European Aviation Safety Agency

COMMENT RESPONSE DOCUMENT (CRD) TO NOTICE OF PROPOSED AMENDMENT (NPA) 2009-02B

for an Agency Opinion on a Commission Regulation establishing the Implementing Rules for air operations of Community operators

and

draft Decision of the Executive Director of the European Aviation Safety Agency on Acceptable Means of Compliance and Guidance Material related to the Implementing Rules for air operations of Community operators

"Part-OPS"

CRD c.5 – Comment Response Summary Table (CRST) CAT.OP

Scope

This CRST document shows summaries of comments received and responses to the NPA text of Subpart A Section II and Subpart B Section II.

Column A: displays the NPA rule version

Column B: provides a summary of comments received, which have been coded as follows:

MS: Member State

INDUS: industry sector

IA: industry association

INDIV: individual

Column C: provides the responses, justifying the reasons for changing or retaining the NPA text.

Table of Contents

A: Rule	B: Summary of comments	C: Reason for change, remarks
Subpart A General operating and flight rules		The proposed new rule text is prepared on a new document with track changes to EU-OPS and JAR-OPS 3.
Section II - Operational procedures		
OPS.GEN.100 Ice and other contaminants		
(a) At the commencement of a flight the external surfaces of the aircraft shall be clear of any deposit which might adversely affect its performance or controllability.	3 MS: 1 IS, 2.a.5 of the ER needs an Implementing Rule. 2 MS, 1 IS: Request to realign with EU-OPS. Change "commencement of flight" to "commencement of take-off". MS: "external surface" could be misinterpreted to exclude contamination inside of engine inlets in front of the fan blades, "external surface should be deleted.	Accepted. Text aligned with EU-OPS. Accepted. Text realigned with EU-OPS. Accepted. Effected by alignment with EU-OPS. Accepted. External surface is deleted to also include contamination inside engine inlets in front of the fan blades.
(b) The operator shall apply ground de-icing/anti-icing processes whenever determined necessary, on the basis of inspections and weather conditions.	3 MS, 1 IS: PiC responsibility. The operator has the responsibility to establish the procedures. 1 IS: eliminate the need to always inspect the aircraft by adding if necessary.	Aligned with EU-OPS. Not accepted. The IR does not mandate inspections, but requires the application of de/anti-icing to be on the basis of inspections.

A: Rule	B: Summary of comments	C: Reason for change, remarks
OPS.GEN.105 Simulated abnormal situations in flight	1 IA: Request to re-align with ICAO Annex 6;	Accepted. Text aligned with ICAO Annex 6 Part 1 and EU-OPS 1.370;
Except in the case of flight instruction provided by a training organisation approved in accordance with Part-OR, when carrying passengers or cargo or when conducting commercial operations the following shall not be simulated:	1 MS: request that not even flight instruction should be allowed;	Editorial change to avoid "the simulation of IMC shall not be simulated." Not accepted. Change would not allow the possibility of e.g. supervision flights.
(a) abnormal or emergency situations which require the application of abnormal or emergency procedures; or		
(b) Instrument Meteorological Conditions (IMC) by artificial means.	1 MS: request to delete "by artificial means";	Accepted. "by artificial means" deleted as redundant.
OPS.GEN.110 Carriage of persons		
ALL AIRCRAFT		
(a) No person shall be in any part of an aircraft in flight which is not a part designed for the accommodation of persons, unless for the purpose of taking action necessary for the safety of the aircraft or of any animal or goods therein.	4 MS, 1 IA, 14 IS, 1 IA, 7 INDIV, 1 major airline IA: Request to re-align with EU-OPS and add "unless temporary access has been granted by the PiC" and to also consider the operation of aircraft carrying persons without compliance with the passenger-carrying requirements (e.g. cargo aircraft); 1 MS, 1 IA: Request to add "a person shall not be carried outside the crew or passenger compartments unless	Accepted. Text aligned with EU-OPS Accepted. Addressed by alignment with EU-OPS. With regard to business aircraft and the interpretation of "accommodation" as excluding baggage

A: Rule	B: Summary of comments	C: Reason for change, remarks
	appropriate safety measures have been taken to ensure the safety measures have been taken to ensure the safety of the aircraft and its occupants during the flight;" also consider business operators;	areas on such aircraft, the circumstances that would require access to baggage in flight should warrant requiring the PiC's permission.
AEROPLANES AND HELICOPTERS		
(b) In the case of aeroplanes and helicopters, persons carried shall be seated where, in the event of an emergency evacuation, they may best assist and not hinder evacuation from the aircraft.		
(c) Prior to and during taxiing, take-off and landing, and whenever deemed necessary in the interest of safety by the pilot-in-command, each person on board shall occupy a seat or berth and, except in the case of parachute operations, have his/her safety belt or harness properly secured.	1 INDIV: Request that cabin crew are not constrained to be seated prior to and during taxi.	Partially accepted. Alignment with EU-OPS and additional AMC material make clear that cabin crew may carry out only specified safety-related duties during taxiing.
HELICOPTERS	4 MS: request to apply (d) also to aeroplanes;	Accepted. CAT.GEN.232 EU-OPS text extends applicability to all aircraft. Text realigned with EU-OPS.
(d) A helicopter operator shall specify which aircraft seats may be occupied by one adult and one infant properly secured by a restraint device.		
OPS.GEN.115 Passenger briefing		

A: Rule	B: Summary of comments	C: Reason for change, remarks
Passengers shall be briefed on the location and use of emergency exits and relevant safety and emergency equipment.	1 INDIV: Request that the way the briefing is performed be described in more detail; 1 IS (ECA), 2 MS, 13 IS, 11 INDIV: Suggestion that the text is returned to the responsibility of the PiC rule; MS 1: Suggestion to insert a statement that the briefing card should be free from advertisement, e.g. "…pictorial instructions indicate exclusively the operation of…"; 2 MS, 1 IA, 1 IS association, 1 IS (private), 1 IA: Text clarification requested regarding the fact that a passenger briefing should not be limited to the mentioned subjects; 1 IA, 1 MS: Clarification requested regarding as to when and how the briefing has to occur; 1 MS: a statement should exist as to how the briefing is presented;	Partially accepted. Text changed to align with EU-OPS and changed for clarity; Not accepted. This responsibility is covered by CAT.GEN.100 and CAT.GEN.105; Not accepted. Control of briefing card content is an operator issue under the continuing oversight of the authority. Accepted. This is specified by the revised rule text in AMC1-CAT.OP.170.A/H; It is always possible to go beyond the Implementing Rule. Accepted. This is specified by the revised rule text in AMC1-CAT.OP.170.A/H; Accepted. This is specified in AMC1-CAT.OP.170.A/H;
OPS.GEN.120 Securing of passenger cabin and galleys		
(a) Prior to and during taxiing, take-off and landing, all exits and escape paths shall be unobstructed.		

A: Rule	B: Summary of comments	C: Reason for change, remarks
(b) Prior to and during take-off and landing, and whenever deemed necessary in the interest of safety by the pilot-in-command, all equipment and baggage shall be properly secured.	1 IS: Suggestion that prior to taxi, only baggage shall be stowed and properly secured;	Not accepted. Text remains aligned with EU-OPS, since during taxi all escape paths must be unobstructed and any loose equipment may create a hazard.
OPS.GEN.125 Portable electronic devices		
Portable electronic devices that can adversely affect the performance of the aircraft's systems and equipment shall not be used on board the aircraft.	1 IS: request to clarify that only electronic devices that "have been proven to adversely affect…" shall not be used; 1 IS: Request to re-align with EU-OPS 2 IS: Request to publish a listing with PED that adversely affect the systems;	Accepted. Text aligned with EU-OPS Not accepted. Guidance is given in GM. It also depends on the individual aircraft and installations.
OPS.GEN.130 Smoking on board	1 IS: request to include artificial smoking;	Partially accepted. Smoking includes artificial smoking, but a text change is not required.
ALL AIRCRAFT	1 IA: Request to re-align with EU-OPS; 2 MS, 1 IS (referring to oxygen): Request to add: (4) in cargo compartments or other areas where cargo is carried; (5) in those areas of the cabin where oxygen is being supplied; (6) if the operator has declared a flight to be operated as a non-smoking flight; or (7) outside those areas that the operator has designated smoking areas	Accepted. Text changed to align with EU-OPS. Accepted. Text aligned with EU-OPS.

A: Rule	B: Summary of comments	C: Reason for change, remarks
(a) No person shall be allowed to smoke on board:		
(1) while the aircraft is on the ground, unless specifically permitted by the operator in accordance with specified procedures;	1 MS: Request to replace "on the ground" with "on the surface" to pay due consideration to seaplanes;	Accepted. Text changed to address seaplanes.
(2) while the aircraft is being refuelled; or		
(3) whenever the pilot-in-command deems necessary in the interest of safety.	1 INDIV: add "…unless permitted by the operator in accordance with procedures defined in the Operations Manual";	Not accepted. Text aligned with EU-OPS.
COMPLEX MOTOR-POWERED AIRCRAFT	Call for applicability to every aircraft;	Accepted. Addressed by alignment with EU-OPS and generalisation to aircraft.
(b) No person shall be allowed to smoke on board a complex motor-powered aircraft:		
(1) in cargo compartments or other areas where cargo is carried;		
(2) in those areas of the cabin where oxygen is being supplied;	Request to specify: "in those areas of the cabin where oxygen flow is continuous";	Not accepted. Text re-aligned with EU-OPS.
(3) if the operator has declared a flight to be operated as a non-smoking flight; or		
(4) outside those areas that the operator has designated smoking areas.	1 MS: missing a rule that requires operators to designate smoking areas;	Not accepted. Rule specifies aisles and toilets as areas where smoking is not

A: Rule	B: Summary of comments	C: Reason for change, remarks
		permitted. Operator may specify other areas, but is not obliged to do so.
OPS.GEN.135.~~A~~ Taxiing of aeroplanes		
Aeroplanes shall only be taxied on the movement area of an aerodrome when the person at the controls is properly qualified to taxi an aeroplane.	1 IS: Request to clarify the expression "properly qualified" and "properly qualified to taxi an aeroplane" respectively; 1 IA: Suggestion to substitute "aeroplane" by "aircraft" to cover all types of aircraft;	Accepted. Addressed by elevating AMC to IR. Accepted. Text changed to extend rule to all aircraft.
OPS.GEN.140.H Rotor engagement		
A helicopter rotor shall only be turned under power for the purpose of flight with a qualified pilot at the controls.		
OPS.GEN.145 Use of aerodromes/operating sites		
An operator shall only use aerodromes or operating sites that are adequate for the type of aircraft and operation concerned.	1 IA: Request to re-align with EU-OPS since the new definition could potentially reduce flight safety; 1 INDIV: consider sailplanes and balloons;	Not accepted. Text aligned with EU-OPS and provision for use of operating sites added for non-complex motor-powered aircraft. Accepted. Text modified to recognise operating constraints of sailplanes and balloons

A: Rule	B: Summary of comments	C: Reason for change, remarks
OPS.GEN.147 Visual Flight Rules (VFR) Operating minima		Deleted because it has been decided that VFR flights rules will be covered by Part-SERA.
(a) Visual flight rules (VFR) flights shall be conducted in accordance with the Visual Flight Rules and table 1.	1/ Rules are unrealistic for sailplanes; many European sailplane pilots currently have the privilege of flying close to and in, cloud. 2/ ICAO conformity is questioned. 3/ Here is no possibility to determine in flight the distance and therefore that shall be at pilot's discretion for SAR or HEMS to assess the risk of flying temporarily into reduced visibility against the need to provide emergency medical service 4/ It seems that the regulation contains no provisions for VFR on top operations where the aircraft is operated VFR but does not have the surface in sight.	Noted, all comments have been forwarded to EUROCONTROL.
Table 1 – Minimum visibilities for VFR operations		
Airspace class | ABCDE* | F | G	1/ The VMC visibility and distance from cloud minima are contained in ICAO Annex 2 – Rules of the Air, Chapter 3, Table 3-1. VFR operating minima are primarily an Air Traffic Management/Air Traffic Services matter. As such, it would	

<table>
<tr><th>A: Rule</th><th>B: Summary of comments</th><th>C: Reason for change, remarks</th></tr>
<tr><td>
<table>
<tr><td></td><td></td><td>Above 900 m (3 000 ft) AMSL or above 300 m (1 000 ft) above terrain, whichever is the higher</td><td>At and below 900 m (3 000 ft) AMSL or 300 m (1 000 ft) above terrain, whichever is the higher</td></tr>
<tr><td>Distance from cloud</td><td colspan="2">1 500 m horizontally
300 m (1 000 ft) vertically</td><td>Clear of cloud and in sight of the surface</td></tr>
<tr><td>Flight visibility</td><td colspan="2">8 km at and above 3 050 m (10 000 ft) AMSL**
5 km below 3 050 m (10 000 ft) AMSL**</td><td>5 km***</td></tr>
</table>
* VMC minima for Class A airspace are included for guidance but do not imply acceptance of VFR flights in Class A airspace.
</td><td>be more appropriate to include these minima in an Implementing Rule on Rules of the Air instead of in these Implementing Rules for Air Operations.</td><td></td></tr>
<tr><td>** When the height of the transition altitude is lower than 3 050 m (10 000 ft) AMSL, FL100 should be used in lieu of 10 000 ft.</td><td></td><td></td></tr>
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A: Rule	B: Summary of comments	C: Reason for change, remarks
*** see (c)(1) below.		
(b) Special VFR flights shall not be commenced when the visibility is less than 3 km and not otherwise conducted when the visibility is less than 1.5 km.		
HELICOPTERS	1/ Missing is the limit on cloud ceiling for VFR flight over-water and out of sight of land of 600ft by day and 1 200 ft by night 2/ It is considered that this section should not be included in Part OPS.GEN or that it should be restricted to Commercial Operators. The text derives from JAR-OPS 3 and is specific to offshore commercial operations	
(c) Helicopters shall be operated in a flight visibility of not less than:	1/ Missing is the limit on cloud ceiling for VFR flight over-water and out of sight of land of 600 ft by day and 1 200 ft by night.	
(1) 1 500 m during daylight, except when in sight of land, if the helicopter is manoeuvred at a speed that will give adequate opportunity to observe other traffic and any obstacles in time to avoid a collision, the visibility may be reduced to 800 m for short period.		

