descent final approach technique which may lead to flying below the MDA(H) in case of a missed approach, an AMC to NCC.OP.111 is going to be added to further clarify the responsibility of the operator to develop procedures to prevent flying below the MDA/MDH during go around/ missed approach.

NCC.OP.105 Specification of isolated aerodromes - aeroplanes

61. The rule has been simplified and only refers to the flying time to the nearest adequate alternate aerodrome.
62. It should be noted, that the term is not defined for helicopter operations and it is understood that the operator would specify the selection criteria in the operations manual. The Agency is considering to define isolated aerodrome further in a future rulemaking task.

NCC.OP.110 Aerodrome operating minima – general***NCC.OP.111 Aerodrome operating minima – NPA, APV, CAT I operations******NCC.OP.112 Aerodrome operating minima – circling operations with aeroplanes******NCC.OP.113 Aerodrome operating minima – onshore circling operations with helicopters***

63. NCC.OP.110 is stricter than ICAO Annex 6 Part II 3.4.2.7. Part-NCC requires the operator to specify aerodrome operating minima whereas Annex 6 Part II only requires the operator to ensure that the pilot-in-command respects the operating minima established by the State in which the aerodrome is located.
64. The rule text and the rule structure are now better aligned with the corresponding requirement in Part-CAT, CAT.OP.MPA.110.

NCC.OP.120 Noise abatement procedures

65. The rule is addressed to the operator and includes the objective that safety should have priority over noise abatement. It is based on ICAO Annex 6 Part II and III recommendations.

NCC.OP.125 Minimum obstacle clearance altitudes – IFR flights

66. This rule is aligned with Annex 6 Part II 3.4.2.6. The objective of the rule is that the operator specifies the method to establish minimum flight altitudes; and based on this method, the PIC then establishes the minimum flight altitudes for each flight.

NCC.OP.135 Stowage of baggage and cargo

67. This rule is based on ICAO Annex 6 Part II and III requirement. The rule text is aligned with Part-CAT, CAT.OP.MPA.160.

NCC.OP.140 Passenger briefing

68. The rule text contains a list of topics that need to be addressed in the passenger briefing.

NCC.OP.145 Flight preparation

69. As a result to the comments received, a GM is going to be added to provide some guidance on the possible use of an operational flight plan (OFP) to meet the requirement on the flight preparation. ICAO also does not mandate an OFP for non-commercial operations.

NCC.OP.150 Take-off alternate aerodrome - aeroplane***NCC.OP.151 Destination alternate aerodrome – aeroplanes******NCC.OP.152 Destination alternate aerodrome – helicopters***

70. The requirement for alternate id split into three specific requirements. In accordance with ICAO Annex 6 Part II Section 3 and Part III Section III, take-off alternate aerodromes are only prescribed for aeroplanes. Moreover, it is specified that these requirements are applicable for instrument flight rules (IFR) flights only.
71. The text for the destination alternate aerodrome is split into aircraft-specific requirements. The text determines the validity period of meteorological conditions for aeroplane operations. Whereas ICAO Annex 6 and the NPA text only refer to a reasonable period before and after the estimated time of arrival, the text determines this period to one hour before and one hour after the estimated time of arrival as in Part-CAT.
72. For clarification and consistency, NCC.OP.152(a) has been amended to include a requirement for an instrument approach procedure on the destination aerodrome since the rule was referring to minimum associated to the instrument procedure.

73. In case of an isolated aerodrome for helicopters operations, a validity period has been introduced and aligned with the requirement of (a), 2 hours before to 2 hours after the estimated time of arrival.

NCC.OP.155 Refuelling with passengers embarking, on board or disembarking

74. The rule is aligned with Part-CAT, CAT.OP.MPA.195. The text differentiates between aviation gasoline (AVGAS) and wide-cut fuels firstly, and other types of fuel. The rule is intentionally stricter than ICAO Annex 6 Part II and – in the interest of safety - does not allow that an aircraft is refuelled with Avgas (aviation gasoline) or wide-cut type fuel or a mixture of these types of fuel, when passengers are embarking, on board or disembarking.

NCC.OP.160 Use of headset

75. This rule is based on ICAO Annex 6 Part II and Part III. The rule specifies the conditions under which a headset should be used as the primary device to communicate with air traffic services (ATS). The text is aligned with the corresponding requirement in Part CAT, CAT.OP.MPA.215.

NCC.OP.165 Carriage of passengers

76. For clarity and consistency the term 'passengers' is used instead of 'persons' and 'restraint device' instead of 'harness'. Furthermore, the text addresses multiple occupancy of aircraft seats to enable the seating of one adult with one infant. This part of the text is aligned with CAT.OP.MPA.225.

NCC.OP.185 Ice and other contaminants – ground procedures

NCC.OP.190 Ice and other contaminants – flight procedures

77. Icing procedures are addressed in two requirements, the first one dealing with ground procedures and the second with flight procedures. It is aligned with the corresponding requirements in Part-CAT, CAT.OP.MPA.250 and 255.

NCC.OP.200 Simulated abnormal situations in flight

78. Many comments were raised asking to remove the specific requirement not to simulate IFR by artificial means with passengers on-board. The Agency still considers simulating such situations with passengers on-board is a safety issue and therefore this requirement has been kept.
79. Since NCC is applicable to Approved training Organisation performing training flights with complex aircraft, and due to the comments received, alleviation has been introduced in the rule to allow abnormal situations and IFR by artificial means to be simulated during training flights when carrying student pilots on-board.

NCC.OP.205 In-flight fuel management

80. Following a number of comments, and for consistency, the term final reserve fuel, which is not defined in NCC rule text, has been removed. The rule text now refers to the minimum fuel requirement for aeroplane and helicopters. The intent of the rule is to ensure that after landing the remaining fuel is not less than the fuel reserve required in NCC.OP.130 and NCC.OP.131.

NCC.OP.220 Airborne collision avoidance system (ACAS)

81. The requirements on the use of ACAS are aligned with Regulation 1332/2011.

NCC.OP.230 Commencement and continuation of approach

82. The objective of this rule is to prevent an operator from flying below 1 000 ft if the reported minima are below the established aerodrome operating minima.

VII. NCC.POL: Subpart C – Aircraft performance and operating limitations***General***

83. This Subpart contains rules for aircraft performance and operating limitations for non-commercial operations with complex aeroplanes and helicopters.
84. The rules address operating limitations, mass and balance, general performance requirements and specific performance requirements for specific flight phases...
85. Some commenters required to delete those requirements repeating some requirements of SERA Part-A. This is not done because SERA Part-A applies to EU airspace only and a reference to requirements of Rules of the Air is necessary to cover also operations conducted outside of the EU airspace.
86. Other comments required, especially for aeroplanes, to define more precisely criteria and guidance for landing performance. Doing so at rule level as it is done in Part-CAT would be disproportionate for non-commercial operations and therefore the Agency is considering to add criteria and guidance at AMC/GM level.
87. Several comments required to delete the reference made throughout Part-NCC to helicopters operating in Performance Classes 1, 2 or 3, as performance classes are only defined and relevant to Part-CAT operations as no such performance requirements are laid down for Part-NCC or even Part-NCO. Rules have been changed accordingly defining alternative criteria for helicopter performance.

