

Title:	Opinion and Instruction Document
Package Number	0008 / 0141
Package Title	All Weather Operations and Fuel/Energy Planning and Management
Headline Purpose:	To incorporate regulatory changes affecting the requirements for All Weather Operations and Fuel/Energy planning and management schemes for commercial and non-commercial aircraft and operators.
Proposed action:	Amend UK Regulation (EU) No. 965/2012 to introduce the necessary changes for compliance with ICAO Annex 6 in regard to All Weather Operations and Fuel/Energy Planning and Management

Policy Objective

The objective of the proposed changes to UK Regulation (EU) No. 965/2012 (the Air Operations Regulation) is to introduce new and amended requirements which will achieve harmonisation with ICAO Annex 6 Part I, Part II and Part III Standards and Recommended Practices (SARPs) by:

- (a) Harmonising the UK legislative framework with ICAO and amendment 44 to Annex 6 Part I, Amendment 37 of Annex 6 Part II and Amendment 23 of Annex 6 Part III with regard to all-weather operations (AWOs) and flight crew training. These changes will ensure the highest level of safety whilst enabling efficiency gains based on the latest technological advancements including updates to the requirements for aerodrome operating minima taking into consideration advancements in technology; the introduction of changes allowing some helicopter operations under Instrument Flight Rules (IFR) to use a Point in Space (PinS) operations at off-aerodrome sites; easier access for General Aviation (GA) pilots to be able to fly under IFR, which is an enabler for improving safety against loss of control (LOC) and controlled flight into terrain (CFIT); introducing planning minima to avoid the loss of safe landing options during flight for GA flights; and the introduction of requirements relating to altimeter setting and checking in Annex VII (Part-NCO).
- (b) Introducing the concept of 'fuel schemes' for Commercial Air Transport (CAT) which will take into consideration the interrelationships of the operators' fuel planning policy, in-flight fuel management and the selection of aerodromes. This concept will enable some CAT operators to develop an 'Individual Fuel Scheme' tailored to their specific operations with appropriate safety obligations and oversight requirements for the operator and the regulator;
- (c) Amending Annex VII (Part-NCO) and Annex VIII (Part-SPO) to enable a more performance-based approach with regard to the Final Reserve Fuel (FRF) including moving some of the regulatory requirements to AMC and GM;
- (d) Enabling a change from fuel to fuel and energy management which will facilitate the use of non-hydrocarbon-based fuels in future; and
- (e) Addressing fuel issues that are specific to helicopter operations including clarifying and simplifying the rules for helicopter fuel planning, and providing more robust regulations for the practice of refuelling with rotors running such that prior approval is required.

Corresponding changes are needed to UK Regulation (EU) 139/2014 ("the Aerodrome Regulation") and UK Regulation (EU) No.1178/2011 ("the Aircrew Regulation"), and these changes are set out in further Opinion and Instruction Documents.

Background

ALL WEATHER OPERATIONS (AWOs)

The CAA has identified that the existing rules in the relevant aviation domains regulating AWOs do not sufficiently address technological advancements and do not fully support new operational concepts. In addition, the existing rules are not aligned with the ICAO SARPs, and the results of the international harmonisation efforts have not yet been reflected in the regulatory framework. The CAA therefore proposes that the Department for Transport (DfT) should introduce new requirements which will harmonise the UK framework with ICAO and amendment 44 to Annex 6 Part I, Amendment 37 of Annex 6 Part II and Amendment 23 of Annex 6 Part III.

These proposals include updates to the requirements for aerodrome operating minima taking into consideration the advancements in technology. This package will propose amendments relating to the concepts of a combined vision system (CVS), synthetic vision systems (SVS), enhanced vision systems (EVS), electronic flight vision systems (EFVS) and Head-Up Displays (HUD), advanced and basic aircraft as well as operational credits as the enablers to benefit from these advances. These innovative technologies have resulted in new operational concepts and offer the potential to increase the level of safety through enhanced situational awareness, thus reducing the risk of loss of control (LOC) and controlled flight into terrain (CFIT). The new operational concepts are based on these new vision systems which are partly linked with ground-based augmentation systems (GBAS) and satellite-based augmentation systems (SBAS).

