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Title	Fuel planning and management — Sub-NPA 2016-06 (C) 'Aeroplanes/helicopters — Part-NCC, Part-NCO & Part-SPO'
NPA Number	NPA 2016-06(C)

UK CAA (European.Affairs@caa.co.uk) has placed **22** unique comments on this NPA:

Cmt#	Segment description	Page	Comment	Attachments
18	(General Comments)	0	**Page No:** General Comment **Paragraph No:** Repeated text throughout document **Comment:** The word "minutes" has been reduced to the term 'min' throughout the document, and in NPA 2016-06(A) and (B) as well. It is recommended that in the interests of readability and to prevent incorrect interpretation, the full spelling "minutes" is used throughout. **Justification:** Clarity of meaning.	
19	Notice of Proposed Amendment 2016-06(C) — Fuel planning and management — Sub-NPA 2016-06(C) 'Aeroplanes/helicc — Part-NCC, Part-NCO & Part-SPO'	1 - 3	**Page No:** 1 **Paragraph No:** Executive Summary **Comment:** In the Executive Summary for this sub-NPA, a good synopsis of the intentions for the NPA are described. The intention to align fuel policies across Annexes, where possible, is understood as is the need for proportionality and convergence with ICAO Annex 6. However, after reviewing all elements of the NPA, and in particular parts (B) and (C), the proposal to align Part-SPO with Part-NCC introduces significant issues and is not supported. Due to the wide range of activities to be conducted as specialised operations with all levels of motor powered aircraft, it is not appropriate to impose prescriptive fuel requirements on operators. The more performance based approach taken for Part-NCO is considered to be a practical and proportionate means of setting the safety standards for SPO. It is therefore strongly recommended that a further review is undertaken to address the inconsistencies that will inevitably arise if the proposed fuel provisions are taken forward. There is also inconsistency evident between the separate parts of this NPA with regards to the adoption of fuel policies which adds to the difficulties in assessing proportionality and appropriateness. **Justification:** The achievement of practical and reasonable fuel policies for the whole range of flying activities covered by the regulation. Imposing unrealistic and prescriptive requirements, especially for specialised operations, will incur unacceptable constraints and most probably non-compliance.	
20	3. Proposed amendments — 3.1. Draft regulation (draft	10 - 12	**Page No:** 10 **Paragraph No:** 3.1 / 1, NCC.OP.105	

	opinion) — Part-NCC		**Comment:** As this is a rule the word 'may' is not appropriate. It is recommended that the word 'shall' is reinstated **Justification:** The word 'may' infers an option; rules are not optional	
21	3. Proposed amendments — 3.1. Draft regulation (draft opinion) — Part-NCC	10 - 12	**Page No:** 10 **Paragraph No:** 3.1 / 2, NCC.OP.130(b) **Comment:** The principle for determining final reserve fuel (FRF) for when no destination alternate is required is supported. However, the proposed text leaves some ambiguity in terms of fuel consumption rates. A suggested improvement is proposed below as a complete replacement. **Justification:** Clarity of intent and purpose **Proposed Text:** Replace paragraph (b) in its entirety with the following: (b) The pilot-in-command shall only commence a flight if the aeroplane carries sufficient fuel and oil ***calculated in accordance with the fuel policy*** for the following: (1) for visual flight rules (VFR) flights: (i) by day, to fly to the aerodrome of intended landing and thereafter a final reserve fuel to fly for at least 30 ***minutes*** at normal cruising altitude; or (ii) by night, to fly to the aerodrome of intended landing and thereafter a final reserve fuel to fly for at least 45 ***minutes*** at normal cruising altitude; (2) for IFR flights: (i) when no destination alternate is required, to fly to the aerodrome of intended landing; or (ii) when a destination alternate is required, to fly to the aerodrome of intended landing, then to an alternate aerodrome, and thereafter a final reserve fuel calculated according to the estimated mass on arrival at the destination alternate aerodrome at holding speed, at 1 500 ft (450 m) above aerodrome elevation in standard conditions which shall not be less than: (A) for aeroplanes with reciprocating engines, the fuel to fly for 45 minutes; or (B) for aeroplanes with turbine engines, the fuel to fly for 30 minutes.	
22	3. Proposed amendments — 3.1. Draft regulation (draft opinion) — Part-NCC	10 - 12	**Page No:** 11 **Paragraph No:** 3.1 / 2, NCC.OP.130(c) **Comment:** In computing the fuel required it is recommended that 2 additional items from ICAO Annex 6 Part II 3.4.3.5.2, Fuel requirements ,covering aircraft mass and fuel consumption are added to the list of items to be taken into consideration. **Justification:** Completeness and alignment with ICAO **Proposed Text:**	