NCC.POL.100 Operating limitations – all aircraft

88. The rule text has been maintained with minor editorial improvements compared to the NPA and CRD text.

NCC.POL.105 Mass and balance, loading

89. Mass and balance requirements for aeroplanes and helicopters have been kept together since only a few differences were identified between these aircraft classes. The resulting text has been aligned as far as feasible with Part-CAT. However, some CAT requirements have not been introduced and the balance between IR level and AMC/GM level has been improved, to allow sufficient flexibility and to account for different operational circumstances.
90. The requirements for weighing of aircraft have been maintained. The Agency may consider in future rulemaking task whether there is an overlap with airworthiness requirements and develop a dedicated rulemaking task for harmonization.
91. Provision for periodic aircraft reweighing has been deleted since the conditions for a reweighing are already sufficiently described in the new subparagraph (a).
92. Values for standard masses have been upgraded at rule level further to comments to provide more certainty. The future rulemaking tasks RMT.0312 & 0313 will also address standard mass values.
93. A table for the accuracy of weighing equipment has been added at AMC level.

NCC.POL.110 Mass and balance data and documentation***NCC.POL.111 Mass and balance data and documentation – alleviations***

94. The key elements of the mass and balance system and mass and balance documentation have been kept at IR level.
95. The text has been redrafted to state more clearly the intent and by introducing a separate rule with specific alleviations for helicopters.
96. A GM will describe in more detail the different computerised mass and balance systems that may be used.

NCC.POL.120 Take-off mass limitations – aeroplanes

97. This rule has been added to better clarify the safety objective as regards mass limitation and to align with Annex 6 Part II, 3.5.2.6.

NCC.POL.125 Take-off – aeroplanes

98. The amended text takes into account that not all aeroplanes have a V1 specified in the aircraft flight manual (AFM) and also better distinguishes between multi-engined aeroplanes where a net take-off flight path is specified in the AFM and multi-engined aeroplanes without a specified net take-off flight path.

NCC.POL.130 En-route - one engine inoperative - aeroplanes

99. The amended text specifies that, under performance consideration, the flight to an 'adequate aerodrome' should be considered and includes the possibility to fly to an operating site as permitted under NCC.OP.100.

NCC.POL.135 Landing - aeroplanes

100. The amended text includes the possibility to land at an operating site as permitted under NCC.OP.100.

VIII:NCC.IDE: Subpart D – Instrument, data, equipment***General***

101. This Subpart contains instrument, data and equipment requirements for NCC operations. It consists of two Sections:

- Section 1 – Aeroplanes;
- Section 2 - Helicopters;

102. The text has, in general, been drafted to keep performance-based objectives, where practical, at rule level and placing systems/equipment specifications and means of compliance at AMC level.

103. Equipment requirements were separated from purely operational requirements, e.g. on the use of equipment, which are properly addressed in NCC.OP.

104. The numbering of the rules has been kept consecutive in each section, giving the same number and title to rules on the same subject for aeroplanes and helicopters. Whenever a rule was peculiar to aeroplanes that number was skipped for helicopters and vice versa.

105. A new requirement has been introduced, (NCC.IDE.A/H.105 Minimum equipment for flight) to address operations with failed or missing items.

106. The first part of the original requirement on equipment for flight in icing conditions has been deleted, as it is already covered in Essential Requirement 2.a.5.

107. The approval requirements have been clarified, in line with the Part-21 requirements. Additional provisions have been added to ensure that instruments and equipment not required by Part-NCC that do not need to be approved in accordance with Part-21 are not used for safety functions and do not affect airworthiness. Moreover, applicability of airworthiness requirements for equipment approval on aircraft registered in third countries has been clarified and a GM been added. Provisions for approved and non-approved equipment are further clarified after comments.

NCC.IDE.A/H.105 Minimum equipment for flight

108. This paragraph provides the possibility to operate an aircraft outside of the constraints of the MEL but within the constraints of the MMEL, upon a specific case by case approval of the competent authority. This is consistent with the appropriate provision in Part-CAT.

NCC.IDE.A.110 Spare electrical fuses

109. A dedicated requirement for spare electrical fuses has been introduced for aeroplanes from the former NPA provision in OPS.CAT.407. This is in line with ICAO Annex 6 Part II, 2.4.2.2. As with CAT.IDE, an equivalent requirement has not been proposed for helicopters.

NCC.IDE.A/H.120&125 Operations under VFR/IFR – flight and navigational instruments and associated equipment

110. The proposed rules have been developed with the basic assumption that the flight rules for visual flight rules (VFR) will impose visual meteorological conditions (VMC) and that flight in instrument meteorological conditions (IMC) will have to be performed under IFR.

111. AMC will specify further means of compliance for local flights and specific instruments.

NCC.IDE.A/H.130 Additional equipment for single-pilot operation under IFR

112. Following the advice of experts flight crew workload for single pilot IFR operations has been taken into account adding a requirement more demanding than ICAO Annex 6 for an autopilot with at least altitude hold and heading mode.

NCC.IDE.A.135 Terrain awareness warning system (TAWS)

113. The proposed text is in line with the draft conclusions of NPA-OPS 39B. The specifications on TAWS functions have been included in the Class A & B definitions and therefore removed. A GM has been added to provide a reference for the TAWS standard.

NCC.IDE.A/H.140 Airborne collision avoidance system (ACAS)

114. The requirement for ACAS equipment has been simplified and aligned with Regulation 1332/2011.

NCC.IDE.A/H.160 Cockpit voice recorder***NCC.IDE.A/H.165 Flight data recorder***

115. Although ICAO Annex 6 Part II already required such equipment for some time, the implementation dates for NCC have been proposed in order to give sufficient notice to industry to comply. It has therefore been proposed to mandate recording for aircraft with a certificate of airworthiness (CofA) issued on or after 1 January 2016.

NCC.IDE.A/H.180 Seats, seat safety belts, restraint systems and child restraint devices

116. A dedicated requirement for seats, belts and restraint systems has been introduced. A definition for 'upper torso restraint' (UTR) has been also provided to offer flexibility for existing design solutions. The review of comments made it clear that the term 'harness' was not used consistently. While there seems to be a common understanding that a safety harness includes a safety belt and two shoulder straps, there are a number of aeroplanes that may not be in compliance with the applicable requirements. Several comments to the NPA were received requesting to allow the use of safety belts with a diagonal shoulder strap on the observer seat in the flight crew compartment on aeroplanes where the fitting of a four-point harness is not practicable. Considering the latest developments in aircraft interior designs, different design solutions for the upper torso restraint system can provide the same enhanced safety level for those observer seats.
117. Comments to the CRD in a few cases required start dates for the application of the requirement for UTRs on flight crew seats. This was not adopted as the intent of the rule after safety recommendations is to enhance the safety standards also for the existing fleet.

NCC.IDE.A.195 Supplemental oxygen – pressurised aeroplanes

118. This paragraph specifies now the percentage of passengers that shall be supplied with oxygen as the ICAO SARP to generically provide oxygen to a proportion of passengers was not enforceable.

NCC.IDE.A/H.200 Supplemental oxygen – non-pressurised aeroplanes/helicopters

119. These requirements have been redrafted in line with ICAO SARPs. Provisions for pressurised helicopters have been withdrawn (as for CAT.IDE). Alleviations for short incursions between 13 000 ft and 16 000 ft will have to be handled through Article 14 of the Basic Regulation. These further exemptions are not in line with ICAO SARPs and to be approved should be based on specific mitigating measures (e.g. operator's experience, pilot's physiological adaptation to certain altitudes). Furthermore, they would usually be achievable only in certain regions (i.e. mountainous areas).