A: Rule	B: Summary of comments	C: Reason for change, remarks
(2) 5 000 m during night.		
(d) In Class G airspace, when flying between helidecks where the overwater sector is less than 10 nm, VFR flights are conducted in accordance with table 2.		
Table 2 – Minima for flying between helidecks located in Class G airspace		

	Day		Night	
	Height*	Visibility	Height*	Visibility
Single pilot	300 ft	3 km	500 ft	5 km
Two pilots	300 ft	2 km**	500 ft	5 km***

A: Rule	B: Summary of comments	C: Reason for change, remarks
* The cloud base shall be such as to allow flight at the specified height below and clear of cloud.		
** Helicopters may be operated in flight visibility down to 800 m provided the destination or an intermediate structure are continuously visible.		
*** Helicopters may be operated in flight visibility down to 1 500 m provided the destination or an intermediate structure are continuously visible.		

A: Rule	B: Summary of comments	C: Reason for change, remarks
OPS.GEN.150 Instrument Flight Rules (IFR) Operating minima		
(a) The operator shall specify aerodrome operating minima for each departure, destination and alternate aerodrome to be used. Such minima shall:	1/ For smaller aircraft (say less than 19 seats) the operator should be allowed to use existing published data approved by the authority in the country where the airfield is situated. 2/ Instead of the approval of every individual minimum, EASA should require authority approval of the method used by the operator for establishing such minima.	1/ Noted. The revised text would provide sufficient flexibility to use the published data of the State of the aerodrome. 2/ The revised text clarifies that the method needs to be approved; furthermore an approval is required for operations below CAT I.
(1) not be lower than those specified by the State in which the aerodrome is located, except when specifically approved by that State; and	1/ Sentence makes no sense.	1/ Revised text is clearer; if an operator wants to go below the minima established by the State of the aerodrome it would require an approval of the State of the aerodrome.
(2) require the prior approval of the competent authority in accordance with OPS.SPA.001.LVO.	1/ Add reference to LVO operating minima. 2/ Text not clear, because it appears to exclude Cat 1 and non-precision minima.	1/2/ Revised text takes it into account.
(b) The minima referred to in (a) shall take into account any increment imposed by the competent authority.		
(c) The minima for a specific type of approach and landing procedure are applicable if:	1/ Clause is not clear, needs to be redrafted.	1/ Revised text clarifies that the established minima require that all following conditions are met.

A: Rule	B: Summary of comments	C: Reason for change, remarks
(1) the ground equipment required for the intended procedure is operative;		
(2) the aircraft systems required for the type of approach are operative;		
(3) the required aircraft performance criteria are met; and		
(4) the crew is qualified accordingly.		
(d) In establishing the aerodrome operating minima which will apply to any particular operation, an operator shall take account of:		
(1) the type, performance and handling characteristics of the aircraft;		
(2) the composition of the flight crew, their competence and experience;		
(3) the dimensions and characteristics of the Final Approach and Take-off Areas (FATOs)/runways which may be selected for use;		
(4) the adequacy and performance of the available visual and non-visual ground aids;		

A: Rule	B: Summary of comments	C: Reason for change, remarks
(5) the equipment available on the aircraft for the purpose of navigation and/or control of the flight path, as appropriate, during the take-off, the approach, the flare, the landing, the roll-out and the missed approach;		
(6) the obstacles in the approach, the missed approach and the climb-out areas required for the execution of contingency procedures and necessary clearance;		
(7) the obstacle clearance altitude/height for the instrument approach procedures;		
(8) the means to determine and report meteorological conditions; and		
(9) the flight technique to be used during the final approach.		
OPS.GEN.155 Selection of alternate aerodromes	1/ This entire section is not in accordance with the new proposed amendment to ICAO Annex 6, Part I, Operation of Aircraft. We suggest updating this rulemaking to reflect the standards set forth in new ICAO Document AN-WP/8387.	1/ Revised document aligns with content of EU-OPS and JAR-OPS 3.
TAKE-OFF ALTERNATE AERODROMES		

A: Rule	B: Summary of comments	C: Reason for change, remarks
ALL AEROPLANES	1/ It outlines that the new rule structure proposed by EASA is not user-friendly and leads to many misunderstandings which could potentially decrease flight safety. There is no added value for EASA to alter the well-known and well proven structure of EU-OPS and JARs. Proposal: Realign with EU-OPS. 2/ The requirement to specify a take-off alternate for non-complex motor powered aeroplanes is in excess of ICAO standards specified in Annex 6 Part II Section 2. The title of the section should be amended to reflect the relevant aircraft. Justification: Alignment with ICAO SARP's and current practice.	1/ Revised document aligns with content of EU-OPS. 2/ The requirement will not be applicable for VFR operations of performance Class B aeroplanes,
(a) A take-off alternate aerodrome shall be selected and specified in the flight plan if the weather conditions at the aerodrome of departure are at or below the applicable aerodrome operating minima or it would not be possible to return to the aerodrome of departure for other reasons.	1/ Text revision requested and proposed. 2/ This definition is not consistent with EU-OPS. It should refer to the applicable aerodrome landing minima. Proposal: Realign with EU-OPS.	1/2/ Revised document aligns with content of EU-OPS.
(b) The take-off alternate aerodrome shall be located within the following distance from the aerodrome of departure:	1/ Text revision requested and proposed. 2/ The sections (b) and (c) should shift, because the current section (b) only refers to multi-engined aircraft. 3/ This definition is not consistent with EU-OPS due to the lack of reference to the	1-4/ Revised document aligns with content of EU-OPS and clarifies all commented points.

A: Rule	B: Summary of comments	C: Reason for change, remarks
	'in still air standard conditions' (EU OPS 1.295). This would have a tremendous impact on flight operations which cannot be justified on safety grounds. Proposal: Realign with EU-OPS 1.295. 4/ The requirement in OPS.GEN.155(a) applies to all aircraft, whatever the number of engines is. However OPS.GEN.155(b) does not define the maximum distance of the take-off alternate for single-engined aircraft.	
(1) aeroplanes having two power-units. Not more than a distance equivalent to a flight time of one hour at the single-engine cruise speed; and	1/ add: Except with an ETOPS approval then the maximum flying time to a take-off alternate may be two hours/120 minutes in still air and standard conditions.	1/ Revised document aligns with content of EU-OPS. Text added.
(2) aeroplanes having three or more power-units. Not more than a distance equivalent to a flight time of two hours at the one-engine inoperative cruise speed.		
(c) For an aerodrome to be selected as a take-off alternate the available information shall indicate that, at the estimated time of use, the conditions will be at or above the aerodrome operating minima for that operation.	1/ This definition is not consistent with EU-OPS. It should refer to the applicable aerodrome landing minima. Proposal: Realign with EU-OPS. 2/ Under OPS.GEN the selection of a take-off alternate does not have a clause for the weather to be within limits before and after the time of estimated use. Analogue	1/ Revised document aligns with content of EU-OPS. However, the term "landing minima" was changed to "alternate minima". 2/ Text not revised for NCC. Aligned with Annex 6 Part II.

A: Rule	B: Summary of comments	C: Reason for change, remarks
	to selection of take-off alternate aerodromes in OPS.CAT and the selection of destination alternate aerodromes in OPS.CAT and OPS.GEN there should be a provision to have suitable forecasted/expected weather conditions before and after the estimated time of use of the take-off alternate.	
HELICOPTERS – COMMERCIAL AIR TRANSPORT		
(d) Helicopters used in commercial air transport shall comply with (a) and (c) above.	1/ It is not clear what is intended here; the text of (d) appears to require compliance for CAT helicopters; however, the requirements is already contained in OPS.CAT.156.H (see also the note contained in OPS.CAT.H.155).	1/ The revised text rectifies this issue.
DESITNATION ALERNATE AERODROME		
(e) For a flight to be conducted in accordance with instrument flight rules (IFR), at least one destination alternate shall be selected and specified in any flight plan, unless:	1/ This definition is not in line with EU-OPS. Proposal: Realign with EU-OPS.	1/ Revised text aligned with EU-OPS.
(1) for aeroplanes, the duration of the flight and the available current meteorological information indicates that, at the estimated time of arrival at the place of intended landing, and for a reasonable period before and after such time,	1/ The concept of reasonable time should be better specified.	1/ Text specified for CAT but kept for NCC which is aligned with the wording of Annex 6 Part II.

A: Rule	B: Summary of comments	C: Reason for change, remarks
the approach and landing may be made under visual meteorological conditions; or		
(2) for helicopters, available current meteorological information indicates that the following meteorological conditions will exist from two hours before to two hours after the estimated time of arrival:	1/ This text is derived from ICAO Annex 6 Part III section III. The UK does not mandate this requirement and has filed a difference. The weather requirements are excessive when compared with those for aeroplanes at sub-paragraph (1), which is drawn from ICAO Annex 6 Part II, and therefore should be removed.	1/ Revised text in CAT.OP.AH requires weather reports and/or forecasts one hour before / after the estimated time of arrival.
(i) A cloud base of at least 130 metres (m) (400 ft) above the minimum associated with the instrument approach procedure;		
(ii) Visibility of at least 1 500 m more than the minimum associated with the procedure; or		
(3) the place of intended landing is isolated and:	1/ OPS.CAT.155.A (a) repeats this requirement without the additional criteria. 2/ EU-OPS text preferred. 3/ This is contradictory to OPS.CAT.155(d) which specifies normal alternate aerodrome minima.	1-3/ Revised text aligned with content of EU-OPS and rectifies this issue.
(i) there is no suitable destination alternate;		

A: Rule	B: Summary of comments	C: Reason for change, remarks
(ii) an instrument approach procedure is prescribed for the aerodrome of intended landing;		
(iii) for aeroplanes, available current meteorological information indicates that the following meteorological conditions will exist from two hours before to two hours after the estimated time of arrival:		
(A) A cloud base of at least 300 m (1 000 ft) above the minimum associated with the instrument approach procedure;		
(B) Visibility of at least 5.5 km or of 4 km more than the minimum associated with the procedure; and		
(iv) for helicopters, a Point of No Return (PNR) is determined in case of an offshore destination.		1/
OPS.GEN.160 Departure and approach procedures		
(a) Unless otherwise approved by the State responsible for an aerodrome, an operator shall use the departure and approach procedures established by that State.	2 IS, 1 MS: Alignment with EU-OPS and ICAO;	Accepted. Text aligned with EU-OPS

A: Rule	B: Summary of comments	C: Reason for change, remarks
(b) The pilot-in-command shall only accept an Air Traffic Control (ATC) clearance to deviate from a published departure or arrival route, provided obstacle clearance criteria can be observed and full account is taken of the operating conditions. In any case, the final approach shall be flown visually or in accordance with the published approach procedures.		
OPS.GEN.165 Noise abatement	1 IS, 1 MS, 1 IA: Request to re-align with EU-OPS and ICAO and add a reference to PANS-OPS;	Accepted. Text aligned with EU-OPS. AMC1 contains a reference to PANS-OPS.
Operating procedures shall take into account the need to minimise the effect of aircraft noise.		
OPS.GEN.170 Minimum terrain clearance altitudes – IFR flights	4 MS: Request to align with ICAO, especially concerning phraseology (“minimum height” and “minimum level”); 1 INDIV: this paragraph should include the requirement for minimum flight level for flight above the transition altitude;	Text aligned with EU-OPS. Not accepted. Terrain is defined relative to sea level. Transition levels vary (e.g. 18 000 ft in USA), and the operator should specify at least minimum terrain clearance altitudes. He/she may also, if appropriate to the scope and area of his operation, specify minimum flight levels. Now CAT.OP.140.
For each flight to be conducted in accordance with instrument flight rules (IFR), terrain clearance altitudes for the route to be flown shall be specified.		