These new concepts also offer operational benefits in terms of reduced runway visual range (RVR) and/or lower decision altitude/height (DA/H) values and as SA CAT I/or compensation for downgraded, failed or not available ground infrastructure. These technologies may also offer significant economic advantages for several stakeholders such as air operators that may be able to operate within lower aerodrome operating minima, as well as aerodrome operators that could continue operations under lower visibility conditions without major additional investments in ground infrastructure, e.g. airfield ground lighting systems or ground-based navigation aids, resulting in fewer cancellations or diversions of flights to CAT II/III aerodromes thus improving efficiency, passenger experience and a small potential environmental benefit. Enabling operations with operational credits (such as operations using EFVS/CVS) would provide a greater availability of suitable destination and alternate aerodromes during periods of reduced visibility. This would effectively reduce the number of weather-related delays, cancellations or diversions of flights to CAT II/III aerodromes. It would also permit shorter routings and reduced fuel costs, a faster return to scheduled operations, and less inconvenience for passengers.

The cross-domain nature of these changes has been recognised and as a result there are changes to both the Aerodrome Regulation and the Aircrew Regulation. Airworthiness implications are being addressed through the Certification Specifications.

Proportionate adoption of improvements to AWO for helicopters and non-commercial operations are proposed to enable operations to be conducted more easily under instrument flight rules (IFR) and to have appropriate rules, procedures and facilities to achieve this. Following a consultation a decision was made to align the helicopter Low Visibility Operations threshold with the aerodrome regulations and adopt 550m. This will avoid a situation where the helicopter pilot expects to land and is not cleared to do so as Low Visibility Procedures (LVPs) are not in force at an aerodrome. The CAA has also proposed an amendment to the visibility required where there is no alternate to ensure that a safe landing is possible.

General aviation (GA) is a key priority, and this package proposes easier access for GA pilots to be able to fly under IFR, which is an enabler for improving safety against loss of control (LOC) and controlled flight into terrain (CFIT) in a proportionate manner. There is also a proposed amendment to Annex VI (Part-NCC), Annex VII (Part-NCO) and Annex VIII (Part-SPO) introducing pre-flight planning weather minima to prevent a situation where a minor deterioration in the weather could leave a flight with no safe landing options. The CAA proposes that new requirements should be introduced which will ensure that meteorological conditions at both primary and alternative destination aerodromes specified within a pilot's flight plan are within specified operating minima prior to take-off.

As altimeter setting and checking is critical to instrument flight, a new, proportionate requirement is proposed for introduction into Annex VII (Part-NCO).

The CAA is also proposing updates to the Authority and Organisational requirements (Part-ARO and Part-ORO) of the Air Operations Regulation, to reflect the changes that are part of this package.

FUEL AND ENERGY PLANNING AND MANAGEMENT

The changes related to fuel/energy planning and management are the result of new ICAO SARPs to Annex 6 Part I via Amendment 38 and subsequent updates to ICAO Doc 9976 Flight Planning and Fuel Management (FPFM) Manual.

This proposal introduces the concept of 'fuel schemes' for Commercial Air Transport (CAT) which recognises the interrelationships between the operators' fuel planning policy, aerodrome selection and in-flight fuel management policies.

This concept will enable some CAT operators to develop an 'Individual Fuel Scheme' tailored to their specific operations with appropriate safety requirements and oversight for the operator and the regulator. The concept of alternative means of propulsion enabling the use of electric and hydrogen for energy provision is also proposed. This will address gaps which have been identified and addressed in the in-flight fuel management policy to enable operators to benefit from the proposed changes.

The relationship between these three elements was taken into consideration when studying incidents where aircraft landed or could have landed with less than FRF. Where there was a successful outcome, this was found to be due to effective in-flight fuel management. The consequences of poor fuel planning and/or poor selection of aerodromes manifested themselves in flight and a successful outcome is dependent upon good in-flight fuel management. Similarly, good flight planning alone cannot guarantee a good outcome; it is still reliant upon good in-flight fuel management. It is clear that an integrated approach is required to ensure a successful outcome. This resulted in the development of the Fuel Scheme concept. Fuel schemes would need prior approval from the CAA. There are three levels for operators to choose from:

- Basic scheme – similar to current fuel policy requirements;
- Basic plus variations; and
- Individual fuel scheme – customised to meet the requirements of an operator's specific operation with appropriate safety requirements and oversight for the operator and the regulator.

The implementing rules (IRs) that are the subject of this OID follow a performance-based approach, with the IRs providing the high-level intent and means of compliance being further developed in related AMC and GM. Operators taking advantage of these performance-based regulations are likely to see an increase in operational efficiency with potential cost and environmental benefits.