NCC.IDE.A/H.205 Hand fire extinguishers

120. A dedicated rule for hand fire extinguishers has been drafted. Provisions mandating the use of the extinguishing agent Halon were removed to comply with Regulation (EC) No 1005/2009⁶, which will forbid its use. The rule contains a general safety objective on the efficiency of the fire extinguishing agent. This allows the continued use of Halon during the transition period.

⁶ Regulation (EC) No 1005/2009 of the European Parliament and of the Council of 16 September 2009 on substances that deplete the ozone layer. *OJ L 286, 31.10.2009, p. 1.*

Equipment requirements for helicopters operated over water and offshore

121. The following set of requirements has been revised and redrafted to be consistent with the equivalent CAT.IDE rules, due to the similar safety concerns for these kind of operations for CAT and NCC:

- NCC.IDE.H.225 Life-jackets
- NCC.IDE.H.226 Crew survival suits
- NCC.IDE.H.227 Life-rafts, survival ELTs and survival equipment on extended overwater flights
- NCC.IDE.H.230 Survival equipment
- NCC.IDE.H.231 Additional requirements for helicopters conducting offshore operations in a hostile sea area
- NCC.IDE.H.232 Helicopters certified for operating on water - miscellaneous equipment
- NCC.IDE.H.235 All Helicopters on flights over water – ditching.

122. In particular, the following has to be noted:

- Most of these requirements are in line with ICAO Annex 6 Part II.
- Those more stringent than ICAO are NCC.IDE.H.226 and NCC.IDE.H.231 where, in line with CAT.IDE, the results of existing studies and former JAA NPAs on survival time in cold water have been taken into account.

123. Comments were received considering the above requirements disproportionate for non-commercial operations. This has been taken into account for those requirements related to extended flight over water and ditching for helicopters. However it was maintained an higher standard of safety in terms of equipment for those requirements related to offshore operations.

124. Furthermore, following comments received, it has been clarified that life jackets are not necessarily to be stowed in certain locations readily available for use but may be also directly worn by the persons for whose use they are provided.

NCC.IDE.A/H.240 Headset

125. A dedicated equipment requirement for headset has been introduced beyond pure ICAO requirements coherently with the operational requirement NCC.OP.165 on the use of the headset.

NCC.IDE.A/H.250 Navigation equipment

126. The following additional requirements have been introduced in line with ICAO Annex 6 Part II 3.7.1:

- capability of conducting two-way communication for aerodrome control purposes; and

- capability of receiving meteorological information at any time during flight.

NCC.IDE.A.260 Electronic navigation data management

127. Paragraph (a) of this rule provides the general intent and the corresponding AMC specifies that if electronic data are used to support an application as a primary means for navigation, then a letter of acceptance (LoA) is required. For any other application needed to support SPA operations, an approval is required. This has been clarified in paragraph (b).

Annex VI - Part-NCO (A.H.S.B)**I. Scope**

128. Part-NCO should be read together with:

- the Cover Regulation on Air Operations in particular concerning applicability dates and transition periods;
- Annex I – Definitions for terms used in Annexes II to VIII;
- Annex II – Part-ARO containing, among others, authority requirements for NCO operators relating to oversight responsibilities and the list of specific approvals; and
- Annex V - Part-SPA, which contains the requirements for operations requiring a specific approval.

129. Part-NCO contains the technical requirements for non-commercial operations of other-than-complex motor-powered aeroplanes, helicopters, sailplanes and balloons. It consists of four Subparts which for instruments, data and equipment are further broken down to Sections containing aircraft category specific rules.

130. The structure of the Subparts is comparable to the structure of the Essential Requirements in Annex IV of the Basic Regulation and ICAO Annex 6.

131. The rule structure, and in particular the Sections, have been designed in such a way that requirements for additional aircraft categories, or specific operations, could be added in the future without the need to make changes to the existing rule text or the existing structure. It should be noted that future rulemaking tasks will develop the requirements for airships, tethered balloons and unmanned aerial systems.

132. Figure 7 and Figure 8 provide an overview of the structure of Part-NCO.

Figure 7: Structure of Part-NCO – Headings

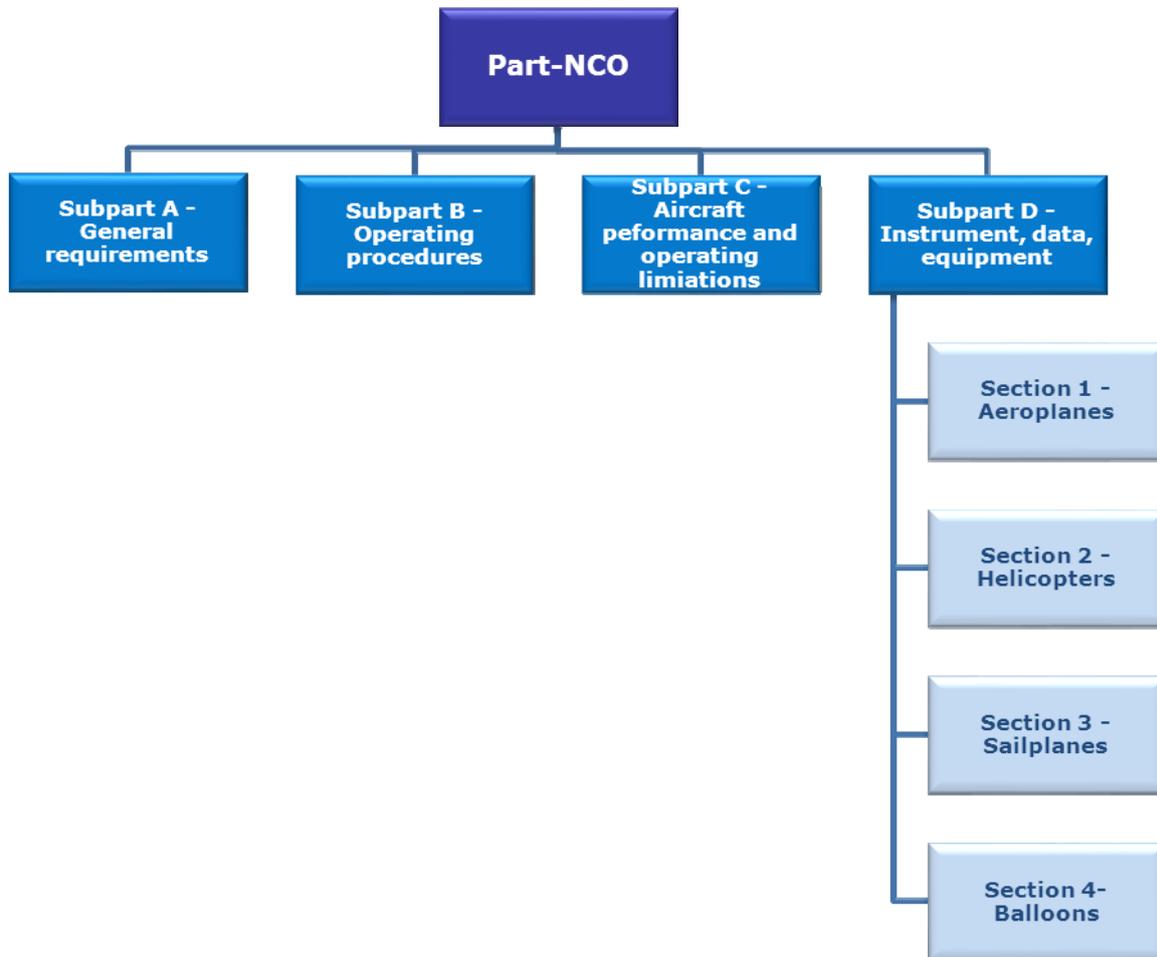
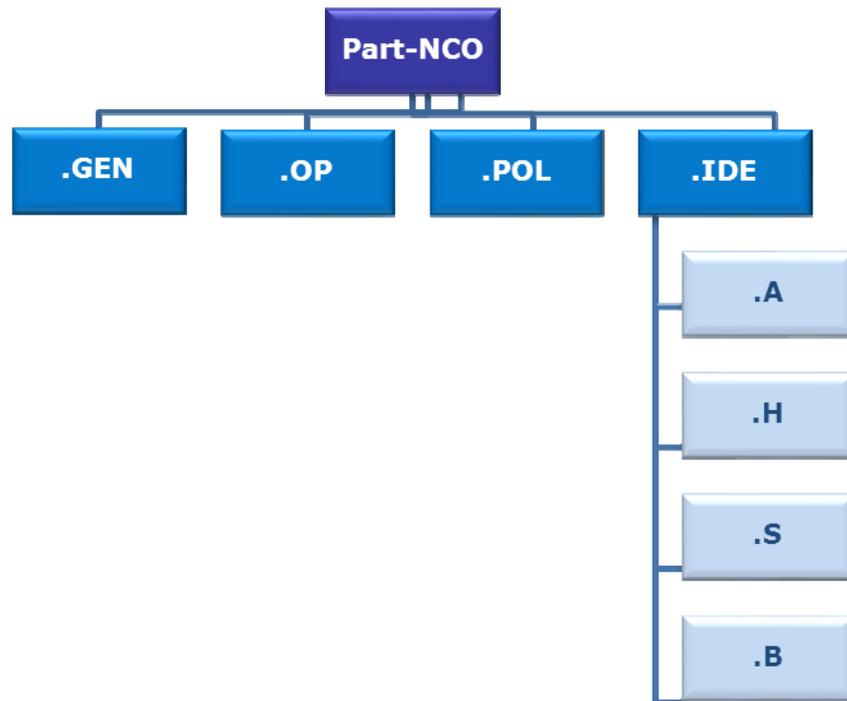