A: Rule	B: Summary of comments	C: Reason for change, remarks
OPS.GEN.175 Minimum Flight Altitudes	1 INDIV: request to clarify how an approval could be obtained from the "State overflown"; 1 Member State: revert to the use of "MSA" or "MOCA";	The IR does not require the approval of the States overflown, but the use of minimum altitudes established by those States. Text aligned with EU-OPS. Now CAT.OP.140. These terms were never in the IR, but in AMC/GM in EU-OPS. The EU-OPS ACJ/GM was transposed with the NPA.
An aircraft shall not be flown below minimum altitudes established by the State overflown, except when:		
(a) necessary for take-off or landing; or		
(b) descending in accordance with procedures established by that State subject to demonstration by the operator that the operation does not create a hazard to persons or property on the surface.	1 IS, 1 MS, Eurocontrol: Request to re-consider this paragraph and clarify;	Not relevant for CAT. Text aligned with EU-OPS. Now CAT.OP.140.
OPS.GEN.180 Routes and areas of operation		
Operations shall be conducted in accordance with any restriction on the routes or the areas of operation imposed by the State overflown.		
OPS.GEN.185 Meteorological conditions	1 MS: Suggestion to limit the flight VFR on top during darkness;	

A: Rule	B: Summary of comments	C: Reason for change, remarks
(a) The pilot-in-command shall not initiate or continue a Visual Flight Rules (VFR) flight unless the latest available meteorological information indicates that the weather conditions along the route and at the intended destination at the appropriate time will be at or above the applicable VFR operating minima.	1 IS (general aviation): Request to add "if the weather conditions are of such kind that the latest available meteorological information will be similar to the previous issued information the pilot can fly based upon that information" to clarify that the pilot does not have to check the MET every minute;	Text aligned with EU-OPS. Now CAT.OP.245
(b) A flight in accordance with instrument flight rules (IFR) shall only be initiated or continued towards the planned destination aerodrome when the latest available meteorological information indicates that, at the estimated time of arrival, the weather conditions at the destination, or at least one destination alternate aerodrome are at or above the applicable aerodrome operating minima.	1 IS: Request to align with ICAO which states that the weather conditions at the destination *and* at least one destination alternate have to be at or above the minima;	Not accepted. Text aligned with EU-OPS
OPS.GEN.190 Take-off conditions		
Before commencing take-off, the pilot-in-command shall ensure that:	2 MS, 1 IS; For T/O, a ceiling limit is not required; proposal that the PiC "should be satisfied that" instead of "shall ensure"; therefore, the text should be re-aligned with EU-OPS 1.430;	Accepted. Text aligned with EU/JAR-OPS
(a) according to the information available, the weather at the aerodrome or operating site and, for motor-powered aircraft, the condition of the runway/Final		

A: Rule	B: Summary of comments	C: Reason for change, remarks
Approach and Take-off Area (FATO) intended to be used, will not prevent a safe take-off and departure; and.		
(b) the visibility/Runway Visual Range (RVR) and the ceiling in the take-off direction are equal to or better than the applicable aerodrome operating minima.	1 IA: only the ceiling is required, otherwise LVP would be limited;	Partially accepted. Addressed by alignment with EU-OPS
OPS.GEN.195 Approach and landing conditions		
Before commencing an approach to land, the pilot-in-command shall ensure that according to the information available, the weather at the aerodrome or operating site and, for motor-powered aircraft, the condition of the runway/Final Approach and Take-off Area (FATO) intended to be used, will not prevent a safe approach, landing or missed approach, having regard to any performance information contained in the Aircraft Flight Manual (AFM) and/or the operations manual.	1 IS, 2 MS: proposal that the PiC "should be satisfied that" instead of "shall ensure"; therefore, the text should be re-aligned with EU-OPS; 2 MS: request to quantify the "in-flight" landing distance factor and align the text with ICAO;	Accepted. Text aligned with EU/JAR-OPS. Partially accepted. To be considered for future rulemaking
OPS.GEN.200 Commencement and continuation of approach		
(a) An instrument approach shall only be continued below 1 000 ft above the aerodrome on the final approach segment when the reported Runway Visual Range (RVR) is at or above the applicable minima specified for the runway.	1 IS: Request to delete "reported" RVR, since it is also possible that a pilot assesses the RVR;	Not accepted. The pilot must use reported RVR for approach. Now CAT.OP.300

A: Rule	B: Summary of comments	C: Reason for change, remarks
(b) If, after passing 1 000 ft above the aerodrome on the final approach segment, the RVR falls below the applicable minimum, the approach may be continued to Decision Altitude/Height (DA/H) or Minimum Descent Altitude/Height (MDA/H).		
(c) The approach may be continued below DA/H or MDA/H and the landing may be completed provided that at least one of the following visual references for the intended runway is established at the DA/H or MDA/H and maintained: (1) Elements of the approach light system; (2) The threshold; (3) The threshold markings; (4) The threshold lights; (5) The threshold identification lights; (6) The visual glide slope indicator; (7) The touchdown zone or touchdown zone markings; (8) The touchdown zone lights; or (9) Runway/Final Approach and Take-off Area (FATO) edge lights.	4 IS: Request to re-align with EU-OPS ("…provided that the required visual reference…", "An instrument approach may be commenced regardless of the reported visibility/RVR",) and ICAO;	Accepted. Text aligned with EU/JAR-OPS.
OPS.GEN.205 Fuel and oil supply	1 MS: adjust title to say "Fuel supply" only	Not accepted. Title aligned with EU-OPS and ICAO. For some aircraft oil consumption is a significant

A: Rule	B: Summary of comments	C: Reason for change, remarks
		consideration.
(a) In compliance with paragraph 2.a.7. of Annex IV to Regulation (EC) No 216/2008 (Essential requirements for air operations), the following amounts of reserve fuel for visual flight rules (VFR) flights and fuel for instrument flight rules (IFR) flights shall at least be carried.	10 IS, 4 INDIVs.: Request to re-align with EU-OPS (30 minutes instead of 45); 2 IS, 2 INDIV: Request for a requirement for a fuel reserve stated for a local flight;	Accepted. See CAT.OP.145 Not accepted. See CAT.OP.145. The rule covers local flights.
BALLOONS		
(b) For flights conducted in accordance with VFR, reserve fuel (gas or ballast) shall not be less than 30 minutes of flight.		
AEROPLANES	1 IS: The planning stage should include: "…the operator shall establish a fuel policy for the purpose of flight planning…";	Accepted. Text aligned with EU-OPS Covered by CAT.OP.145 (a)
(c) Except for non-commercial flights with other than complex motor-powered aircraft taking off and landing at the same aerodrome/operating site and remaining within 50 nautical miles (nm) of that aerodrome/operating site, flights conducted in accordance with VFR shall carry reserve fuel not less than:	10 IS, 4 INDIV: Request to re-align with EU-OPS (30 minutes instead of 45); 2 INDIV, 2 IS (general aviation): Request for a requirement for a fuel reserve stated for a local flight;	Accepted. Appendix to CAT.OP.145.A Fuel Policy permits 30 minutes for turbine-engined aeroplanes and 45 minutes for reciprocating-engined aeroplanes. Not accepted. The rule covers local flights.

A: Rule	B: Summary of comments	C: Reason for change, remarks
(1) 30 minutes fuel at normal cruising altitude by day; or		
(2) 45 minutes fuel at normal cruising speed by night.		
(d) For flights conducted in accordance with IFR the amount of fuel to be carried shall be sufficient:		
(1) to fly to the aerodrome/operating site of intended landing, and thereafter to fly 45 minutes at normal cruising altitude, when no alternate is required or no suitable alternate is available (i.e. the aerodrome/operating site is isolated and no suitable alternate is available); or		
(2) when an alternate is required, to fly to and execute an approach and a missed approach at the aerodrome/operating site of intended landing, and thereafter:		
(i) to fly to the specified alternate; and		
(ii) to fly at least 45 minutes at normal cruising altitude.	1 INDIV: reconsider regarding EU-OPS and practical reasons;	Accepted: Text aligned with EU/JAR-OPS.
HELICOPTERS		

A: Rule	B: Summary of comments	C: Reason for change, remarks
(e) Except for non-commercial flights with other than complex motor-powered aircraft taking off and landing at the same aerodrome/operating site and remaining within 50 nautical miles (nm) of that aerodrome/operating site, flights conducted in accordance with VFR shall carry reserve fuel not less than 20 minutes fuel at best range speed.		
(f) For flights conducted in accordance with IFR, the amount of fuel to be carried shall be sufficient:		
(1) to fly to the aerodrome/operating site of intended landing, and thereafter to fly 30 minutes at holding speed at 450 m (1 500 ft) above the destination aerodrome/operating site under standard temperature conditions and approach and land, when no alternate is required or no suitable alternate is available (i.e. the aerodrome/operating site is isolated and no suitable alternate is available); or		
(2) when an alternate is required, to fly to and execute an approach and a missed approach at the aerodrome/operating site of intended landing, and thereafter:		
(i) to fly to the specified alternate; and		

A: Rule	B: Summary of comments	C: Reason for change, remarks
(ii) to fly 30 minutes at holding speed at 450 m (1 500 ft) above the alternate aerodrome/operating site under standard temperature conditions and approach and land.		
OPS.GEN.210 Refuelling with passengers embarking, on board or disembarking	1 IS, 1 MS: Align text with ICAO concerning the fuelling with AVGAS or wide-cut fuels;	Partially accepted. CAT.OP.200 requires all operators to have procedures.
(a) A balloon shall not be refuelled with passengers embarking, on board or disembarking.		
(b) All other aircraft shall not be refuelled when passengers are embarking, on board or disembarking, unless:	1 MS: Definition requested for precautions for fuelling during embarkation;	Precautions specified for CAT in AMC.
(1) it is attended by the pilot-in-command or other qualified personnel ready to initiate and direct an evacuation of the aircraft; and	1 IS: Remark that due consideration should be paid to the fact that the whole process shall take place under the authority of the PiC;	Not accepted. Text is aligned with EU-OPS. This must remain flexible to suit circumstances. PiC may not be on board.
(2) for commercial operations, two-way communication is maintained between the personnel involved in the operation supervising the refuelling and the pilot-in-command or other qualified personnel required.	1 IS, 1 Member State: Request to re-align with EU-OPS, and replace “maintained” by “shall be established and remain available”; also consider aircraft that do not have the possibility for two-way-communication;	Accepted. Text aligned with EU/JAR-OPS; for aircraft without intercom systems, the rule allows the use of “other suitable means”.

A: Rule	B: Summary of comments	C: Reason for change, remarks
OPS.GEN.215 In-flight fuel checks		
In-flight fuel checks shall be carried out on each flight at regular intervals.	1 INDIV: exclude sailplanes and powered sailplanes	Accepted. Text changed accordingly.
OPS.GEN.220.B Operational limitations - balloons		
(a) A landing with a balloon during night shall not be made, except for emergencies.		
(b) A balloon may take-off during night, provided sufficient fuel is carried for a landing during day.		
OPS.GEN.222 Ground proximity detection		
When undue proximity to the ground is detected, the pilot flying shall immediately take corrective action to establish safe flight conditions.	1 MS: Clarification and alignment with already accepted aviation practice requested;	Partially accepted. Clarification to be considered in possible future rulemaking.
Subpart B - Commercial Air Transport **Section II - Operational procedures**		
OPS.CAT.110 Carriage of special categories of passengers		
(a) Special categories of passengers, requiring special conditions, assistance or devices when carried on a	1 IS: Clear definition of "special categories of passengers" according EU-OPS	Not accepted. New text dispenses with "special categories" and splits

A: Rule	B: Summary of comments	C: Reason for change, remarks
flight, shall only be carried under conditions that ensure the safety of the aircraft and its occupants.	requested; 1 INDIV. : More detailed guidance requested, especially on a possible limitation of these passengers;	passengers into PRMs and inadmissible passengers. A description is given in GM OPS.CAT.110;
(b) The pilot-in-command shall be notified when any persons referred to in (a) are planned to be carried on board.	IA: Request that the PiC should be informed "in advance" about the transport of special categories of passengers including PRMs;	Accepted. Text changed to provide more legal certainty for the pilot-in-command;
OPS.CAT.111 Persons under the influence of alcohol or drugs		
Persons under the influence of alcohol or drugs to such an extent that they may endanger the safety of the aircraft or its occupants shall not be allowed on the aircraft.	1 IA : Persons under the (general) influence of alcohol or drugs shall not be allowed on board an aircraft, because it is difficult to see when the influence is endangering the safety;	Text changed to be aligned with EU-OPS; Now in CAT.GEN.105
OPS.CAT.115 Passenger briefing		
Passengers of motor-powered aircraft shall be provided with a safety briefing card on which pictorial instructions indicate the operation of emergency equipment and exits likely to be used by passengers in the case of an emergency.	1 MS: Suggestion to insert a statement that the briefing card should be free from advertisement, e.g. "…pictorial instructions indicate exclusively the operation of…"; 1 INDIV: the way the briefing is to be performed should be described in more detail;	Text changed to align with EU-OPS; Comment responses are against CAT.GEN.115.17

A: Rule	B: Summary of comments	C: Reason for change, remarks
OPS.CAT.116 Embarking and disembarking of passengers		
(a) Embarking and disembarking of passengers shall be done under the responsibility of a person designated by the operator.	Re-alignment with EU-OPS, since this requirement goes beyond EU-OPS; Request to insert "This person shall receive the authorization of the PiC before initiating the embarking."	Not accepted. Responsibility must be clear. Initiation of boarding must be controlled by crew or operator's agents. The requirement is to assign responsibility, not duties. Not accepted. This will not always be possible, and safety will not necessarily be enhanced by requiring it.
(b) In the case of balloons, embarking and disembarking shall not be undertaken during the inflation or the deflation of the balloon.		
OPS.CAT.120 Stowage of baggage and cargo		
(a) Only hand baggage and cargo that can be adequately and securely stowed shall be taken into the passenger compartment.	1 MS : Re-align with ICAO Annex 6 concerning the "adequate" stowage; 1 MS : Request for a statement concerning the situation when there is no room for stowage in the cabin, that the hand baggage and the cargo then should be weighed at the check-in; 1 MS: missing a rule that requires operators to designate smoking areas;	Not accepted. Text remains aligned with EU-OPS. Accepted, but incorporated into CAT.POL. Not accepted. Rule specifies aisles and toilets as areas where smoking is not permitted. Operator may specify other areas, but is not obliged to do so.