This OID also addresses fuel issues specific to helicopter operations including clarifying and simplifying the rules for helicopter fuel planning. There are changes proposed to the Air Operations Regulation to address the safety-related issues of refuelling with passengers on board, embarking, disembarking, or refuelling with rotors turning. These have been aligned with industry best practice.

Refuelling with engines running and/or rotors turning is a common practice in the helicopter domain; however, it is riskier than refuelling with engines shut down and rotors stopped and requires the use of specific procedures. This is not reflected in the current rules. There is also harmonisation with ICAO Annex 6 Part III Amendment 22 as far as is considered reasonable regarding in-flight fuel management for helicopters.

It is proposed that the Annexes in the Air Operations regulation with regard to the calculation of FRF be aligned to address a more restrictive requirement found in Part-NCC than was required in Part-CAT. The CAA also considers that the fuel planning and management requirements of Annex 6 Part II should be applied to Part-NCC and Part-SPO for consistency.

This package also proposes the deletion of: (i) elements of the current fuel and oil supply requirements in Annex VII (Part-NCO) (non-Commercial Operations with other than complex aircraft) and: (ii) the reference to a prescriptive time required for FRF. These have been simplified and moved to Acceptable Means of Compliance (AMC) which is more proportionate for non-complex aircraft. A comprehensive

and updated set of safety requirements for developing and overseeing the operators’ fuel schemes is also proposed. In addition, this will address any gaps identified in the in-flight fuel management policy to enable operators to benefit from the latest technologies. The changes are developed from ICAO Standards and Recommended Practices (SARPs) 4.3.4.47 and 4.3.6.68 by Amendment 38 to ICAO Annex 6, Part I, followed by ICAO Doc 9976 ‘Flight Planning and Fuel Management (FPPM) Manual’ (1st Edition, 2015), which initiated discussions on this subject.

In Annex VIII (Part-SPO) (Specialised Operations), which sits outside of the ICAO framework, a more performance-based approach has been proposed with regard to the FRF, similar to the approach adopted for Part-NCO. Another significant amendment proposed to the Air Operations regulations is the change from fuel to fuel or energy management thus enabling the use of non-hydrocarbon based fuels in the future.

This package will also align with ICAO Annex 6 and ICAO Document 4444 (PANS-ATM) changes regarding inflight fuel management fuel emergencies and introduces new terminology for MINIMUM FUEL calls and MAYDAY MAYDAY MAYDAY FUEL broadcasts.

Legal powers relied upon to achieve the change(s) sought

Articles 31(1)(a) and 62(15) of UK Regulation (EU) 2018/1139 (“[the UK Basic Regulation](#)”).

Further considerations

If these proposals were not adopted, this would result in non-compliance with the amended ICAO SARPs set out in Annex 6, Parts I, II & III. In addition, some UK operators may be commercially disadvantaged if they are unable to apply the more efficient fuel/energy schemes or to benefit from the enhanced situational awareness, which is a safety benefit, provided by the new technological advancements by using EVS, HUD, SVS, CVS. This may also impact potential environmental benefits.

Other essential information

The amendments (set out in the columns of the table below) should come into force 12 months after the Statutory Instrument comes into force. The training requirements should come into force at the same time. All other provisions should come into force immediately.

Affected Law (and, if Applicable, UK AMC)

<p>What is the existing UK legal framework which is relevant here?</p>	<p>UK Reg (EU) No. 965/2012</p>
<p>Identify the law that the CAA proposes be changed:</p>	<p>A full list of the law that the CAA proposes be changed is set out below. This includes amendments to Parts:</p> <p>ARO.OPS ORO.FC CAT.GEN.MPA CAT.OP.MPA CAT.POL.A CAT.IDE.A</p>