Figure 8: Structure of Part-NCO – Rule identifiers

II. Overview of reactions

133. 450 comments submitted by 50 commenters were received for Part-NCO.

134. In general, commenters required much lighter requirements for NCO compared to Part-NCC, often proposing further alleviations for light and very light aircraft, especially with regards to equipment.

135. A joint reaction was submitted by the RG04 to highlight controversial issues for which consensus was not reached during the meetings and to highlight further differences between the text discussed in the meeting and the final version of the CRD stemming from the consistency check performed by the Agency among the different OPS Parts. Although the Agency acknowledges the rationale behind each request it has to be noted that balance should be kept between, safety, proportionality for general aviation and compliance with ICAO SARPs. Specific items are presented in the following.

136. Several comments were made in order to restore certain alleviations originally contained in the NPA 2009-2b, such as those for aerobatic flights. Most of these alleviations are deleted from Part NCO as they will be addressed in Part-SPO.

137. One Member State highlighted that at various points within Part-NCO, the term 'MOPSC' (maximum operational passenger seating configuration) has been used which is not appropriate as NCO operations are not required to be conducted in accordance with an Operations Manual where a MOPSC would be determined. Terminology has been replaced with 'certificated maximum passenger seating configuration'.

III. Overview of differences

Differences to ICAO Annex 6

138. The following table provides an overview of ICAO Annex 6 Part II Section 2 and Part III Section 3 standards that are considered to be either not transposed or transposed in a way that does not provide at least an equivalent level of safety as specified in ICAO Annex 6.

Table 7: Differences to ICAO Annex 6

Annex 6 Part I/III reference	EASA-EU reference	Description of difference
Annex 6 Part III Sect III 4.3.2.1 b)	NCO.IDE.H.175(c)(2)	Carriage of life rafts is determined by the Pilot-in-command based on a risk assessment for the intended flight.

V. NCO.GEN: Subpart A – General requirements

139. This Subpart contains general requirements for NCO operations.

General

140. Some concerns have been raised about the relevant competent authority for aircraft registered in a third country. Regulation (EC) No 216/2008 is applicable to aircraft registered in a third country and operated in the Union. The determination of the competent authority is based on the State of registry of the aircraft. For aircraft registered in a third country, the criterion used is the State where the operator is established or residing. Indeed, as the operator can be either an entity (aero-club) or a natural person, the determination of the competent authority needs to take into account both situations where the entity is established or where the pilot is residing. NCO.GEN.100 has been drafted in accordance with article 4.1 of Regulation (EC) No 216/2008.

141. Several comments were received stating that due to the limited space available in the cockpit of some NCO aircraft further alleviation to NCO.GEN.135, dealing with documents, manuals and information to be carried should be provided. It must be noted that NCO.GEN.135 already provides for flights departing and arriving at the same place a possibility to keep most of the required documentation at the aerodrome or operating site.

142. Some comments requested to clarify the content of NCO.GEN.125 on Portable Electronic Devices (PED). New AMC/GM are going to be developed to provide further guidance on PED.

143. Several stakeholders commented the need to have the MEL approved while the MEL is not mandatory under NCO.GEN.155. It is the opinion of the Agency that a MEL, if

defined, must stay within the control of the competent authority or, in case of aircraft registered in a third country, the State of Registry. The MEL provides for exemptions from the rules which require appropriate oversight.

144. Due to the comments received on NCO.GEN.135(a)(1), an AMC is going to be provided to provide a mean of complying with the requirement to carry the AFM on-board for balloons operations.
145. Since an aircraft Certificate of Airworthiness (C of A) is considered to be valid only upon the attachment of a valid Airworthiness Review Certificate (ARC) and considering that a special mention of the C of A is already stating that a current ARC shall be attached to the C of A, the ARC has not been included in the required document to be carried in NCO.GEN.135 in order not to duplicate the requirement.
146. Many comments were received asking for more exemptions in NCO.GEN.140 to be able to carry on-board items that are normally considered as dangerous goods. The Agency has some concerns about these additional exemptions and considers exemptions already provided by the ICAO technical instructions shouldn't be extended.

NCO.GEN.101 Means of compliance

147. Since Part ORO is not applicable to NCO operators, a new rule text has been added to state that alternative means of compliance to those adopted by the Agency may be used by the operators. Those alternative means of compliance do not need a prior approval from the competent authority.

NCO.GEN.102 Touring motor glider and powered sailplanes

148. The purpose of this requirement is to clarify the applicable rules for touring motor gliders as they are sometimes operated as sailplanes and at other times as aeroplanes.