A: Rule	B: Summary of comments	C: Reason for change, remarks
(b) All baggage and cargo on board, which might cause injury or damage, or obstruct aisles and exits if displaced, shall be stowed so as to prevent its movement.	1 IS: Request for a statement that no DG shall be carried in the passenger compartment unless described in the TI.	Such a statement is included in the general DG requirement.
OPS.CAT.130 Smoking on board		
The non-smoking areas shall include the aisles and toilets.	1 IA, MS 1: Request to consider national legislations and ban smoking in general, unless a flight is designated a smoking flight; 1 MS: Request to add a rule which specifically requires operators to designate smoking and non-smoking areas;	Not accepted. Text aligned with EU-OPS. The Agency's task is to address the safety aspects. Not accepted. EU-OPS text specifies toilets and aisles. An operator may designate other areas, but is not obliged to.
OPS.CAT.150.H Operating minima - Helicopter Airborne Radar Approaches (ARAs) for overwater operations		
(a) An ARA shall only be undertaken provided:		
(1) the radar provides course guidance to ensure obstacle clearance; and		
(2) (i) the Minimum Descent Height (MDH) is determined from a radio altimeter; or (ii) the Minimum Descent Altitude (MDA) plus an		

A: Rule	B: Summary of comments	C: Reason for change, remarks
adequate margin is applied.		
(b) ARA to moving rigs or vessels shall only be conducted in multi-crew operations.		
(c) The decision range shall provide adequate obstacle clearance in the missed approach from any destination for which the ARA is planned.		
(d) An approach shall only be continued beyond decision range or below MDH/A when visual reference with the destination has been established.		
(e) For single pilot operations, appropriate increments shall be added to the MDH/A and decision range.		
OPS.CAT.155.A Selection of alternate aerodromes - Aeroplanes	1/ Attached file with numerous changes to the rule text. 2/ It is recommended to insert a point (e): Considering that alternate aerodrome selection shall take into account also extreme meteorological conditions. (e.g. -50° C outside air temperature on aerodromes along polar routes) a requirement appears necessary. 3/ There is no need for different text from EU-OPS 1.295; therefore OPS 1.295 text should be retained.	1/ Noted. Some AMC tables changed as suggested. Further elements to be considered in a new Rulemaking task. 2/ The revised rule text would include considerations of extreme meteorological conditions and do not require these conditions specifically. 3/ Revised text aligned with the content of EU-OPS 1.295.

A: Rule	B: Summary of comments	C: Reason for change, remarks
(a) Notwithstanding OPS.GEN.155, for a flight to be conducted in accordance with Instrument Flight Rules (IFR), at least one destination alternate aerodrome shall be selected and specified in any flight plan, unless:		
(1) the destination aerodrome is isolated; or		
(2) the flying time to the destination does not exceed six hours; and		
(3) two separate runways are usable at the destination aerodrome and available current meteorological information indicates that the following meteorological conditions will exist from one hour before to one hour after the estimated time of arrival are such that:	1/ It is suggested that 'separate runways' should be defined as currently specified in EU-OPS (OPS 1.192 (j))	1/ Definition added to Annex I – Definitions.
(i) the ceiling is at least 2 000 ft or circling height plus 500 ft, whichever is higher; and		
(ii) the visibility is at least 5 km.		
(b) Two destination alternate aerodromes or one destination alternate aerodrome and one 3% en-route alternate aerodrome shall be specified when:	1/ Change 3% en-route alternate into "fuel en -route alternate". 2/ This paragraph is an illustration of the limits of the new structure. We are not convinced to have fully understood what	1/ Term changed. 2/ Structure changed. CAT rules are not anymore divided in GEN and specific CAT rules.

A: Rule	B: Summary of comments	C: Reason for change, remarks
	provision shall be applicable to whom and what provision of OPS.GEN.155 is deemed to be applicable in addition to those laid-down in OPS.CAT.155A,	
(1) available current meteorological information for the destination indicates that the meteorological conditions from one hour before to one hour after the estimated time of arrival will be below the applicable planning minima; or		
(2) meteorological information is not available.		
(c) Except in the case of an isolated destination aerodrome, or in the case of (b) above, the available current meteorological information for a destination aerodrome shall indicate that during a period commencing one hour before and ending one hour after the estimated time of arrival, the weather conditions will be at or above the applicable landing minima as specified in accordance with OPS.GEN.150.	1/ Term "landing minima" incorrect. It shall be renamed by the term "alternate minima".	1/ Rule text changed accordingly.
(d) A destination alternate aerodrome, an isolated aerodrome, a 3% en-route alternate aerodrome or an en-route alternate aerodrome required at the planning stage shall only be selected when the available current meteorological information indicates that during a period commencing one hour before and ending one hour after the estimated time of arrival, the weather conditions will be at or above the	1/ Rescue and fire-fighting services must be taken into account in the selection of alternate aerodromes. 2/ Term "landing minima" incorrect. It shall be renamed by the term "alternate minima".	1/ Text aligned with EU-OPS. Rescue and fire-fighting services will be covered in a separate Rulemaking task. 2/ Rule text changed accordingly.

<table>
<tr><th>A: Rule</th><th>B: Summary of comments</th><th>C: Reason for change, remarks</th></tr>
<tr><td>applicable landing minima in Table 1A of OPS.CAT.155.A.</td><td></td><td></td></tr>
<tr><td>Table 1A of OPS.CAT.155.A Planning minima - Aeroplanes</td><td></td><td></td></tr>
<tr><td>
<table>
<tr><td>Type of approach</td><td>Planning minima</td></tr>
<tr><td>CAT II and III</td><td>CAT I*</td></tr>
<tr><td>CAT I</td><td>Non-precision*and**</td></tr>
<tr><td>Non-precision</td><td>Non-precision ceiling + 200 ft
Non-precision visibility + 1 000 m
*and**</td></tr>
<tr><td>Circling</td><td>Circling</td></tr>
</table>
* Runway Visual Range (RVR)
</td><td>1/ Difficult to put into flight planning systems and time consuming for dispatcher and pilot to determine which minima are applicable. The table used for ETOPS with an increment to the usable facility is easier and more appropriate. The intention is to create a margin in weather not to depend on facilities.

2/ Not included are APV/LPV and those developments are available already. More reason to change the methodology and determine the required minima and add and increment for use as an alternate.

3/ Does a "localizer only approach" include ILS approaches for which the glide slope is temporarily unserviceable?

4/ Alternate weather minima should be based on a risk assessment of the unforecasted deterioration of the weather. Separately a risk mitigation factor should be included based on unforeseen failure of approach equipment. The current table is an inconsistent hybrid of both. Another option is to move these values to the</td><td>1-5/ Comments all taken into consideration for the development of a new table.</td></tr>
</table>

A: Rule	B: Summary of comments	C: Reason for change, remarks
	AMC. 5/ LTS and OTS should be included in the planning minima table.	
** The ceiling must be at or above the Minimum Descent Height (MDH)		
OPS.CAT.155.H Selection of alternate aerodromes - Helicopters		
(a) Notwithstanding OPS.GEN.155, for a flight under Instrument Meteorological Conditions (IMC) or when flying Visual Flight Rules (VFR) and navigating by means other than by reference to visual landmarks, at least one destination alternate shall be selected and specified in any flight plan, unless:		
(1) the destination is a coastal aerodrome;		
(2) for a flight to any other onshore destination, the duration of the flight and the prevailing meteorological conditions at the estimated time of arrival at the intended destination, allow an approach and landing to be made under visual meteorological conditions; or		
(3) the destination aerodrome is isolated and no alternate is available, in which case a Point of No Return (PNR) shall be determined.		

A: Rule	B: Summary of comments	C: Reason for change, remarks
(b) Two destination alternates shall be specified when:		
(1) available current meteorological information for the destination indicates that the meteorological conditions from one hour before to one hour after the estimated time of arrival, will be below the applicable planning minima; or		
(2) meteorological information is not available for the destination.		
(c) Suitable offshore alternates may be selected and specified subject to the following:		
(1) The offshore alternate shall only be used after passing a PNR. Prior to a PNR, onshore alternates shall be used;		
(2) One-engine-inoperative performance capability shall be attainable prior to arrival at the alternate;		
(3) Deck availability shall be guaranteed. The dimensions, configuration and obstacle clearance of individual aerodromes or operating sites shall be assessed, in order to establish operational suitability for use as an alternate by each helicopter type proposed to be used;		

<table>
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<tr><td>(4) Weather minima shall be established, taking reliability and accuracy of meteorological information into account;</td><td></td><td></td></tr>
<tr><td>(5) Appropriate requirements for this type of operation shall be reflected in the Minimum Equipment List (MEL).</td><td></td><td></td></tr>
<tr><td>(d) A destination or destination alternate aerodrome required at the planning stage shall only be selected when the available current meteorological information indicates that during a period commencing one hour before and ending one hour after the estimated time of arrival, the weather conditions will be at or above the applicable landing minima in Table 1H of OPS.CAT.155.H.</td><td></td><td></td></tr>
<tr><td>Table 1H of OPS.CAT.155.H Planning minima destination alternates - Helicopters</td><td></td><td></td></tr>
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<tr><td>Type of approach</td><td>Planning minima</td></tr>
<tr><td>CAT II and III</td><td>CAT I*</td></tr>
<tr><td>CAT I</td><td>Ceiling + 200 ft
Visibility + 400 m</td></tr>
<tr><td>Non-precision</td><td>Non-precision ceiling + 200 ft
Non-precision visibility +</td></tr>
</table></td><td></td><td></td></tr>
</table>

A: Rule	B: Summary of comments	C: Reason for change, remarks
400 m *and** * Runway Visual Range (RVR)		
** The ceiling must be at or above the Minimum Descent Height (MDH)		
OPS.CAT.156.A Selection of take-off alternate aerodromes - Aeroplanes		
(a) A take-off alternate aerodrome shall be selected and specified in the operational flight plan, if:		
(1) at the aerodrome of departure the weather conditions are at or below the applicable aerodrome operating minima; or	1/ Wrong transfer from JARs: a departure aerodrome with weather conditions at the applicable minima is still suitable for landing.	1/ Revised text takes this into account.
(2) it would not be possible to return to the aerodrome of departure due to meteorological or performance reasons.		
(b) The take-off alternate aerodrome shall be located within the following distances from the aerodrome of departure:	1/ This rule is not consistent with EU-OPS due to the lack of reference to the 'in still air standard conditions' (EU OPS 1.295). Realign with EU-OPS. 2/ the purpose of the rule is to determine a distance threshold equivalent to flying during 60 minutes (or 120 minutes) in still	1-2/ Revised text aligned with EU-OPS 1.295.

A: Rule	B: Summary of comments	C: Reason for change, remarks
	air standard conditions (see EU-OPS 1.295). We should find at IR level the conditions for calculating the distance threshold because the way it is written, it seems to be dependent on the actual conditions (temperature, wind, etc...) which is not feasible.	
(1) For aeroplanes having two engines:		
(i) one hour flight time at One-Engine-Inoperative (OEI) cruise speed; or		
(ii) the Extended Range Twin-Engine Operations (ETOPS) diversion time, subject to any Minimum Equipment List (MEL) restrictions, up to a maximum of two hours at the OEI cruise speed.		
(2) For aeroplanes having three or more engines, two hours flight time at OEI cruise speed.		
(c) The available current meteorological information for a take-off alternate aerodrome shall indicate that during a period commencing one hour before and ending one hour after the estimated time of arrival, the weather conditions will be at or above the applicable landing minima. The following criteria shall be taken into account:	1/ One hour before the estimated time of arrival is too much and not useful. It is sufficient to require the weather to be at or above the required minima from ETA plus one hour.	1/ Text aligned with EU-OPS and not changed.

A: Rule	B: Summary of comments	C: Reason for change, remarks
(1) The ceiling, when the only approaches available are non-precision or circling approaches;		
(2) Any limitation related to OEI operations.		
OPS.CAT.156.H Selection of take-off alternate aerodromes - Helicopters		
(a) For a flight under Instrument Meteorological Conditions (IMC), a take-off alternate within one hour flight time at normal cruise speed shall be selected and specified in the operational flight plan if it would not be possible to return to the aerodrome of departure due to meteorological reasons.		
(b) The available current meteorological information for a take-off alternate shall indicate that during a period commencing one hour before and ending one hour after the estimated time of arrival, the weather conditions will be at or above the applicable landing minima. The following criteria shall be taken into account:		
(1) The ceiling, when the only approaches available are non-precision or circling approaches;		
(2) Any limitation related to one-engine-inoperative operations.		