			(c) In computing the fuel required ……into consideration: ***(x) anticipated aeroplane mass*** ***(x) fuel consumption data***	
23	3. Proposed amendments — 3.1. Draft regulation (draft opinion) — Part-NCC	10 - 12	**Page No:** 12 **Paragraph No:** 3.1 / 4, NCC.OP.205(b) **Comment:** The use of the term “to a site” may be misinterpreted and it is recommended that the text is amended to read ‘aerodrome or operating site’. Also the use of the phrase “shall be made” is inappropriate and it is recommended that it is replaced with the ICAO text of ‘can be made’. **Justification:** Clarity and correct use of defined terminology **Proposed Text:** (b) The pilot in command shall monitor the amount of usable fuel to ensure that it is not less than the fuel required to proceed to an ***aerodrome or operating*** site where a safe landing ~~shall~~ ***can*** be made with the planned final reserve fuel remaining.	
24	3. Proposed amendments — 3.2. Draft AMC and GM (draft decision) — Part-NCC	12 - 14	**Page No:** 12 **Paragraph No:** 3.2 / 1 AMC1 NCC.OP.130 **Comment:** The opening sentence establishes the use of the AMC to meet the fuel planning policy but implies that the operator must comply with this AMC. Although the intent is understood the statement implies that this may be the only means of compliance. Suggested text provided below. **Justification:** Clarity of purpose **Proposed Text:** The operator should establish a ~~basic~~ fuel ~~planning~~ policy ~~which complies with~~ ***based on*** the fuel calculations ~~criteria detailed~~ **provided** in this AMC	
25	3. Proposed amendments — 3.2. Draft AMC and GM (draft decision) — Part-NCC	12 - 14	**Page No:** 13 **Paragraph No:** 3.2 / 1, AMC1 NCC.OP.130(d) **Comment:** To ensure alignment of destination alternate fuel policy with ICAO Annex 6, Part II 3.4.5.3, it is recommended that the section dealing with isolated aerodromes is included in Part NCC. It was noted that on Page 27, paragraph 4.4.5 of the RIA that a difference was recorded but no justification for its omission seems to have been provided. **Justification:** The provision of means of compliance for isolated aerodromes is considered important and provides closer alignment with ICAO standards.	