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

NCO.GEN.106 Pilot-in-command responsibilities and authority – balloons

149. In accordance with the new drafting principles, the IR make a reference to the Essential Requirements in Annex IV of the Basic Regulation, where such requirements are addressed in more detail in the IR.
150. Additional responsibilities of the pilot-in-command (PIC) of a balloon have been laid down in a separate requirement.
151. A new requirement, introducing the concept of critical phase of flight, has been added to ensure that only safety related activities are carried out during those phases of flight.

NCO.GEN.115 Taxiing of aeroplanes

152. The designation of the persons with the right to taxi an aeroplane is now under the responsibility of the operator.
153. Due to the comments received especially on the requirement to be trained to use a radio telephone, alleviation has been provided for aerodrome where radio communications are not required. This modification also aligns this requirement with ICAO Annex 6 part II.
154. Following a few comments, a GM is going to be added to provide some guidance on the skills and knowledge required in order to be able to conform to the operational standards required for safe aeroplane movement at the aerodrome.

NCO.GEN.120 Rotor engagement

155. The text describes the conditions for the rotor engagement for flight and maintenance reasons, and is aligned with Part-CAT, CAT.GEN.MPA.130.

NCO.GEN.125 Portable electronic devices

156. The text requires not to use PED that may adversely affect the aircraft and is aligned with Part-CAT, CAT.GEN.MPA.135.

NCO.GEN.130 Information on emergency and survival equipment carried

157. Due to the comments received, alleviation has been provided to the requirement to have list of emergency equipment available at all time. Aircraft taking-off and landing at the same aerodrome/operating site do not need to comply with this requirement.

NCO.GEN.140 Transport of dangerous goods

158. This requirement addresses the circumstances under which dangerous goods might be carried without holding an approval in accordance with SPA.DG. This concerns, for example, items carried in passengers' baggage that are normally considered as dangerous goods.
159. The reporting requirement for undeclared or misdeclared dangerous goods has been removed since it is considered not to be relevant for non-commercial operations.
160. The approach taken by the Agency is to work with a dynamic reference to the ICAO Technical Instructions, as presented in the NPA. The reference is specified in the IR. Extracts from the Technical Instructions are not generally included in these rules. Only requirements specifying particular operator responsibilities have been repeated from the Technical Instructions.
161. The term 'Technical Instructions' is defined in Annex I (as published in Opinion 04/2011).

NCO.GEN.145 Immediate reaction to a safety problem

162. The Agency considers it necessary to introduce the obligation for the operator conducting NCO operations to implement the safety measures issued by the competent authority and mandatory safety information issued the Agency such as Airworthiness Directives.

NCO.GEN.155 Minimum equipment list

163. In principle, a MEL is not required for NCO operations. However, it might be elected, on a voluntary basis, to have one. If such is the case, the MEL requires the approval by the competent authority. The MEL of a third country registered aircraft must be approved by the State of registry.

VI. NCO.OP: Subpart B – Operating procedures

164. This Subpart contains requirements for operating procedures for NCO operations.

General

165. The requirements for LVTO are aligned with the Part-CAT and Part-SPA proposal requiring a Part-SPA approval for any take-off below 400m.

166. Many comments were received asking to amend the method of calculating operating minima and have it more adapted to NCO operation. It should be noted that this method, which is aligned with CAT and NCC method, has been inserted in a guidance material (GM3-NCO.OP.110) and therefore is for information only. The Pilot-in-command may apply other methods.

167. Some stakeholders required the Agency to remove in NCO.OP.125/126 the need to account additional fuel for cases of loss of pressurisation or failure of one engine while en route. Based on the Essential Requirement 2.(a)(7) which requires operators to carry reserve fuel to provide for contingencies, the Agency considers that these conditions are part of these contingencies and essential for a safe flight. Therefore this NCO requirement has been kept aligned with NCC requirement.

168. Several comments were received asking to modify NCO.OP.165 to allow beginning a VFR flight even if the weather conditions on the route to the destination are not compatible with VFR rules provided an alternate route to one or more alternate aerodrome meets the required VFR conditions. If implemented, the resulting requirement would be below the safety level established by ICAO. The Agency doesn't intend to go below ICAO requirements and couldn't establish compelling safety arguments to allow such flights.

169. Many stakeholders expressed their concerns over NCC.OP.155 and NCC.OP.156 related to the selection of destination alternate aerodromes for aeroplanes and helicopters. It is not the intent of the rule, as expressed in the comments, to require destination and alternate aerodrome to be weather permissible at the same time. As mentioned in these rules, an alternate has to be selected complying with the

applicable weather requirements if the weather at the destination is below the minimum.

170. A number of comments were received asking for the modification of paragraph (a)(11) of NCO.OP.135 dealing with the meteorological information to be used by the pilot-in-command by removing the word aeronautical. The ICAO Annex 6 Part II requirement is based on current and suitable charts which in fact refers to the definition of aeronautical charts as contained in ICAO Annex 4. Nevertheless this requirement doesn't prevent operators to use other available charts but only in addition to the current aeronautical charts which are the only charts on which all the necessary aeronautical information are provided.

171. Following comments received on the use of a DA(H) when flying non-precision approaches using the continuous descent final approach technique which may lead to flying below the MDA(H) in case of a missed approach, an AMC to NCC.OP.111 is going to be added to further clarify the responsibility of the operator to develop procedures to prevent flying below the MDA/MDH during go around/ missed approach.

NCO.OP.105 Specification of isolated aerodromes - aeroplanes

172. The rule has been simplified and only refers to the flying time to the nearest adequate alternate aerodrome.

173. It should be noted, that the term is not defined for helicopter operations and it is understood that the operator would specify the selection criteria in the operations manual. It is considered that due the characteristic of helicopters there is no need to add a specific definition of an isolated aerodrome.

NCO.OP.110 Aerodrome operating minima – aeroplanes and helicopters

174. This requirement has been designed to reflect NCO operations and to ensure the principle of proportionality.

175. The operator is not required to establish aerodrome minima but may use commercially available operating minima. This is aligned with ICAO Annex 6 Part II Section 2.

NCO.OP.111 Aerodrome operating minima – NPA, APV, CAT I operations

NCO.OP.112 Aerodrome operating minima – circling operations with aeroplanes

NCO.OP.113 Aerodrome operating minima – circling operations with helicopters

176. These requirements are aligned with the NCC rule.

NCO.OP.120 Noise abatement procedures – aeroplanes, helicopters and powered sailplanes

177. The text is split into aircraft-specific rules. Noise abatement procedures rules for aeroplanes/helicopters/powered sailplanes and balloons are addressed to the pilot-

in-command and include the objective that safety should have priority over noise abatement. It is based on ICAO Annex 6 Part II and III recommendations.

NCO.OP.125 Fuel and oil supply – aeroplanes

NCO.OP.126 Fuel and oil supply - helicopters

178. The text is split into aircraft-specific rules and aligned with ICAO Annex 6 Part II and III.

179. Following comments received, alleviation has been introduced for aeroplanes taking-off and landing at the same aerodrome and staying in sight of the aerodrome. In this case the fuel required has been reduced to 10 min in addition to the fuel necessary to return to the aerodrome.

NCO.OP.130 Passenger briefing

180. The text is adapted to NCO operations foreseeing that the briefing be provided before or during the flight.

NCO.OP.135 Flight preparation

181. As a result to the comments received, a GM is going to be added to provide some guidance on the possible use of an operational flight plan (OFP) to meet the requirement on the flight preparation. ICAO also does not mandate an OFP for non-commercial operations.