	<p>SPA.LVO SPA.NVIS SPA.HEMS SPA.HOFO NCC.OP NCO.OP NCO.SPEC SPO.OP SPO.POL SPO.IDE</p>
<p>Are any consequential amendments needed to other pieces of law?</p>	<p>Yes</p> <p>UK Regulation (EU) 1178/2011 (Aircrew) and UK Regulation (EU) 139/2014 (Aerodromes)</p> <p>The consequential changes proposed to these two regulations are set out in separate OIDs, and all three OIDs should be read together to understand the full extent of the legislative change required.</p> <p>Consequential changes may be required to the ANO Schedule 13 to remove otiose criminal sanctions.</p>
<p>If the change proposed is to assimilated EU Implementing Rules made under the UK Basic Regulation is there any UK Acceptable Means of Compliance (“AMC”), Guidance Material (“GM”) or Certification Specification (“CS”) that will be changed/newly adopted as a consequence?</p>	<p>Yes. Relevant AMC/GM and CS will be required to support the regulation changes and will be developed accordingly.</p>
<p>Does this proposal relate to an international treaty or obligation (e.g. an ICAO SARP)?</p>	<p>Yes</p> <p>Fuel Planning: ICAO Standards and Recommended Practices (SARPs) 4.3.4.47 and 4.3.6.68 by Amendment 38 to ICAO Annex 6, Part I, followed by ICAO Doc 9976 ‘Flight Planning and Fuel Management (FPFM) Manual’ (1st Edition, 2015).</p> <p>AWO: ICAO SARP as covered by State Letters.</p> <p>We intend to meet the SARPs in full.</p>
<p>Is a consultation required?</p>	<p>Yes. The package was initially consulted on during UK membership of EASA as follows:</p> <p>AWO: NPA 2018-06 NPA 2019-09 NPA 2020-02 NPA 2019-08 Resulting in: Opinion 02/2021 EASA (europa.eu)</p>

	<p>Fuel Planning: NPA 2016-06 (A) NPA 2016-06 (B) NPA 2016-06 (C) Resulting in Opinion 02/2020.</p> <p>However, since the regulations were not in force by 31 December 2020 when the UK left the EU, a further consultation was conducted. Consultation on the proposed changes to the implementing rules was conducted between April and May 2023.</p>
<p>Has a consultation response document been published?</p>	<p>All Weather Operations and Fuel/Energy Planning and Management - Civil Aviation Authority - Citizen Space (caa.co.uk)</p> <p>All Weather Operations and Fuel/Energy Planning and Management Consultation Paper - Civil Aviation Authority - Citizen Space</p>

Is an Impact Assessment under the Better Regulation Framework necessary	Impact Assessments have been prepared by the CAA and DfT, and can be found here: The Aviation Safety (Amendment) Regulations 2024
When is it intended that these provisions should be brought into force?	12 months from the date the SI comes into force, to enable operators to prepare to meet the new rules.
Has an SI “slot” been identified?	November 2024
Will there be any criminal offences?	The Department for Transport is considering whether to seek a legislative opportunity to take powers for the Secretary of State to make a breach of requirements of assimilated EU legislation in the field of civil aviation an offence. If such powers are agreed by Parliament in the future, then consideration will be given to whether any additional criminal offences would be appropriate.
If so, is a Justice Impact Test required?	If the power to impose criminal sanctions is granted, the question of a Justice Impact Test will be considered by the CAA in collaboration with the Department for Transport
What is the intended extent of the provision?	The UK (which includes any G Registered aircraft or third country aircraft operating within the UK as the State of the Operator.)
Are there any devolved issues?	No
Are any transitional provisions needed?	No. These provisions should simply come into force 12 months after the date the SI comes into force.

Suggested Changes to Law

The CAA has proposed amendments to the following provisions of the Air Operations Regulation, as follows:

All Weather Ops	Fuel Planning
Annex 1 Definitions	Annex 1 Definitions
Appendix II to Annex II (Part-ARO) – Operations Specifications form	ARO.OPS.225 replaced
ORO.FC.100 amended	CAT.OP.MPA.100 (b)(3) amended
ORO.FC.105 replaced	CAT.OP.MPA.106 deleted content move to New CAT.OP.MPA.182
	CAT.OP.MPA.150 replaced
ORO.FC.130 replaced	CAT.OP.MPA.151 deleted
ORO.FC.140 replaced	CAT.OP.MPA.175 (b)(7) replaced
ORO.FC.145 amended	New CAT.OP.MPA.177
ORO.FC.146 amended	CAT.OP.MPA.180 replaced
ORO.FC.200 (d) replaced	CAT.OP.MPA.181 replaced