			Proposed Text: Add new paragraph as follows: **(d)** ***(3) Where the aerodrome of intended landing is an isolated aerodrome:*** ***i) for a reciprocating engine aeroplane, the amount of fuel required to fly for 45 minutes plus 15 per cent of the flight time planned to be spent at cruising level, including final reserve fuel, or two hours, whichever is less; or*** ***ii) for a turbine-engine aeroplane, the amount of fuel required to fly for two hours at normal cruise consumption above the destination aerodrome, including final reserve fuel;***	
26	3. Proposed amendments — 3.2. Draft AMC and GM (draft decision) — Part-NCC	12 - 14	**Page No:** 14 **Paragraph No:** 3.2. / 2, GM1 NCC.OP.205(b)&(d), Note. **Comment:** It is not clear why the definition of "Safe Landing" is included here as there is a proposal in NPA 2016-06 (A) on page 31 to include it in Annex 1 Definitions. Either, Annex 1 is amended with a definition for all other Annexes, or the Note is retained. In addition, the term "precautionary landing" is used in this GM without definition. It is recommended that the definition of a "precautionary landing", as shown in proposed GM1 NCO.OP.185(b)&(c) sub-paragraph (c) on page 24, is added here as well or included in Annex 1 for use in all Annexes. **Justification:** Standardisation of terms and definitions.	
27	3. Proposed amendments — 3.2. Draft AMC and GM (draft decision) — Part-NCC	12 - 14	**Page No:** 14 **Paragraph No:** 3.2 / 2, GM1 NCC.OP.205(c) **Comment:** The term "precautionary landing is used in this GM without definition. It is recommended that the definition of a "precautionary landing", as shown in proposed GM1 NCO.OP.185(b)&(c) sub-paragraph (c) on page 24, is added here as well or included in Annex 1 for use in all Annexes. **Justification:** Standardisation of terms and definitions.	
28	3. Proposed amendments — 3.3. Draft regulation (draft opinion) — Part-SPO	15 - 17	**Page No:** 15 **Paragraph No:** 3.3 / 1, SPO.OP.105 **Comment:** As this is a rule the word 'may' is not appropriate. The word "shall" should be reinstated. **Justification:** The word 'may' infers an option. Rules are not optional	
29	3. Proposed amendments — 3.3. Draft regulation (draft opinion) — Part-SPO	15 - 17	**Page No:** 15 **Paragraph No:** 3.3 / 2, SPO.OP.130 **Comment:** The proposed text is drawn from Part-NCC and it	

			is understood from the Explanatory Note that this was a conscious move. However, in reviewing NPA 2016-06 Parts (A) to (C), it has become clear that the proposal here could be difficult to apply and cause considerable constraint to a whole range of SPO activities, including local commercial operations with other than complex motor powered aircraft. It is strongly recommended that this section for SPO be reviewed in its entirety and the simplified principles used for Part-NCO.OP.125, including the AMC/GM, should be adopted or at least reflected. This could also mean that SPO.OP.131 for helicopters could be deleted and amalgamated with SPO.OP.130 and suitable AMC/GM provided. The proposal as presented introduces significant constraints for the whole range of SPO activities and is not appropriate for this Annex and cannot be supported. The onus should be placed on the operator to use risk assessment and procedures to establish suitable final fuel reserves for the type of operations being conducted with comprehensive AMC/GM to assist in arriving at safe operating criteria. **Justification:** The proposal introduces requirements that cannot be met when considering the whole range of SPO activities. A more proportionate set of requirements, possibly based on the performance principles use in the proposed Part-NCO requirements should be assigned. **Proposed Text:** The section might include as an example: **SPO.OP.130 Fuel and oil supply — aeroplanes and helicopters** (a) The operator shall establish a fuel planning and in-flight re-planning policy to ensure that the quantity of energy/fuel and oil carried on board is sufficient for the intended flight to be completed safely, taking into account the meteorological conditions, any element affecting the performance of the aircraft, and any delays that are expected in flight, with an allowance for 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 in order to ensure a safe landing. (c) The pilot-in-command shall only commence a flight if the aircraft carries sufficient energy/fuel and oil for the following: (1) for visual flight rules (VFR) flights and instrument flight rules (IFR) flights, when no destination alternate is required, sufficient energy/fuel and oil to fly to the aerodrome or operating site of intended landing plus the final reserve fuel/energy; and (2) for IFR flights, when a destination alternate is required, sufficient energy/fuel and oil to fly to the aerodrome or operating site of intended landing, and thereafter to an alternate aerodrome, plus the final reserve fuel/energy.	
30	3. Proposed amendments — 3.3. Draft regulation (draft opinion) — Part-SPO	15 - 17	**Page No:** 16 **Paragraph No:** 3.3 / 4, SPO.OP.190, (b) **Comment:** The use of the term “to a site” may be misinterpreted and it is recommended that the text is amended to read ‘aerodrome or operating site’. Also the use of the phrase “shall be made” is inappropriate and it is recommended that it is replaced with the ICAO text of ‘can be made’.	