A: Rule	B: Summary of comments	C: Reason for change, remarks
OPS.CAT.170 Minimum terrain clearance altitudes	1 MS: revert to the use of "MSA" or "MOCA";	Not accepted. Text aligned with EU-OPS. Detailed guidance is provided in AMC/GM.
(a) An operator shall specify minimum flight altitudes for all route segments to be flown, which provide the required terrain clearance, taking into account the performance of the aircraft.	1 IS: Clarify (a) or re-align with EU-OPS; 1 MS : re-align with standard terminology, e.g. minimum safe altitude	Accepted. Text aligned with EU-OPS. Accepted. Addressed by alignment with EU-OPS
(b) An operator of complex motor-powered aircraft shall use a method specified in its operations manual.	1 MS: Clarification requested as for what the "method specified" is intended to be used;	Accepted. Addressed by alignment with EU-OPS.
(c) Those specified minimum flight altitudes shall not be less than those established by the State overflown.		
OPS.CAT.180 Routes and areas of operation		
When single-engine aircraft are used, surfaces which permit a safe forced landing to be executed shall be available along the route, except for helicopters when holding an approval in accordance with Part OPS.SPA.001.SFL.	1/ IS: Align with the requirements of ICAO Annex 6, Part I; 2/ 1 MS: Request to also consider operators located on islands and accept water surfaces for single-engine aeroplanes;	1/ Accepted. Text aligned with EU-OPS and ICAO; Editorial deletion of "such" 2/ The rule applies to operators if they are on mainland or an island. There is no justification for a different treatment. Water surfaces are not excluded.
OPS.CAT.185.H Meteorological conditions - Helicopters		

A: Rule	B: Summary of comments	C: Reason for change, remarks
A flight to a helideck or elevated Final Approach and Take-Off Area (FATO) shall not be operated when, according to available information, the mean wind speed at the helideck or elevated aerodrome is 60 knots or more.		
OPS.CAT.205 Fuel and oil supply	1 IS: Re-align with EU-OPS; 1 Member State: adjust title to say "Fuel supply" only;	Accepted. Text aligned with EU-OPS. Not accepted. Change to fuel policy to align with EU-OPS and ICAO Annex 6 Part I.
(a) Fuel and oil supply calculations shall at least be based upon the following operating conditions under which the flight is to be conducted: (1) realistic aircraft fuel consumption data; (2) anticipated masses; (3) expected meteorological conditions; and (4) air navigation services provider(s) procedures and restrictions.		
AEROPLANES		
(b) Notwithstanding OPS.GEN.205, fuel calculations shall be based upon the following:		
(1) taxi fuel expected to be used prior to take-off;		

A: Rule	B: Summary of comments	C: Reason for change, remarks
(2) trip fuel to fly to the planned destination;		
(3) alternate fuel, if a destination alternate is required, which shall include:		
(i) fuel for a missed approach at the destination aerodrome; and		
(ii) fuel for flying and landing at the destination alternate aerodrome, or if 2 destination alternates are required fuel to fly to and land at the alternate, which requires the greater amount of alternate fuel; and		
(4) final reserve fuel:		
(i) for aeroplanes with reciprocating engines to fly for 45 minutes;		
(ii) for aeroplanes with turbine engines to fly for 30 minutes at holding speed at 450 m (1 500 ft) above aerodrome elevation in standard conditions, calculated with the estimated mass on arrival at the destination alternate aerodrome or the destination aerodrome, when no destination alternate aerodrome is required; or		

A: Rule	B: Summary of comments	C: Reason for change, remarks
(iii) in the case of an isolated aerodrome:		
(A) for aeroplanes with reciprocating engines, fuel to fly for 45 minutes plus 15 % of the flight time planned to be spent at cruising level or two hours, whichever is less; or		
(B) for aeroplanes with turbine engines, fuel to fly for two hours at normal cruise consumption above the destination aerodrome, including final reserve fuel;		
(5) fuel to provide for contingencies; and		
(6) extra fuel if requested by the pilot-in-command.		
HELICOPTERS		
(c) Notwithstanding OPS.GEN.205, fuel calculations shall be based upon the following:	1/ There is a lack of cohesion between this rule and AMC 3 OPS.CAT.205.H. Specifically the elements are not organised or ordered in the same way and text that is contained in the rule is repeated in the AMC.	1/ Text has been aligned with JAR-OPS 3, Subpart D

A: Rule	B: Summary of comments	C: Reason for change, remarks
(1) taxi fuel expected to be used prior to take-off;		
(2) trip fuel to fly to the planned destination;		
(3) alternate fuel, if a destination alternate is required, which shall include:		
(i) fuel for a missed approach at the destination aerodrome; and		
(ii) fuel for flying and landing at the destination alternate aerodrome; and		
(iii) for offshore operations 10% of (i) and (ii) above;		
(4) final reserve fuel:		
(i) for VFR operations with reference to visual landmarks, 20 minutes at best range speed;		
(ii) for IFR or when flying VFR and navigating by means other than by reference to visual land marks or at night, fuel to fly for 30 minutes at holding speed at 450 m (1 500 ft) above the destination aerodrome in standard conditions, calculated with the estimated mass on arrival above the		

A: Rule	B: Summary of comments	C: Reason for change, remarks
alternate aerodrome or the destination, when no alternate is required; or		
(iii) in the case of an isolated aerodrome fuel to fly for two hours at holding speed;		
(5) fuel to provide for contingencies; and		
(6) extra fuel if requested by the pilot-in-command.		
OPS.CAT.210 Refuelling/defuelling with wide cut fuels	1 INDIV: Reconsider the possibility of a general prohibition of fuelling/defuelling with these fuels while embarking or disembarking.	Not accepted. The text is aligned with EU-OPS; refuelling incidents in general are rare, and the safety benefit of such a prohibition is unknown.
An aircraft shall not be refuelled or defuelled with AVGAS or wide-cut type of fuel when passengers are embarking, on board or disembarking.		
OPS.CAT.215 In-flight fuel checks		
(a) The amount of usable fuel remaining at any time during flight shall not be less than the fuel required to proceed to an aerodrome/operating site where a safe landing can be made, with final reserve fuel remaining.		
(b) The pilot-in-command shall declare an emergency when calculated usable fuel on landing, at the nearest		

A: Rule	B: Summary of comments	C: Reason for change, remarks
adequate aerodrome/operating site where a safe landing can be performed, is less than final reserve fuel.		
OPS.CAT.225.A Maximum distance from an adequate aerodrome for two-engined aeroplanes	1/ 2 MS: Re-align with EU-OPS to add the approval of the Authority 2/ OPS .CAT.225.A is unclear in that it appears to refer to non-ETOPS and ETOPS aircraft. Proposal: 1.A new AMC should be written and included in AMC OPS.SPA.2. EU-OPS references 1.245(a) (b) and 1.246 (a) (b) are clearer and should be used instead. 3/ According EU-OPS Authority approval for ETOPS operation is required. This should also be mentioned.	1/ Accepted. Text aligned with EU-OPS and moved to SPA.ETOPS. 2/ New rule titles distinguish between rules with and without ETOPS approval. 3/ OR.OPS.AOC requires that SPA approvals needs to be documented in the OSPECS. The ETOPS approval requirements have therefore been transferred to Part-SPA.
(a) Two-engined aeroplanes shall not be operated over a route that contains a point further from an adequate aerodrome than:	1 MS, 2 IS: Re-align with EU-OPS to add "in still air and standard conditions;	Accepted. Text aligned with EU-OPS
(1) for turbo-propeller or jet-powered aeroplanes:		
(i) the distance flown in 60 minutes at the One-Engine-Inoperative (OEI) cruise speed, for aeroplanes:		
(A) with a Maximum Passenger Seating Configuration (MPSC) of more than 19; or	1/ OPS.CAT.225.A.(a)(1)(ii)(A) should read: "with a MPSC of 19 seats or less; AND " not 'or'. Reference EU-OPS 1.245	1/ Text aligns with EU-OPS

A: Rule	B: Summary of comments	C: Reason for change, remarks
	(a)(2)(i)	
(B) a maximum take-off mass of 45 360 kg or more;		
(ii) the distance flown in 120 minutes at the OEI cruise speed, for aeroplanes:		
(A) with a MPSC of 19 seats or less; or	11 IS; Align with EU-OPS 1.245(a)(2)(i)	Accepted. Text aligned with EU-OPS.
(B) a maximum take-off mass less than 45 360 kg.		
For jet aeroplanes, the competent authority may extend the distance referred to above by a maximum of 60 minutes, provided this extension is within the performance limits of the aeroplane and the operator has experience to ensure the safety of the operation; and		
(2) for other aeroplanes, the distance flown in 120 minutes at the OEI cruise speed, or 300 nautical miles, whichever is less.		
(b) The OEI cruise speed shall be determined for each aeroplane type or variant operated, based on the true air speed that the aeroplane can maintain with OEI. The OEI cruise speed shall not exceed the Maximum Operating Speed (V_{MO}).		

A: Rule	B: Summary of comments	C: Reason for change, remarks
(c) Notwithstanding the provision of (a), a two-engined aeroplane may be operated beyond the maximum distance from an adequate aerodrome, provided:	1/ Make reference to AMC 20-6 that is applicable to larger CAT aircraft. Why is AMC 20-6 not renamed AMCx.OPS.CAT.225.A ?	1/ AMC 20-6 material is currently redrafted. The suggestion is noted and will be followed up later.
(1) the aeroplane and its powerplant are certificated for the intended operation;		
(2) the implementation of a set of conditions to ensure that the aeroplane and its powerplant are maintained to meet the necessary reliability criteria;		
(3) the flight crew and all other operations personnel involved are trained and suitably qualified to conduct the intended operation; and		
(4) the maximum diversion time is stipulated in the operations specification to the Air Operator's Certificate (AOC).		
(d) For an extended range operation with a two-engined aeroplane, flight shall only be initiated if an adequate Extended Range Twin-Engine Operations (ETOPS) en-route alternate aerodrome is available, within either the maximum diversion time or a diversion time based on the application of the Minimum Equipment List (MEL), whichever is shorter.		

A: Rule	B: Summary of comments	C: Reason for change, remarks
OPS.CAT.230.A Pushback and towing - Aeroplanes	1 IS, 1 INDIV: Request to delete this rule since pushback and towing are always carried out according to the standards;	Not accepted. Text retained as aligned with EU-OPS. The operator must ensure that standards are applied outside the EU.
Pushback and towing shall be carried out in accordance with appropriate aviation standards and procedures.		
OPS.CAT.235 Air Traffic Services - Motor-powered aircraft		
(a) Air Traffic Services (ATS) shall be used for all flights whenever available.	Eurocontrol, 2 MS: Request to modify considering different airspaces.	Accepted. Text changed to address comment.
(b) Notwithstanding (a), for operations with:		
(1) helicopters having a maximum passenger seating configuration of 9 or less engaged in flight operations conducted within a local area specified in the operations manual; or		
(2) other than complex motor-powered aircraft,		
by day and over routes navigated by reference to visual landmarks, ATS shall be used when required by the applicable airspace requirements.		
(c) A flight shall not be commenced unless a flight plan has been submitted to ATS, or adequate information	1 IS: this goes beyond the original rule;	Accepted. Text aligned with EU-OPS.

A: Rule	B: Summary of comments	C: Reason for change, remarks
has been deposited in order to permit alerting services to be activated if required.		
(d) Notwithstanding (c), when operating from a site where it is impossible to submit a flight plan to ATS, it shall be transmitted as soon as possible after take-off by the pilot-in-command.	1 IS: Suggestion that notification need not be by PiC	Accepted. Text changed to allow a person authorised by the operator. This could reduce demands on PiC in flight and enhance safety, although H operators may not need to use this facility.
OPS.CAT.240.A Threshold crossing height - Aeroplanes		
When conducting precision approaches, an aeroplane shall cross the threshold of the runway by a safe margin and in a landing configuration and attitude.	1 INDIV: Modification requested since every type of approach must fulfil this requirement;	Not accepted. Text retained as aligned with EU/JAR-OPS and ICAO, which refer only to precision approaches

AMC/GM

A: Rule	B: Summary of comments	C: Reason for change, remarks
Subpart A General operating and flight rules **Section II - Operational procedures**		
AMC1 OPS.GEN.100 Ice and other contaminants	1) 1 IS: Allow the usage of AEA recommendations as an AMC 2) 1 IS: This and the following AMC to this rule reference contain procedure descriptions and should not be expressed in this detail.	1) A policy on industry standards is going to be published soon. How to deal with AEA recommendations will be considered. 2) Noted
FLIGHT IN EXPECTED OR ACTUAL ICING CONDITIONS		
1. In accordance with paragraph 2.a.5 of Annex IV to Regulation (EC) No 216/2008 (Essential requirements for air operations), in case of flight into known or expected icing conditions, the aircraft must be certified, equipped and/or treated to operate safely in such conditions. The procedures to be established by the operator should take account of the design, the equipment, the configuration of the aircraft and the necessary training. For these reasons, different aircraft types operated by the same company may require the development of different procedures. In every case the relevant limitations are those which are defined in the Aircraft Flight Manual (AFM) and other documents produced by the manufacturer.		