ORO.FC.202 amended	CAT.OP.MPA.182 replaced
ORO.FC.220 amended	CAT.OP.MPA.185 replaced
ORO.FC.230 replaced	CAT.OP.MPA.186 deleted
ORO.FC.235 replaced	CAT.OP.MPA.190 replaced and renumbered as new CAT.OP.MPA.177
New ORO.FC.236	New CAT.OP.MPA.191
ORO.FC.240 amended	CAT.OP.MPA.192
ORO.FC.A.245 amended	New CAT.OP.MPA.192
ORO.FC.H.250 (a)(1) replaced	CAT.OP.MPA.181 and CAT.OP.MPA.182
New ORO.FC.320	CAT.OP.MPA.195 and CAT.OP.MPA.200 merged into new CAT.OP.MPA.200,
New ORO.FC.325	CAT.OP.MPA.245 replaced
ORO.FC.330 replaced	
Appendix I to Annex III is replaced (declaration form)	CAT.OP.MPA.260 replaced
CAT.GEN.MPA.100 replaced	CAT.OP.MPA.280 moved to CAT.OP.MPA.185
New CAT.OP.MPA.101	CAT.OP.MPA.281 deleted and renumbered as CAT.OP.MPA.195
CAT.OP.MPA.107 replaced	CAT.POL.A.215 (c) amended
CAT.OP.MPA.110 replaced	CAT.POL.A.220 (f) amended
CAT.OP.MPA.115 replaced	CAT.POL.A.230 (e) amended
CAT.OP.MPA.245 amended	CAT.POL.A.235 (e) amended
CAT.OP.MPA.246 replaced	CAT.POL.A.415 (e) amended
CAT.OP.MPA.247 replaced	CAT.POL.A.420 (d) amended
CAT.OP.MPA.265 replaced	CAT.IDE.A.195 (e) amended
CAT.OP.MPA.300 replaced	SPA.HEMS.150 replaced
CAT.OP.MPA.305 replaced	SPA.HEMS.155 deleted
CAT.OP.MPA.310 replaced	SPA.SET-IMC.110 (l) amended
New CAT.OP.MPA.312	NCC.OP.105 amended
SPA.PBN.105 amended	
Annex V (Part-SPA) LVO title amended	NCC.OP.130 replaced
SPA.LVO.100 replaced	NCC.OP.131 replaced
SPA.LVO.105 replaced	NCC.OP.151 (b) amended
SPA.LVO.110 replaced	NCC.OP.155 (b) amended
SPA.LVO.115 deleted	New NCC.OP.157
SPA.LVO.120 replaced	NCC.OP.205 amended
SPA.NVIS.120 replaced	NCC.POL.110 (a)(6) to (a)(9) amended
SPA.HOFO.120 replaced	NCO.OP.105 amended
SPA.HOFO.125 replaced	NCO.OP.125 replaced

New NCC.OP.101	NCO.OP.126 deleted
NCC.OP.110 replaced	NCO.OP.145, amended
NCC.OP.111 deleted	New NCO.OP.147
NCC.OP.112 replaced	NCO.OP.185 amended
NCC.OP.145 (b) replaced	NCO.SPEC.135 deleted
New NCC.OP.147	NCO.SPEC.140 deleted
New NCC.OP.148	SPO.OP.105 amended
NCC.OP.150 (a) replaced	SPO.OP.130 replaced
NCC.OP.180 (a) and (b) amended	SPO.OP.131 replaced
NCC.OP.195 replaced	SPO.OP.140 amended
NCC.OP.225 replaced	SPO.OP.150 amended
NCC.OP.230 replaced	SPO.OP.155 replaced
New NCC.OP.235	New SPO.OP.157
New NCO.OP.101	SPO.OP.190 replaced
NCO.OP.105 deleted	SPO.POL.110 replaced
NCO.OP.110 replaced	SPO.POL.115 replaced
NCO.OP.111 replaced	SPO.IDE.H.146 replaced
NCO.OP.112 replaced	
NCO.OP.135 replaced	
NCO.OP.140 replaced	
NCO.OP.141 replaced	
NCO.OP.142 replaced	
New NCO.OP.143	
New NCO.OP.144	
NCO.OP.175 replaced	
NCO.OP.205 replaced	
NCO.OP.206 replaced	
NCO.OP.210 replaced	
New SPO.OP.101	
SPO.OP.110 replaced	

SPO.OP.111 deleted	
SPO.OP.112 replaced	
New SPO.OP.143	
New SPO.OP.144	
SPO.OP.145 replaced	
SPO.OP.170 (a) and (b) replaced	
SPO.OP.180 replaced	
SPO.OP.210 replaced	
SPO.OP.215 replaced	
New SPO.OP.235	

The CAA has decided not to adopt the amendments relating to Point in Space (PinS) approaches for certain helicopter operations as the reduction in visibility requirements for visual flight rules (VFR) for PinS approaches has not been demonstrated to be safe. The UK will maintain standard VFR with the appropriate alleviations extant in SERA.