			Justification: Clarity and correct use of defined terminology **Proposed Text:** (b) The pilot in command shall monitor the amount of usable fuel to ensure that it is not less than the fuel required to proceed to an ***aerodrome or operating*** site where a safe landing ~~shall~~ ***can*** be made with the planned final reserve fuel remaining.	
31	3. Proposed amendments — 3.3. Draft regulation (draft opinion) — Part-SPO	15 - 17	**Page No:** 17 **Paragraph No:** 3.3 / 4, SPO.OP.190, (c)&(d) **Comment:** Due to the nature of SPO activities, the proposed text and procedures may lead to an unnecessary level of confusion and misreporting of fuel conditions. It is likely that many SPO flights will not be in controlled airspace or be using ATC so it is strongly recommended that for Part-SPO, the proposed text for Part-NCO as at NCO.OP.185 is used instead. This would be more appropriate and proportional **Justification:** Proportionate and appropriate procedures and terminology **Proposed Text:** Delete proposed sub-paragraphs (c) and (d) and replace with: ***(c) The pilot-in-command of a controlled flight shall advise the air traffic control (ATC) of a minimum fuel/energy state by declaring MINIMUM FUEL when, having committed to land at a specific aerodrome or operating site, the pilot calculates that any change to the existing clearance to land at that aerodrome or operating site, or other air traffic delays, may result in landing with less than the final reserve fuel/energy.*** ***(d) 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 site where a safe landing can be made in accordance with normal operating procedures is less than the planned final reserve fuel/energy.***	
32	3. Proposed amendments — 3.4. Draft AMC and GM (draft decision) — Part-SPO	17 - 19	**Page No:** 18 **Paragraph No:** 3.4 / 1, AMC1 SPO.OP.130,(d) **Comment:** To ensure alignment of destination alternate fuel policy with ICAO Annex 6, Part II 3.4.5.3, it is recommended that the section dealing with isolated aerodromes is included in Part SPO. It was noted that on Page 27, paragraph 4.4.5 of the RIA that a difference was recorded for NCC but no justification for its omission seems to have been provided. **Justification:** The provision of means of compliance for isolated aerodromes is considered important and provides closer alignment with ICAO standards. **Proposed Text:** Add new paragraph as follows:	

			(d) ***(3) Where the aerodrome of intended landing is an isolated aerodrome:*** ***i) for a reciprocating engine aeroplane, the amount of fuel required to fly for 45 minutes plus 15 per cent of the flight time planned to be spent at cruising level, including final reserve fuel, or two hours, whichever is less; or*** ***ii) for a turbine-engine aeroplane, the amount of fuel required to fly for two hours at normal cruise consumption above the destination aerodrome, including final reserve fuel;***	
33	3. Proposed amendments — 3.4. Draft AMC and GM (draft decision) — Part-SPO	17 - 19	**Page No:** 18/19 **Paragraph No:** 3.4 / 2, GM1 SPO.OP.190(b)&(d) **Comment:** 1) The reference used in the header is incorrect. 2) The term “precautionary landing” is used in this GM without definition. It is recommended that the definition of a “precautionary landing”, as shown in proposed GM1 NCO.OP.185(b)&(c) sub-paragraph (c) on page 24, is added here as well or included in Annex 1 for use in all Annexes. **Justification:** Standardisation of terms and definitions.	
34	3. Proposed amendments — 3.5. Draft regulation (draft opinion) — Part-NCO	19 - 22	**Page No:** 19 **Paragraph No:** 3.5 / 1 , NCO.OP.105 **Comment:** As this is a rule the word ‘may’ is not appropriate. The word “shall” should be reinstated. **Justification:** The word ‘may’ infers an option. Rules are not optional	
35	3. Proposed amendments — 3.5. Draft regulation (draft opinion) — Part-NCO	19 - 22	**Page No:** 19 **Paragraph No:** 3.5 / 2, NCO.OP.125(a) **Comment:** The new section at (a) is supported but the term ‘guaranteed’ is not considered appropriate in this context as this is a planning stage and the ‘completion of a flight’ cannot be totally predicted. It is recommended that the section is amended as shown. **Justification:** Reasonable terminology for the intent of the rule. **Proposed Text:** (a) The pilot-in-command shall ensure that the quantity of energy/fuel and oil carried on board is sufficient ~~to guarantee~~ ***for*** the intended flight ~~is~~ ***to be*** completed safely, taking into account the meteorological conditions, any element affecting the performance of the aircraft, and any delays that are expected in flight, with an allowance for contingencies that may reasonably be expected to	