A: Rule	B: Summary of comments	C: Reason for change, remarks
2. The operator should ensure that the procedures take account of the following:		
a. The equipment and instruments which must be serviceable for flight in icing conditions;		
b. The limitations on flight in icing conditions for each phase of flight. These limitations may be imposed by the aircraft's de-icing or anti-icing equipment or the necessary performance corrections which have to be made;		
c. The criteria the flight crew should use to assess the effect of icing on the performance and/or controllability of the aircraft;		
d. The means by which the flight crew detects, by visual cues or the use of the aircraft's ice detection system, that the flight is entering icing conditions; and		
e. The action to be taken by the flight crew in a deteriorating situation (which may develop rapidly) resulting in an adverse affect on the performance and/or controllability of the aircraft, due to: i. the failure of the aircraft's anti-icing or de-icing equipment to control a build-up of ice; and/or ii. ice build-up on unprotected areas.		
3. Training for dispatch and flight in expected or actual icing conditions. The content of the operations manual should reflect	1 MS: There are no training requirements for dispatcher in EU-	That is correct. This would go beyond the scope of this

A: Rule	B: Summary of comments	C: Reason for change, remarks
the training, both conversion and recurrent, which flight crew, cabin crew and all other relevant operational personnel require in order to comply with the procedures for dispatch and flight in icing conditions:	OPS; the training for other relevant operational personnel is not described.	requirement. However, established industry standards cover these items.
a. For the flight crew, the training should include:		
i. instruction in how to recognise, from weather reports or forecasts which are available before flight commences or during flight, the risks of encountering icing conditions along the planned route and on how to modify, as necessary, the departure and in-flight routes or profiles;		
ii. instruction in the operational and performance limitations or margins;		
iii. the use of in-flight ice detection, anti-icing and de-icing systems in both normal and abnormal operation; and		
iv. instruction in the differing intensities and forms of ice accretion and the consequent action which should be taken.		
b. For the cabin crew, the training should include;		
i. awareness of the conditions likely to produce surface contamination; and	1) 1 IS: Specify: awareness of the ground weather conditions.	1) Text realigned with ACJ.

A: Rule	B: Summary of comments	C: Reason for change, remarks
	2) (1 MS): Realign with ACJ text.	
ii. the need to inform the flight crew of significant ice accretion.	1) (1 MS): Realign with ACJ text.	1) Text realigned with ACJ.
AMC2 OPS.GEN.100 Ice and other contaminants		
DE-ICING/ANTI-ICING		
1. De-icing and/or anti-icing procedures should take into account manufacturer's recommendations, including those that are type-specific and cover: a. contamination checks, including detection of clear ice and under-wing frost. Limits on the thickness/area of contamination published in the AFM or other manufacturers' documentation should be followed; b. procedures to be followed if de-icing and/or anti-icing procedures are interrupted or unsuccessful; c. post treatment checks; d. pre take-off checks; e. pre take-off contamination checks; f. the recording of any incidents relating to de-icing and/or anti-icing; and g. the responsibilities of all personnel involved in de-icing		

A: Rule	B: Summary of comments	C: Reason for change, remarks
and/or anti-icing.		
2. Operator's procedures should ensure that:		
a. when aircraft surfaces are contaminated by ice, frost, slush or snow, they are de-iced prior to take-off; according to the prevailing conditions. Removal of contaminants may be performed with mechanical tools, fluids (including hot water), infra-red heat or forced air, taking account of aircraft type-specific requirements;		
b. account is taken of the wing skin temperature versus Outside Air Temperature (OAT), as this may affect: i. the need to carry out aircraft de-icing and/or anti-icing; and/or ii. the performance of the de-icing/anti-icing fluids;		
c. when freezing precipitation occurs or there is a risk of freezing precipitation occurring which would contaminate the surfaces at the time of take-off, aircraft surfaces should be anti-iced. If both de-icing and anti-icing are required, the procedure may be performed in a one or two-step process, depending upon weather conditions, available equipment, available fluids and the desired hold-over time (HoT). One-step de-icing/anti-icing means that de-icing and anti-icing are carried out at the same time, using a mixture of de-icing/anti-icing fluid and water. Two-step de-icing/anti-icing means that de-icing and anti-		

A: Rule	B: Summary of comments	C: Reason for change, remarks
icing are carried out in two separate steps. The aircraft is first de-iced using heated water only or a heated mixture of de-icing/anti-icing fluid and water. After completion of the de-icing operation a layer of a mixture of de-icing/anti-icing fluid and water, or of de-icing/anti-icing fluid only, is to be sprayed over the aircraft surfaces. The second step will be applied before the first step fluid freezes, typically within three minutes and, if necessary, area by area;		
d. when an aircraft is anti-iced and a longer HoT is needed/desired, the use of a less diluted Type II or Type IV fluid should be considered;		
e. all restrictions relative to OAT and fluid application (including, but not necessarily limited to, temperature and pressure) published by the fluid manufacturer and/or aircraft manufacturer, are followed and procedures, limitations and recommendations to prevent the formation of fluid residues are followed;		
f. during conditions conducive to aircraft icing on the ground or after de-icing and/or anti-icing, an aircraft is not dispatched for departure unless it has been given a contamination check or a post treatment check by a trained and qualified person. This check should cover all treated surfaces of the aircraft and be performed from points offering sufficient accessibility to these parts. To ensure that there is no clear ice on suspect areas, it may be necessary to make a physical check (e.g. tactile);		

A: Rule	B: Summary of comments	C: Reason for change, remarks
g. the required entry is made in the technical log;		
h. the pilot-in-command continually monitors the environmental situation after the performed treatment. Prior to take-off he/she performs a pre-take-off check, which is an assessment of whether the applied HoT is still appropriate. This pre-take-off check includes, but is not limited to, factors such as precipitation, wind and OAT;		
i. if any doubt exists as to whether a deposit may adversely affect the aircraft's performance and/or controllability characteristics, the pilot-in-command should arrange for a pre-take-off contamination check to be performed in order to verify that the aircraft's surfaces are free of contamination. Special methods and/or equipment may be necessary to perform this check, especially at night time or in extremely adverse weather conditions. If this check cannot be performed just before take-off, re-treatment should be applied;		
j. when re-treatment is necessary, any residue of the previous treatment should be removed and a completely new de-icing/anti-icing treatment should be applied; and		
k. when a Ground Ice Detection System (GIDS) is used to perform an aircraft surfaces check prior to and/or after a treatment, the use of GIDS by suitably trained personnel should be part of the procedure.		

A: Rule	B: Summary of comments	C: Reason for change, remarks
3. Special operational considerations:		
a. When using thickened de-icing/anti-icing fluids, the operator should consider a two-step de-icing/anti-icing procedure, the first step preferably with hot water and/or un-thickened fluids;		
b. The use of de-icing/anti-icing fluids should be in accordance with the aircraft manufacturer's documentation. This is particularly true for thickened fluids to assure sufficient flow-off during take-off;		
c. The operator should comply with any type-specific operational requirement(s), such as an aircraft mass decrease and/or a take-off speed increase associated with a fluid application;	1 IS: Suggested addition of performance effects associated with fluid application	Accepted.
d. The operator should take into account any flight handling procedures (stick force, rotation speed and rate, take-off speed, aircraft attitude etc.) laid down by the aircraft manufacturer when associated with a fluid application;		
e. The limitations or handling procedures resulting from subparagraphs c and/or d above should be part of the flight crew pre-take-off briefing.		
4. Communications:		

A: Rule	B: Summary of comments	C: Reason for change, remarks
a. Before aircraft treatment. When the aircraft is to be treated with the flight crew on board, the flight and personnel involved in the operation should confirm the fluid to be used, the extent of treatment required and any aircraft type-specific procedure(s) to be used. Any other information needed to apply the HoT tables should be exchanged;		
b. Anti-icing code. The operator's procedures should include an anti-icing code, which indicates the treatment the aircraft has received. This code provides the flight crew with the minimum details necessary to estimate a HoT and confirms that the aircraft is free of contamination;		
c. After Treatment. Before reconfiguring or moving the aircraft, the flight crew should receive a confirmation from the personnel involved in the operation that all de-icing and/or anti-icing operations are complete and that all personnel and equipment are clear of the aircraft.		
5. Hold-over protection. The operator should publish in the operations manual, when required, the HoTs in the form of a table or a diagram, to account for the various types of ground icing conditions and the different types and concentrations of fluids used. However, the times of protection shown in these tables are to be used as guidelines only and are normally used in conjunction with the pre-take-off check.		
6. Training. The operator's initial and recurrent de-icing and/or anti-icing training programmes (including communication		

A: Rule	B: Summary of comments	C: Reason for change, remarks
training) for flight crew and those of its personnel involved in the operation who are involved in de-icing and/or anti-icing should include additional training if any of the following is introduced: a. A new method, procedure and/or technique; b. A new type of fluid and/or equipment; c. A new type of aircraft.		
7. Contracting. When the operator contracts training on de-icing/anti-icing, the operator should ensure that the contractor complies with the operator's training/qualification procedures, together with any specific procedures in respect of: a. de-icing and/or anti-icing methods and procedures; b. fluids to be used, including precautions for storage and preparation for use; c. specific aircraft requirements (e.g. no-spray areas, propeller/engine de-icing, APU operation etc.); and d. checking and communications procedures.	1 IS: Request confirmation that quality procedures compliance has been removed to reflect MS requirements.	Confirmed.
8. Special maintenance considerations:		
a. General. The operator should take proper account of the possible side-effects of fluid use. Such effects may include, but are not necessarily limited to, dried and/or re-hydrated residues, corrosion and the removal of lubricants;		

A: Rule	B: Summary of comments	C: Reason for change, remarks
b. Special considerations regarding residues of dried fluids. The operator should establish procedures to prevent or detect and remove residues of dried fluid. If necessary the operator should establish appropriate inspection intervals based on the recommendations of the airframe manufacturers and/or the operator's own experience:		
i. Dried fluid residues. Dried fluid residues could occur when surfaces have been treated and the aircraft has not subsequently been flown and has not been subject to precipitation. The fluid may then have dried on the surfaces;		
ii. Re-hydrated fluid residues. Repetitive application of thickened de-icing/anti-icing fluids may lead to the subsequent formation/build up of a dried residue in aerodynamically quiet areas, such as cavities and gaps. This residue may re-hydrate if exposed to high humidity conditions, precipitation, washing, etc., and increase to many times its original size/volume. This residue will freeze if exposed to conditions at or below zero degrees Celsius. This may cause moving parts, such as elevators, ailerons, and flap actuating mechanisms to stiffen or jam in-flight. Re-hydrated residues may also form on exterior surfaces, which can reduce lift, increase drag and stall speed. Re-hydrated residues may also collect inside control surface structures and cause clogging of drain holes or imbalances to flight controls. Residues may also collect in hidden areas, such as around flight control hinges, pulleys, grommets, on cables and in gaps;		

A: Rule	B: Summary of comments	C: Reason for change, remarks
iii. Operators are strongly recommended to obtain information about the fluid dry-out and re-hydration characteristics from the fluid manufacturers and to select products with optimised characteristics;	1 IS: Suggested change to strengthen this "requirement".	Current text is sufficiently clear.
iv. Additional information should be obtained from fluid manufacturers for handling, storage, application and testing of their products.		
GM1 OPS.GEN.100 Ice and other contaminants	1 MS: recommendation to clarify the titles to show that the GMs relate to aeroplane ground procedures. Recommendation to combine GM 1, 2, & 3	Separate GMs retained for consistency with rest of AMC material
TERMINOLOGY Terminology. Terms used in the context of de-icing/anti-icing should be given the following meaning:		
1. Anti-icing fluid. Anti-icing fluid includes, but is not limited to, the following: a. Type I fluid if heated to min 60 °C at the nozzle; b. Mixture of water and Type I fluid if heated to min 60 °C at the nozzle; c. Type II fluid; d. Mixture of water and Type II fluid; e. Type III fluid;		

A: Rule	B: Summary of comments	C: Reason for change, remarks
f. Mixture of water and Type III fluid; g. Type IV fluid; h. Mixture of water and Type IV fluid.		
On uncontaminated aircraft surfaces Type II, III and IV anti-icing fluids are normally applied unheated.		
2. Clear ice. A coating of ice, generally clear and smooth, but with some air pockets. It forms on exposed objects, the temperatures of which are at, below or slightly above the freezing temperature, by the freezing of super-cooled drizzle, droplets or raindrops.		
3. Conditions conducive to aircraft icing on the ground (e.g. freezing fog, freezing precipitation, frost, rain or high humidity (on cold soaked wings), snow or mixed rain and snow).		
4. Contamination. Contamination, in this context, is understood as being all forms of frozen or semi-frozen moisture, such as frost, snow, slush or ice.		
5. Contamination check. Check of aircraft for contamination to establish the need for de-icing.		
6. De-icing fluid. Such fluid includes, but is not limited to, the following: a. Heated water; b. Type I fluid;		

A: Rule	**B: Summary of comments**	**C: Reason for change, remarks**
c. Mixture of water and Type I fluid; d. Type II fluid; e. Mixture of water and Type II fluid; f. Type III fluid; g. Mixture of water and Type III fluid; h. Type IV fluid; i. Mixture of water and Type IV fluid.		
De-icing fluid is normally applied heated to ensure maximum efficiency.		
7. De-icing/anti-icing. This is the combination of de-icing and anti-icing performed in either one or two steps.		
8. Ground Ice Detection System (GIDS). System used during aircraft ground operations to inform the personnel involved in the operation and/or the flight crew about the presence of frost, ice, snow or slush on the aircraft surfaces.		
9. Lowest Operational Use Temperature (LOUT). The lowest temperature at which a fluid has been tested and certified as acceptable in accordance with the appropriate aerodynamic acceptance test whilst still maintaining a freezing point buffer of not less than: a. 10°C for a Type I de-icing/anti-icing fluid; or b. 7°C for Type II, III or IV de-icing/anti-icing fluids.		