NCO.OP.140 Destination alternate aerodrome – aeroplanes

NCO.OP.141 Destination alternate aerodrome – helicopters

182. The text for the destination alternate aerodrome is split into aircraft-specific requirements.

183. For clarification and consistency NCO.OP.141(a) has been amended to include a requirement for an instrument approach procedure on the destination aerodrome since the rule was referring to minimum associated to the instrument procedure.

184. In case of an isolated aerodrome for helicopters operations, a validity period for the meteorological conditions required at the destination has been introduced. It is aligned with the requirement of (a), which specifies an interval of 2 hours before to 2 hours after the estimated time of arrival.

NCO.OP.145 Refuelling with passengers embarking, on board or disembarking

185. Following a number of comments, the possibility to refuel an aircraft with passengers embarking, on board or disembarking has been reintroduced with the same restrictions as NCC.

NCO.OP.170 Ice and other contaminants – ground procedures***NCO.OP.175 Ice and other contaminants – flight procedures***

186. Icing procedures are addressed in two requirements: the first one dealing with ground procedures and the second with flight procedures. It is compliant with the Essential Requirements (2.a.5 of Annex IV) and puts the obligation on the PIC.

NCO.OP.185 Simulated abnormal situations in flight

187. Many comments were raised asking to remove the specific requirement not to simulate IFR by artificial means with passengers on-board. The Agency still considers simulating such situations is a safety issue with passengers on-board and therefore this requirement has been kept.

188. However since NCO is applicable to Approved training Organisation performing training flights with other than complex aircraft, and due to the comments received, alleviation has been introduced to allow abnormal situations and IFR by artificial means to be simulated during training flights when carrying student pilots on-board

NCO.OP.190 In-flight fuel management

189. Following a number of comments, and for consistency, the term final reserve fuel, which is not defined in NCO rule text, has been removed, and a reference to the fuel requirement for aeroplanes and helicopter has been added to clarify the requirement. The intent of the rule is to ensure that after landing the remaining fuel is not less than the fuel reserve required in NCO.OP.125 and NCO.OP.126.

NCO.OP.200 Ground proximity detection

190. Based on ICAO Annex 6 Part II, only some NCO aeroplanes are required to be equipped with a TAWS. Therefore this requirement is addressing the operational requirement on the use of TAWS. This text is aligned with Part-NCC.

NCO.OP.205 Airborne collision avoidance system (ACAS)

191. This requirement has been added to ensure that when ACAS is installed, it is used in accordance with Regulation (EU) No 1332/2011.

VII. NCO.POL: Subpart C – Aircraft performance and operating limitations***General***

192. This Subpart contains rules for aircraft performance and operating limitations for non-commercial operations with other-than-complex motor-powered aircraft.

NCO.POL.100 Operating limitations

193. The text of the NPA is reproduced in the new rule text, with one additional paragraph on the display of placards, listings and instrument markings that contain those operating limitations.

NCO.POL.105 Weighing – aeroplanes and helicopters

194. Many comments underlined that this requirement should not be in the OPS rules but should be covered under Part-M rules. The requirements for weighing of aircraft have been kept, in this Regulation to avoid legislative loop holes as currently is not addressed in Part M. It might be considered as an item for future rulemaking tasks.

195. Provision for periodic aircraft reweighing has been deleted since the conditions for a reweighing are already sufficiently described in the new subparagraph (a).

VIII:NCO.IDE: Subpart D – Instrument, data, equipment

196. This Subpart contains instrument, data and equipment requirements for NCO operations. It consists of four Sections:

- Section 1 – Aeroplanes;
- Section 2 - Helicopters;
- Section 3 – Sailplanes;
- Section 4 – Balloons.

197. The text has been generally drafted keeping performance-based objectives where practical, i.e. at rule level and giving systems/equipment specifications and means of compliance at AMC level.

198. Equipment requirements were separated from purely operational requirements, e.g. on the use of equipment, which are properly addressed in NCO.OP.

199. The numbering of the rules has been kept consecutive in each section, giving the same number and title to rules on the same subject for aeroplanes and helicopters. Whenever a rule was peculiar to aeroplanes that number was skipped for helicopters and vice versa.

200. A new requirement has been introduced (NCO.IDE.A/H.105 Minimum equipment for flight) to address operations with failed or missing items.

201. Since an ICAO reference was not available for Sailplanes and Balloons, equipment and instruments requirements for these two aircraft categories have been drafted with the help of experts and based on existing national standards and regulations.

NCO.IDE.A/H/S/B.100 Instruments and equipment - general

202. The approval requirements have been clarified in line with the Part-21 requirements. Additional provisions have been added to ensure that instruments and equipment not required by Part-NCO that do not need to be approved in

accordance with Part-21 are not used for safety functions and do not affect airworthiness. Moreover, applicability of airworthiness requirements for equipment approval on aircraft registered in third countries has been clarified. A GM has been added with this purpose. Provisions for approved and non-approved equipment are further clarified after comments.

NCO.IDE.A.110 Spare electrical fuses

203.A dedicated requirement for spare electrical fuses has been introduced for aeroplanes from the former NPA provision in OPS.CAT.407. This is in line with ICAO Annex 6 Part II, 2.4.2.2. As with CAT.IDE and NCC.IDE, an equivalent requirement has not been proposed for helicopters.

NCO.IDE.A/H.120&125 Operations under VFR/IFR – flight and navigational instruments and associated equipment

204.The proposed rules have been developed with the basic assumption that the flight rules for VFR will impose VMC and that flight in IMC will have to be performed under IFR.

205.An AMC has been added for local flights, in line with CAT.IDE, providing additional means of compliance for some instruments on aeroplanes.

206.For helicopters, the condition of visibility below 1500 m is added to those requiring additional equipment for operations under VFR.

207.An AMC has been added on means of measuring and displaying magnetic direction.

208.A requirement has been added for a means of preventing malfunction of the airspeed indicating system for certain operation under VFR in compliance with ICAO Annex 6. Further to comments it is clarified that such requirement does not apply to VFR flight at night but only in those conditions where the aircraft cannot be maintained in the desired flight path without additional instruments and when the visibility is less than 1500 m.

209.An AMC has been added on the means of preventing malfunctions of the airspeed indicating system due to condensation or icing.

NCO.IDE.H.126 Additional equipment for single pilot operation under IFR

210.It is proposed to add a requirement for an autopilot with at least altitude hold and heading mode for helicopters operated under IFR, based on existing certification requirements for augmentation stability, and on the safety recommendation from the UK AAIB contained in the Aircraft Accident Report AAIB 4/97.

NCO.IDE.A/H.140 Seats, seat safety belts, restraint systems and child restraint devices**NCO.IDE.S.125 Seats and restraint systems**

211. A dedicated requirement for seats, belts and restraint systems has been introduced. A definition for 'upper torso restraint' (UTR) has been also provided to offer flexibility for existing design solutions. The review of comments made it clear that the term 'harness' was not used consistently. While there seems to be a common understanding that a safety harness includes a safety belt and two shoulder straps, there are a number of aeroplanes that may not be in compliance with the applicable requirements. Several comments were received requesting to allow the use of safety belts with a diagonal shoulder strap on aeroplanes where the fitting of a four-point harness is not practicable. In particular for NCO operations an upper torso restraint system with one shoulder strap (e.g. a seat belt with diagonal shoulder strap) is deemed to be compliant with the requirement for flight crew seats.
212. Comments to the CRD in a few cases required start dates for the application of the requirement for UTRs on flight crew seats. This was not adopted as the intent of the rule after safety recommendations is to enhance the safety standards also on the existing fleet. Furthermore the possibility to use diagonal belts in NCO to fulfil the requirement provides enough flexibility.