			affect the flight.	
36	3. Proposed amendments — 3.5. Draft regulation (draft opinion) — Part-NCO	19 - 22	**Page No:** 20 **Paragraph No:** 3.5 / 2, NCO.OP.125,(b) **Comment:** It is appreciated that there is an ambition to allow a degree of flexibility in the establishment of a Final Reserve Fuel but its planning mentioned here seems to have become very confused with the other fuel planning elements such as 'contingency' as stated in sub-paragraph (a). It is strongly recommended that this section be re-written as shown and that the relevant material be expanded in AMC/GM. **Justification:** Clarity of purpose and intent. **Proposed Text:** (b) The pilot-in-command shall plan a quantity of fuel/energy to be protected as final reserve fuel/energy in order to ensure a safe landing**.** ~~when unforeseen occurrences may not permit safe completion of an operation as originally planned. In determining the quantity of the final reserve fuel/energy, the pilot-in-command shall take into account:~~ ~~(1) the severity of the hazard to persons or property that may result from an emergency landing after fuel/energy starvation;~~ ~~(2) the terrain in which such an emergency landing is made;~~ ~~(3) the weather conditions at and close to the destination/alternate aerodrome;~~ ~~(4) the precision of the measurement and calculation of fuel/energy expected on board at the end of the flight;~~ ~~(5) the availability of alternative landing options; and~~ ~~(6) the likelihood of unexpected circumstances that might prevent or delay a safe landing at the end of the intended flight;~~	
37	3. Proposed amendments — 3.6. Draft AMC and GM (draft decision) — Part-NCO	22 - 24	**Page No:** 22 **Paragraph No:** 3.6 / 1, AMC1 NCO.OP.125(b) **Comment:** It is recommended that the first sentence should be amended to include 'fuel/energy' as shown. **Justification:** Clarity. **Proposed Text:** The final reserve ***fuel/energy*** quantity should be no less than required to fly:	
38	3. Proposed amendments — 3.6. Draft AMC and GM (draft decision) — Part-NCO	22 - 24	**Page No:** 23 **Paragraph No:** 3.6 / 5, GM1 NCO.OP.125(b)(6) **Comment:** We believe this GM should be deleted as it provides no useful information that is not obvious. **Justification:** Superfluous information.	
39	3. Proposed amendments — 3.6. Draft AMC and GM (draft	22 - 24	**Page No:** 23 **Paragraph No:** 3.6 / 6, GM1 NCO.OP.185(b)&(c), sub-	

	decision) — Part-NCO		paragraph (a) **Comment:** As written the 'Note' is confusing with its mention of CAT. It is recommended that this sentence be amended as shown. **Justification:** Clarity of information **Proposed Text:** Note: ~~as for CAT, the final reserve fuel is always 30 min, but~~ for Part-NCO operators, the final reserve varies from 10 to 45 min**utes**; therefore, the air traffic control (ATC) may not be aware of the amount of the remaining fuel/energy ***and therefore endurance***.	