A: Rule	B: Summary of comments	C: Reason for change, remarks
10. Post-treatment check. An external check of the aircraft after de-icing and/or anti-icing treatment accomplished from suitably elevated observation points (e.g. from the de-icing/anti-icing equipment itself or other elevated equipment) to ensure that the aircraft is free from any frost, ice, snow, or slush.		
11. Pre-take-off check. An assessment normally performed from within the flight deck, , to validate the applied HoT	1 IS: Suggested addition of text to amplify the type of inspections required	Not accepted. Text aligned with EU-OPS.
12. Pre-take-off contamination check. A check of the treated surfaces for contamination, performed when the HoT has been exceeded or if any doubt exists regarding the continued effectiveness of the applied anti-icing treatment. It is normally accomplished externally, just before commencement of the take-off run.		
GM2 OPS.GEN.100 Ice and other contaminants		
ANTI-ICING CODES		
1. The following are examples of anti-icing codes: a. "Type I" at (start time) – To be used if anti-icing treatment has been performed with a Type I fluid; b. "Type II/100" at (start time) – To be used if anti-icing treatment has been performed with undiluted Type II fluid;	1 Non-EU NAA: Recommend adopting AEA guidelines	The Agency will soon publish a policy on industry standards. AEA guidelines could then provided that all criteria are fulfilled be used as an alternative AMC.

A: Rule	B: Summary of comments	C: Reason for change, remarks
c. "Type II/75" at (start time) – To be used if anti-icing treatment has been performed with a mixture of 75 % Type II fluid and 25 % water; d. "Type IV/50" at (start time) – To be used if anti-icing treatment has been performed with a mixture of 50 % Type IV fluid and 50 % water.		
2. When a two-step de-icing/anti-icing operation has been carried out, the anti-icing code should be determined by the second step fluid. Fluid brand names may be included, if desired.		
GM3 OPS.GEN.100 Ice and other contaminants		
DE-ICING/ANTI-ICING		
Further guidance material on this issue is given in the International Civil Aviation Organization (ICAO) Manual of Aircraft Ground De-icing/Anti-icing Operations (Doc 9640) (hereinafter referred to as the ICAO Manual of Aircraft Ground De-icing/Anti-icing Operations).		
1. General:		
a. Any deposit of frost, ice, snow or slush on the external surfaces of an aircraft may drastically affect its flying qualities because of reduced aerodynamic lift, increased drag, modified stability and control characteristics. Furthermore, freezing deposits may cause moving parts, such as elevators, ailerons, flap actuating mechanism etc.,		

A: Rule	B: Summary of comments	C: Reason for change, remarks
to jam and create a potentially hazardous condition. Propeller/engine/Auxiliary Power Unit (APU)/systems performance may deteriorate due to the presence of frozen contaminants to blades, intakes and components. Also, engine operation may be seriously affected by the ingestion of snow or ice, thereby causing engine stall or compressor damage. In addition, ice/frost may form on certain external surfaces (e.g. wing upper and lower surfaces, etc.) due to the effects of cold fuel/structures, even in ambient temperatures well above zero degrees centigrade;		
b. Procedures established by the operator for de-icing and/or anti-icing are intended to ensure that the aircraft is clear of contamination so that degradation of aerodynamic characteristics or mechanical interference will not occur and, following anti-icing, to maintain the airframe in that condition during the appropriate HoT;		
c. Under certain meteorological conditions, de-icing and/or anti-icing procedures may be ineffective in provided sufficient protection for continued operations. Examples of these conditions are freezing rain, ice pellets and hail, heavy snow, high wind velocity, fast dropping OAT or any time when freezing precipitation with high water content is present. No HoT guidelines exist for these conditions;		
d. Material for establishing operational procedures can be found, for example, in:		

A: Rule	B: Summary of comments	C: Reason for change, remarks
i. ICAO Annex 3, Meteorological Service for International Air Navigation;		
ii. ICAO Manual of Aircraft Ground De-icing/Anti-icing Operations;		
iii. ISO 11075 Aircraft -- De-icing/anti-icing fluids -- ISO type I ;		
iv. ISO 11076 Aircraft -- De-icing/anti-icing methods with fluids2;		
v. ISO 11077 Aerospace -- Self propelled de-icing/anti-icing vehicles -- Functional requirements2;		
vi. ISO 11078 Aircraft - De-icing/anti-icing fluids -- ISO types II, III and IV2;		
vii. AEA "Recommendations for de-icing/anti-icing of aircraft on the ground";		
viii. AEA "Training recommendations and background information for de-icing/anti-icing of aircraft on the ground";		
ix. EUROCAE ED-104A Minimum Operational Performance Specification for Ground Ice Detection Systems;		
x. SAE AS5681 Minimum Operational Performance Specification for Remote On-Ground Ice Detection		

A: Rule	B: Summary of comments	C: Reason for change, remarks
Systems;		
xi. SAE ARP4737 Aircraft - De-icing/anti-icing methods;		
xii. SAE AMS1424 De-icing/anti-Icing Fluid, Aircraft, SAE Type I;		
xiii. SAE AMS1428 Fluid, Aircraft De-icing/anti-Icing, Non-Newtonian, (Pseudoplastic), SAE Types II, III, and IV;		
xiv. SAE ARP1971 Aircraft De-icing Vehicle - Self-Propelled, Large and Small Capacity;		
xv. SAE ARP5149 Training Programme Guidelines for De-icing/anti-icing of Aircraft on Ground; and		
xvi. ARP5646 Quality Program Guidelines for De-icing/anti-icing of Aircraft on the Ground.	1 MS: clarification of document source (SAE)	Accepted. Editorial change.
2. Fluids:		
a. Type I fluid: Due to its properties, Type I fluid forms a thin, liquid-wetting film on surfaces to which it is applied which, under certain weather conditions, gives a very limited HoT. With this type of fluid, increasing the concentration of fluid in the fluid/water mix does not provide any extension in HoT;		

A: Rule	B: Summary of comments	C: Reason for change, remarks
b. Type II and Type IV fluids contain thickeners which enable the fluid to form a thicker liquid-wetting film on surfaces to which it is applied. Generally, this fluid provides a longer HoT than Type I fluids in similar conditions. With this type of fluid, the HoT can be extended by increasing the ratio of fluid in the fluid/water mix;		
c. Type III fluid is a thickened fluid especially intended for use on aircrafts with low rotation speeds;		
d. Fluids used for de-icing and/or anti-icing should be acceptable to the operator and the aircraft manufacturer. These fluids normally conform to specifications such as SAE AMS1424, SAE AMS1428 or equivalent. Use of non-conforming fluids is not recommended due to their characteristics being unknown. The anti-icing and aerodynamic properties of thickened fluids may be seriously degraded by, for example, inappropriate storage, treatment, application, application equipment and age.		
3. Hold-over protection:		
a. Hold-over protection is achieved by a layer of anti-icing fluid remaining on and protecting aircraft surfaces for a period of time. With a one-step de-icing/anti-icing procedure, the HoT begins at the commencement of de-icing/anti-icing. With a two-step procedure, the HoT begins at the commencement of the second (anti-icing)		

A: Rule	B: Summary of comments	C: Reason for change, remarks
step. The hold-over protection runs out: i. at the commencement of the take-off roll (due to aerodynamic shedding of fluid); or ii. when frozen deposits start to form or accumulate on treated aircraft surfaces, thereby indicating the loss of effectiveness of the fluid;		
b. The duration of hold-over protection may vary depending on the influence of factors other than those specified in the HoT tables. Guidance should be provided by the operator to take account of such factors which may include: i. atmospheric conditions, e.g. exact type and rate of precipitation, wind direction and velocity, relative humidity and solar radiation; and ii. the aircraft and its surroundings, such as aircraft component inclination angle, contour and surface roughness, surface temperature, operation in close proximity to other aircrafts (jet or propeller blast) and ground equipment and structures;		
c. HoTs are not meant to imply that flight is safe in the prevailing conditions if the specified HoT has not been exceeded. Certain meteorological conditions, such as freezing drizzle or freezing rain, may be beyond the certification envelope of the aircraft;		
d. References to usable HoT tables may be found in the AEA "Recommendations for de-icing/anti-icing of aircraft on		

A: Rule	B: Summary of comments	C: Reason for change, remarks
the ground".		
AMC OPS.GEN.110 Carriage of persons		
SEATS WHICH PERMIT DIRECT ACCESS TO EMERGENCY EXITS Persons who are allocated seats which permit direct access to emergency exits should appear to be reasonably fit, strong and able to assist the rapid evacuation of the aircraft in an emergency after an appropriate briefing by the crew.	1 IA: Request to add: "…and such a size as to be able to safely use such exits"; 1 IS: Objection to assumed "allocation" of seats; rule to cater for free seating procedures. 2 IS: The issue of patients on a stretcher should be addressed	Text aligned with TGL 44 since it gives the operator the possibility to act according to his kind of operation/aircraft; Text amended to cover free seating policies
GM1 OPS.GEN.110 Carriage of persons		
GENERAL – COMMERCIAL OPERATIONS OTHER THAN COMMERCIAL AIR TRANSPORT The carriage of operational personnel indispensable to the performance of a task and carried on a flight taking place immediately before, during or immediately after and directly associated with a specialised task, is not considered Commercial Air Transport. Except for parachute operations, the number of persons carried should not exceed six, excluding crew members.		
GM OPS.GEN.110 Carriage of persons		Or incorporate in AMC; e.g. Persons who occupy seats from

A: Rule	B: Summary of comments	C: Reason for change, remarks
MEANING OF DIRECT ACCESS 'Direct access' means a seat from which a passenger can proceed directly to the exit without entering an aisle or passing around an obstruction.		which a passenger can proceed directly to an adjacent exit without entering an aisle or passing around an obstruction. (direct access seats), should appear to be reasonably fit, strong and able to assist the rapid evacuation of the aircraft in an emergency after an appropriate briefing by the crew.
AMC1 OPS.GEN.115 Passenger briefing		
SAFETY AND EMERGENCY EQUIPMENT		
Relevant safety and emergency equipment includes: 1. seat belts or harnesses; 2. life jackets; 3. oxygen equipment; 4. passenger emergency briefing cards; and 5. other emergency equipment.	1 MS: Request to upgrade to IR; 1 IS: Request to delete this AMC, because "other emergency equipment" is too vague; 1 MS , 2 IS: Adjust the text to small operations that do not have a briefing card and different emergency equipment;	Not accepted. This AMC is applicable to all operations and aircraft, therefore the text gives more flexibility to the operators; it includes, but is not limited to, the described items. Not accepted. The other equipment depends on the operation. The operator of a small operation has the possibility to develop an alternative AMC.

A: Rule	B: Summary of comments	C: Reason for change, remarks
AMC2 OPS.GEN.115 Passenger briefing		
MOTOR-POWERED AIRCRAFT – COMMERCIAL AIR TRANSPORT		
1. Before take-off, passengers should be given a demonstration on: a. the use of safety belts and/or safety harnesses, including how to fasten and unfasten safety belts and/or safety harnesses; b. the location and use of oxygen equipment, if required; c. the location and use of life jackets, if required; and d. for helicopters, the location and use of life-rafts and survival suits, if required.	1 IS: Consider the operation of smaller aircraft with MPSC or 19 or less; 1 IS: Consider the lack of clarity about the necessity to brief in flight and also consider ICAO;	If the AMC would not fit for a certain operations, the operator can develop an alternative means of compliance. For smaller aircraft, the Agency proposes a passenger training programme. Partially accepted. Text rearranged for clarity.
2. Passengers should be given a briefing, if applicable, on the following items:		
a. Before take-off: i. smoking regulations; ii. back of the seat to be in the upright position and tray table stowed before take-off and landing; iii. location of emergency exits; iv. extinguishing all smoking materials whenever oxygen is being used; v. location and use of floor proximity escape path		

A: Rule	B: Summary of comments	C: Reason for change, remarks
markings; vi. stowage of hand baggage; vii. restrictions on the use of portable electronic devices; and viii. location and contents of the safety briefing card.		
b. After take-off: i. smoking regulations; ii. use of safety belts and/or safety harnesses; and iii. safety benefits of having seat belts fastened when seated irrespective of seat belt sign illumination.		
c. Before landing: i. smoking regulations; ii. use of safety belts and/or safety harnesses; iii. back of the seat to be in the upright position and tray table stowed before take-off and landing; iv. re-stowage of hand baggage; and v. restrictions on the use of portable electronic devices.		
d. After landing: i. smoking regulations; and ii. use of safety belts and/or safety harnesses.		
3. The briefing may be conducted verbally, through the use of		

A: Rule	B: Summary of comments	C: Reason for change, remarks
audio-visual equipment, or a combination of both.		
4. In addition to paragraph 3.a.6. of Annex IV to Regulation (EC) No 216/2008 (Essential requirements for air operations), passengers should also be instructed in the use and location of the required survival equipment.		
AMC3 OPS.GEN.115 Passenger briefing		
PASSENGER SAFETY TRAINING – MOTOR-POWERED AIRCRAFT WHERE NO CABIN CREW IS REQUIRED TO BE CARRIED – COMMERCIAL AIR TRANSPORT		
1. An operator should establish a training programme for passengers covering safety and emergency procedures, including AMC1 CAT OPS.GEN.115 1. and 2. for a given type of aircraft.	1 INDIV: Medical passengers should be treated differently to other passengers;	The passenger training programme referred to in AMC1-CAT.OP.AH.170 also applies to medical passengers.
2. Passengers who have been trained according to this programme and have flown on the aircraft type within the last 90 days may be carried on board without receiving a briefing/demonstration as required by AMC1 CAT OPS.GEN.115.	1 INDIV: Request to do the training once per year;	This is a recency requirement, not a frequency requirement;
AMC4 OPS.GEN.115.B Passenger briefing		

A: Rule	B: Summary of comments	C: Reason for change, remarks
GENERAL - BALLOONS		
1. Before and after take-off and landing, passengers should be given a briefing, relevant to the phase of flight, on the following items:		
a. The use of safety and emergency equipment, such as: i. landing hand-holds; and ii. the items mentioned in AMC1 OPS.GEN.115, where applicable.		
b. Wearing of suitable clothing;		
c. Smoking regulations;		
d. Stowage of baggage;		
e. The importance to remain inside the basket at all times;		
f. The landing positions to be assumed to minimise the effect of the impact upon an emergency landing.		
2. Before take-off, passengers should be given a demonstration on AMC4 OPS.GEN.115.B 1.a. and 1.f.		