Equipment requirements on oxygen

213. The following rules were extensively commented on and discussed:
- NCO.IDE.A.150 Supplemental oxygen – pressurised aeroplanes; and
 - NCO.IDE.A/H.155 Supplemental oxygen – non-pressurised aeroplanes/helicopters.
214. The Agency received several comments suggesting to alleviate these rules for NCO, based on current operational practice in some Member States and ICAO SARPs (mainly Annex 6 Part II, 2.2.3.8).
215. Review Group 04 provided evidence that in Europe there are no records of accidents due to lack of oxygen occurring below 14 000 ft and also expressed a safety concern about the constraint to hold aircraft at low flight levels when flying in cloud and icing conditions if not equipped with oxygen.
216. The Agency reviewed all comments and material received on this subject and pointed out the following:
- Requirements for pressurised helicopters have been deleted as in CAT.IDE and NCC.IDE, since there are no pressurised helicopters operated in the EU.
 - Requirements for non-pressurised helicopters are in line with ICAO Annex 6 Part III, Section III 2.9, which requires the carriage of oxygen when flying for more than 30 minutes between 10 000 ft and 13 000 ft and for any period where the altitude is above 13 000 ft.
 - The current proposed text for aeroplanes has been kept aligned with NCC.IDE requirements and is intentionally above the current ICAO standards. In fact, the ICAO standard relies completely on the assessment of the pilot-in-

command, thus theoretically allowing flight at any altitude without oxygen. This is considered to be too weak since the aircraft share the airspace with other air traffic. Thus, hypoxia of the pilot could lead to dangerous situations putting an unacceptable risk to third parties.

- The Agency took in particular into account that human physiology is not different depending on the nature of operations conducted (commercial or non-commercial) or the complexity of the aircraft. Therefore, the proposed text implements the content provided in Attachment 2.A of ICAO Annex 6 Part II and requires to carry supplemental oxygen as also foreseen in Part-CAT and Part-NCC.
- The Agency also acknowledges the assessments carried out by ICAO on this subject, available in Doc 8984 in the last amended version of 2008. This document contains in particular a description of the effects of hypoxia at different altitudes and substantiates the necessity of the requirement.
- It is recognised that pilots with a long established flying experience in certain mountainous regions may be physiologically adapted to these altitudes. However, based on medical studies mentioned above, the Agency also has safety concerns on such flights where a lack of oxygen can result in a cognitive impairment or (partial) incapacitation of the pilot. In addition, passengers with underlying medical conditions may be adversely affected by an oxygen deficiency.
- Alleviations will have to be handled through Article 14 of the Basic Regulation and should be based on specific mitigating measures (e.g. operator's experience, pilot's physiological adaptation to certain altitudes). Furthermore, they would usually be achievable only in certain regions (i.e. mountainous areas).

217. In addition, the proportion of passengers that shall be supplied with oxygen in pressurised aeroplanes is specified.

NCO.IDE.A/H.160 & NCO.IDE.B.125 Hand fire extinguishers

218. Provisions on hand fire extinguishers mandating the use of the extinguishing agent Halon were removed to comply with Regulation (EC) No 1005/2009, which will forbid its use. The rule contains a general safety objective on the efficiency of the fire extinguishing agent. This allows the continued use of Halon during the transition period.

219. The Agency assessed the proposal of the Review Group, along with other comments received, to exempt light aeroplanes and helicopters (below 2 000 kg maximum take-off mass) from the requirement to carry a fire extinguisher. Such an exemption, however, would render the NCO rules non-compliant with Annex 6 Part II (2.4.2.2) and Part III Section III (4.1.3.1). The Agency took also into account that in accordance with the latest available supplement to Annex 6 only two Member States filed a difference to the ICAO Standard and assumed that the majority of Member States therefore implemented this rule in their national regulations. Therefore, the rule has been kept.

220. However, touring motor gliders (TMGs) and sailplanes have been excluded from this requirement for the following reasons:

- the space available in the cockpit is limited or for some types there is no space available at all; or
- the fire extinguisher could only be fitted behind the pilot's head which could endanger the safety of the pilot.

NCO.IDE.A/H.170 Emergency locator transmitter (ELT)

NCO.IDE.S.135 & NCO.IDE.B.130 Flight over water

221. Based on comments received, the Agency has assessed the possibility to use a personal locator beacon (PLB) in place of an emergency locator transmitter for certain small aircraft and verified that an equivalent level of safety is provided. Relevant AMC and GM on PLBs have also been added. Although an equivalent level of safety is provided, this will differ from ICAO Annex 6 SARPs on ELTs. It is also further clarified that PLBs are an alternative to ELTs which may continue to be used on small aircraft if so desired.

NCO.IDE.H.175 Flight over water

222. Furthermore, following comments received, it has been clarified that life jackets are not necessarily to be bestowed in certain locations readily available for use but may be also directly worn by the persons for whose use they are provided.

NCO.IDE.S.110 Operating lights

223. The requirement is deleted for sailplanes as there is no night rating in Part-FCL for this category of aircraft.

ACRONYMS/ABBREVIATIONS USED IN Part-NCC AND Part-NCO**- for reference only -**

AAC	aeronautical administrative communication
AAD	assigned altitude deviation
AAL	above aerodrome level
AC	alternating current
ACAS II	airborne collision avoidance system II
ADF	automatic direction finder
ADG	air driven generator
ADS	automatic dependent surveillance
ADS-B	automatic dependent surveillance - broadcast
ADS-C	automatic dependent surveillance - contract
AeMC	aero-medical centre
AEO	all engines operating
AFCS	automatic flight control system
AFM	aircraft flight manual
AFN	aircraft flight notification
AFN	ATS Facilities Notification
AGL	above ground level
AHRS	attitude heading reference system
AIS	aeronautical information service
ALS	approach lighting system
ALSF	approach lighting system with sequenced flashing lights
AMC	acceptable means of compliance
AMSL	above mean sea level
ANP	actual navigation performance
AOC	air operator certificate
APCH	approach
APU	auxiliary power unit
APV	approach procedure with vertical guidance
AR	ATS route
AR	authorisation required
AR	Authority Requirements

ARA	airborne radar approach
ASC	Air Safety Committee
ASDA	accelerate-stop distance available
ATC	air traffic control
ATO	approved training organisation
ATPL	airline transport pilot licence
ATQP	alternative training and qualification programme
ATS	air traffic services
AVGAS	aviation gasoline
AVTAG	wide-cut fuel
B-RNAV	basic area navigation
BALS	basic approach lighting system
CAP	controller access parameters
CDFA	continuous descent final approach
CDL	configuration deviation list
CFIT	controlled flight into terrain
CG	centre of gravity
cm	centimetres
CM	configuration/context management
CMA	continuous monitoring approach
CMV	converted meteorological visibility
CMPA	complex motor-powered aircraft
CofA	certificate of airworthiness
CPA	closest point of approach
CPDLC	controller pilot data link communications
CPL	commercial pilot licence
CRM	crew resource management
CRT	comment response tool
CVR	cockpit voice recorder
DA	decision altitude
D-ATIS	Data Link - Automatic Terminal Information Service
DC	direct current
DCL	departure clearance
DDM	difference in depth of modulation
D-FIS	data link flight information service
DGOR	dangerous goods occurrence report
DH	decision height

DME	distance measuring equipment
D-OTIS	Data Link - Operational Terminal Information Service
DR	decision range
DSTRK	desired track
EASP	European Aviation Safety Programme
EC	European Commission
EFB	electronic flight bag
EFIS	electronic flight instrument system
EGT	exhaust gas temperature
ELT(AD)	emergency locator transmitter (automatically deployable)
ELT(AF)	emergency locator transmitter (automatic fixed)
ELT(AP)	emergency locator transmitter (automatic portable)
ELT(S)	survival emergency locator transmitter
EPE	estimate of position error
EPR	engine pressure ratio
EPU	estimate of position uncertainty
ERA	en-route alternate (aerodrome)
ESSG	European SAFA Steering Group
ETOPS	extended range operations with two-engined aeroplanes
ETSO	European technical standards order
EUROCAE	European Organisation for Civil Aviation Equipment
EVS	enhanced vision system
FAA	Federal Aviation Administration
FAF	final approach fix
FAK	first-aid kit
FALS	full approach lighting system
FANS	future air navigation system
FAP	final approach point
FATO	final approach and take-off area
FDM	flight data monitoring
FDR	flight data recorder
FFS	full flight simulator
FI	flight instructor
FL	flight level
FM	frequency modulator
FMS	flight management system
FOR	field of regard

FOV	field of view
FSTD	flight simulation training device
ft	feet
FTD	flight training device
g	gram
g	gravity
GBAS	ground-based augmentation system
GCAS	ground collision avoidance system
GIDS	ground ice detection system
GLS	GBAS landing system
GM	Guidance Material
GNSS	global navigation satellite system
GPS	global positioning system
GPWS	ground proximity warning system
HEMS	helicopter emergency medical service
HF	high frequency
HI/MI	high intensity / medium intensity
HIALS	high intensity approach lighting system
HLL	helideck limitations list
HoT	hold-over time
hPa	hectopascal
HUD	head-up display
HUDLS	head-up guidance landing system
IAF	initial approach fix
IALS	intermediate approach lighting system
ICAO	International Civil Aviation Organisation
IF	intermediate fix
IFR	instrument flight rules
IGE	in ground effect
ILS	instrument landing system
IMC	instrument meteorological conditions
inHg	inches of mercury
INS	inertial navigation system
IORS	internal occurrence reporting system
IP	intermediate point
IR	Implementing Rule
IRNAV/IAN	integrated area navigation

IRS	inertial reference system
ISA	international standard atmosphere
IV	intra-venous
JAA	Joint Aviation Authorities
JAR	Joint Aviation Requirements
JET 1 / A / A1	kerosene
JET B	wide-cut fuel
JIP	Joint Implementing Procedure
JP-4	wide-cut fuel
km	kilometres
kN	kilonewton
KSS	Ktitorov, Simin, Sindalovskii formula
kt	knot
LAT/LONG	latitude/longitude
LED	light-emitting diode
LIFUS	line flying under supervision
LNAV	lateral navigation
LoA	letter of agreement
LOC	localiser
LOE	line oriented evaluation
LOFT	line oriented flight training
LOS	limited obstacle surface
LOUT	lowest operational use temperature
LP	localiser performance
LPV	lateral precision with vertical guidance approach
LRNS	long range navigation system
LVO	low visibility operations
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 certificated take-off mass
MDA	minimum descent altitude

MDA/H	minimum descent altitude/height
MDH	minimum descent height
MEA	minimum safe en-route altitude
MEL	minimum equipment list
METAR	meteorological aerodrome report
MGA	minimum safe grid altitude
MHz	Megahertz
MID	midpoint
ml	millilitres
MLS	microwave landing system
MMEL	master minimum equipment list
MNPS	minimum navigation performance specifications
MOC	minimum obstacle clearance
MOCA	minimum obstacle clearance altitude
MOPS	minimum operational performance standard
MORA	minimum off-route altitude
MPSC	maximum passenger seating configuration
mSv	millisievert
NADP	noise abatement departure procedure
NALS	no approach lighting system
NAV	navigation
NDB	non-directional beacon
N_f	free power turbine speed
NM	nautical miles
NOTAM	Notice to Airmen
NPA	non-precision approach
NVG	night vision goggles
OAT	outside air temperature
OCH	obstacle clearance height
OCL	oceanic clearance
ODALS	omnidirectional approach lighting system
OEI	one-engine-inoperative
OFS	obstacle-free surface
OGE	out of ground effect
OIP	offset initiation point
OM	operations manual
ONC	operational navigation chart

OSD	operational suitability data
otCMPA	other-than-complex motor-powered aircraft
PAPI	precision path approach indicator
PAR	precision approach radar
PBE	protective breathing equipment
PBN	performance-based navigation
PCDS	personnel carrying device system
PDP	predetermined point
PNR	point of no return
POH	pilot's operating handbook
PRM	person with reduced mobility
QFE	atmospheric pressure at aerodrome elevation (or at runway threshold)
QNH	question nil height, atmospheric pressure at nautical height
R/T	radio/telephony
RA	resolution advisory
RAT	ram air turbine
RCC	rescue coordination centre
RCF	reduced contingency fuel
RCLL	runway centreline lights
RFC	route facility chart
RNAV	area navigation
RNAV 5	B-RNAV, basic area navigation
RNP	required navigation performance
RNPX	required navigation performance X
ROD	rate of descent
RTCA	Radio Technical Commission for Aeronautics
RTZL	runway touchdown zone lights
RVR	runway visual range
RVSM	reduced vertical separation minima
SACA	safety assessment of community aircraft
SAFA	safety assessment of foreign aircraft
SAE ARP	Society of Automotive Engineers Aerospace Recommended Practice
SALS	simple approach lighting system
SALSF	short approach lighting system with sequenced flashing lights
SAP	stabilised approach
SAP	system access parameters

SAR	search and rescue
SBAS	satellite-based augmentation system
SCP	special categories of passenger
SID	standard instrument departure
SMS	safety management system
SPECI	aviation selected SPECIAL aviation report
SRA	surveillance radar approach
SRE	surveillance radar element
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
SSP	State Safety Programme
SSR	secondary surveillance radar (pressure-altitude-reporting)
STC	supplemental type certificate
SVS	synthetic vision system
TA	traffic advisory
TAC	terminal approach chart
TAFS	aerodrome forecasts
TAS	true airspeed
TAWS	terrain awareness warning system
TCAS	traffic alert and collision avoidance system
TCCA	Transport Canada Civil Aviation
TDP	take-off decision point
TDZ	touchdown zone
THR	threshold
TODA	take-off distance available
TORA	take-off run available
TRI	type rating instructor
TSE	total system error
TVE	total vertical error
TWIP	terminal weather information for pilots
UMS	usage monitoring system
UTC	coordinated universal time
UTR	upper torso restraint
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
V _{S1G}	1 g stall speed
V _{SO}	stalling speed
V _Y	best rate of climb speed
WAC	world aeronautical chart
WXR	weather radar
ZFT	zero flight time
ZFTT	zero flight time training

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