A: Rule	B: Summary of comments	C: Reason for change, remarks
AMC OPS.GEN.120.B Securing of passenger cabin and galleys		
CARRIAGE AND STOWAGE OF HAND BAGGAGE - BALLOONS		
1. Only the following items should be considered for carriage as hand baggage during a balloon flight, provided they can be stowed so that they do not pose any hazard during flight or when carrying out emergency procedures: a. Camera equipment; b. Binoculars.		
2. In the few minutes preceding the landing and on indication by the pilot-in-command, passengers should stow cameras, binoculars, etc. preferably in their adapted bag/case. Passengers should not keep bulky objects attached around the neck by straps.		
AMC OPS.GEN.125 Portable electronic devices		
GENERAL – COMMERCIAL AIR TRANSPORT		
1. Scope: This AMC addresses Portable Electronic Devices (PEDs), which are not approved equipment permanently installed in the aircraft. Systems and equipment approved and installed in the aircraft will need to satisfy applicable certification requirements and related	Request to address the issue of EFB;	Text added to indicate the need for separate approval of EFBs, which will be a future rulemaking task

A: Rule	B: Summary of comments	C: Reason for change, remarks
operating restrictions. Similarly, this AMC does not apply to permitted medical equipment which meets applicable requirements.		
2. Restrictions on use of PEDs by passengers: If an operator permits passengers to use PEDs on board its aircraft, procedures should be in place to control their use. It is the responsibility of the operator to ensure that all aircraft crew and ground agents are trained to enforce the restrictions on this equipment consistent with these procedures. These procedures should ensure the following:	1 IS: statement there is no need for training of ground staff as restrictions are applied by cabin crew;	Ground agent training relates to briefings not enforcement. This is transposed TGL 44 text.
a. Cell phones and other transmitting devices are not used and are switched off from the time at the start of the flight when the passengers have boarded and all doors have been closed until the end of the flight when a passenger door has been opened.		
The pilot-in-command may permit the use of cell phones when the aircraft is stationary during prolonged departure delays provided that sufficient time is available to check the cabin before the flight proceeds. Similarly, after landing, the pilot-in-command may authorise cell phone use in the event of a prolonged delay for a parking/gate position (even though doors are closed and the engines are running).		
This paragraph does not apply to a PED where the sole means of transmission is identified as a low power transmitting device compliant with the "Bluetooth" Standard.	1 INDIV: Statement that the allowance of operating low power Bluetooth transmitters is too restrictive;	Text not changed; it may be considered a future rulemaking task;

A: Rule	B: Summary of comments	C: Reason for change, remarks
This paragraph may not apply to systems installed in the aircraft for the use of cell phones in-flight;		
b. PEDs that are not transmitting devices are disconnected from any in-seat electrical power supply, switched off and stowed during taxiing, take-off, approach and landing, and during abnormal or emergency conditions.		
This restriction does not apply to permitted medical equipment.		
This restriction applies to equipment carried on by the passenger or loaned to the passenger by the aircraft operator.		
In the case of a PED where the sole means of transmission is identified as a low power "Bluetooth" transmitter, it may be considered to be a non-intentional transmitter and may be used during non-critical phases of flight as allowed by this paragraph;		
c. Necessary announcements are made both prior to and during boarding of the aircraft so that passengers may be reminded of the restrictions applicable to cell phones and other transmitting devices before fastening their seat belts;	1 IA, 1 INDIV, 1 IS: request to re-consider the "timing", suggestion is "before, during and after the flight", consider the use of mobile phones and PED until the aircraft doors are closed;	This will be considered as part of future rulemaking task.
d. Cabin crew monitor passenger use of equipment during the flight and, where necessary, ensure suspect equipment is switched off. The cabin crew should be particularly alert to passenger misuse of equipment which has a built-in cell phone. Furthermore, if turbulence is		

A: Rule	B: Summary of comments	C: Reason for change, remarks
encountered and the crew determine that loose items could present a hazard, instructions will be given that these should be stowed;		
e. Appropriate flight crew to cabin crew co-ordination exists to deal with interference or other PED safety related problems;	1 INDIV: Proposal to replace by "The operator shall establish operational guidance for the crew regarding the operational approval of PED (transmitting and non-intentional transmitting PEDs), which is in line with applicable European aviation standards on the usage of portable electronic devices on board";	This (e) is about crew coordination, not provision of general guidance on operational approval.
f. Crew are aware of the proper means to switch off in-seat power supplies used for PEDs;		
g. Check-in and ground handling staff, as well as flight and cabin crews, are aware of the safety issues and restrictions concerning PEDs;		
h. Occurrences are reported to the responsible authority of suspected or confirmed interference which has potential safety implications. Where possible, to assist follow-up technical investigation, reports should describe the offending device, identify the brand name and model number, its location in the aircraft at the time of the occurrence, interference symptoms, and the results of actions taken by the crew.		

A: Rule	B: Summary of comments	C: Reason for change, remarks
The co-operation of the device owner should be sought by obtaining contact details.		
3. Restrictions on the use of PEDs by cabin crew: PEDs provided to assist cabin crew in their duties should be switched off and stowed during taxiing, take-off, approach and landing, unless tests have been performed which confirm that these PEDs are not a source of unacceptable interference or other safety hazard. Cabin crew should observe the same restrictions for cell phone usage as applicable to passengers.		
4. Restrictions on use of PEDs by flight crew: PEDs provided to assist the flight crew in their duties will need to be used in compliance with the procedures and conditions stated in the operations manual of the aircraft operator. Such equipment will need to be switched off and stowed during all phases of flight unless: a. tests have been performed which confirm that these PEDs are not a source of unacceptable interference or distraction; b. the PEDs do not pose a loose-item risk or other hazard, and c. the conditions for their use in-flight are stated in the operations manual.		
Flight and cabin crews should avoid using cell phones and other transmitting devices during critical pre-flight procedures (e.g. when loading route information into navigation systems or when	1 INDIV: Proposal to delete the examples in the brackets, delete the requirement that the crew has to	Not accepted. No text change because this is AMC, which here

A: Rule	B: Summary of comments	C: Reason for change, remarks
monitoring fuel loading). Otherwise, flight crews and other persons involved in dispatching the aircraft will need to observe the same restrictions as passengers.	turn off cell phones during fuelling, respectively;	gives examples.
This restriction does not preclude use of a cell phone by the flight crew to deal with an emergency although reliance should not be predicated on a cell phone for this purpose.		
5. Other precautions: a. Except for items which do not pose a loose item risk, PEDs, together with any accessories such as spare batteries or cables, carried on board an aircraft for crew or passenger use, should be provided with suitable stowage facilities. b. Where in-seat electrical power supplies are available for passenger use, information cards giving safety instructions should be provided.		
GM OPS.GEN.125 Portable electronic devices		
GENERAL - COMMERCIAL AIR TRANSPORT		
1. General:	1 INDIV: Request to align the text with Annex 4 of ED-130 and App. 3 of DO-294;	This will be considered as part of the future rulemaking task.
The use of PEDs on board aircraft by crew members and passengers presents a source of uncontrolled electro-magnetic radiation with the risk of adverse interference effects to aircraft systems. Given that a		

A: Rule	B: Summary of comments	C: Reason for change, remarks
civil aircraft flying at high altitude and high speed in busy airspace is in an obviously hazardous environment, and given that many of the onboard systems are safety devices intended to reduce the risks of that environment to tolerable levels, then anything that degrades the effectiveness of those systems will increase the exposure of the aircraft to the hazards. Consequently, the aircraft operator needs to take measures that will reduce the risks to acceptable limits.		
PEDs fall into two main categories; non-intentional transmitters and intentional transmitters. The first category includes, but is not limited to, computing equipment, cameras, radio receivers, audio and video reproducers, electronic games and toys, together with portable, non-transmitting devices intended to assist crew members in their duties. Intentional transmitters are transmitting devices such as remote control equipment (which may include some toys), two-way radios, cell phones and satellite phones. In periods between transmissions, an intentional transmitter may radiate interference as a non-intentional transmitter.		
2. Non-intentional transmitting PEDs:		
PEDs that are non-intentional transmitters will radiate emissions from internal oscillators and processor clocks, some types of motor, and power supply converters. The radio frequencies involved may fall in the bands used for aeronautical radio services, and emission levels may be sufficient to affect aircraft radio receivers through their antennas. Use of a PED on the flight deck presents a particular risk to those navigation systems having antenna systems located in the radome.		

A: Rule	B: Summary of comments	C: Reason for change, remarks
3. Intentional transmitting PEDs:		
PEDs that are intentional transmitters may induce interference directly into aircraft equipment, wiring or components with sufficient power to adversely affect the proper functioning of aircraft systems. Many aircraft have non-metallic floors and internal doors that present no barrier to prevent the transmission from penetrating to the avionics equipment bays and to the flight deck. Tests have shown that demonstrated susceptibility levels of aircraft equipment, particularly equipment qualified to earlier standards can easily be exceeded.		
a. Cell phones:		
The rapid growth in cell phone usage has presented the most significant risk to aircraft safety from PED interference. Cell phones are both non-intentional and intentional transmitting PEDs, operating on spot channel frequencies in the bands of approximately 415 MHz, 900 MHz or 1800 MHz. (Some regions of the world use slightly different bands). Most use digital modulation but analogue types are still in use. Their maximum transmitted power is in the range of typically one to five watts. The actual power transmitted at a particular time is controlled by the cellular network and may vary from 20 mW to maximum rated power of the cell phone depending on quality of the link between the cell phone and the network. Even in standby mode, a cell phone transmits periodically to register and re-register with the cellular network and to	1 INDIV: Request to adjust the text concerning mobile phones and their isotropic power level range and the characteristic modulation, replace “susceptibility” by “radio-frequency-immunity qualification” and adjust the text for WLAN;	To be considered as part of a future rulemaking task;

A: Rule	B: Summary of comments	C: Reason for change, remarks
maintain contact with a base station.		
The transmitted power and precise radio frequency of an operating cell phone is dependent on the traffic on the network, the distance of the cell phone from the nearest base station, and any obstacles or attenuation in the signal path. An aircraft on the ground at an airport is likely to be in close proximity to a base station resulting in a strong link between that station and an onboard cell phone. Under these circumstances, the cell phone would seek a free channel in the assigned communication band and its output power would be set by the network to a low level sufficient to maintain the link. Interference levels would, as a result, be low and probably harmless but this cannot be guaranteed. Closing of the aircraft doors increases attenuation in the signal path, and as the aircraft increases its distance from the base station, the output power setting of the cell phone is increased, eventually to its maximum rating. The risk of interference is then at its greatest. At altitude, the cell phone will transmit periodically attempting to register with the cellular network. The quality of the link is likely to be poor and the cell phone will radiate maximum power in these circumstances. Furthermore, since it is likely to be in line-of-sight range of multiple base stations, some degradation of the network operation may result and actual communication may not be possible.		

A: Rule	B: Summary of comments	C: Reason for change, remarks
The effect of this type of functioning is that, when the aircraft is on the ground near a base station, the interference risk can be low but not negligible, and it will increase as the aircraft taxies and then climbs away from the network base stations.		
The simultaneous use in an aircraft of several cell phones will result in transmissions at different radio frequencies leading to a more complex interference environment.		
b. Private Mobile Radios (PMRs):	1 INDIV: it would be more helpful to explain what to do and what to consider for the operational approval of a PMR standard ;	This proposal is outside the scope of the OPS-NPA;
Private mobile radios conforming to the PMR 446 standard are now available to the general public for use as two-way radios without the need of a licence. These radios operate in the 446 MHz band and with sufficient power when transmitting to present an unacceptable interference risk in aircraft. Similarly, other types of two-way radios including those operating in the citizens' band present an unacceptable interference risk.		
c. Wireless Area Networks:	1 INDIV: it would be more helpful to explain what to do and what to consider for the operational approval of a wireless standard	This proposal is outside the scope of the OPS-NPA; a reference is made in GM OPS.GEN.125 ((3)(c) though;

A: Rule	B: Summary of comments	C: Reason for change, remarks
Wireless Local Area Network (WLAN) is an evolving technology offering wireless data communications, replacing Ethernet cables, for computing information exchange with a range of about 100 metres.		
Standards are being developed for WLAN such as the IEEE 802.11 and some future PEDs are likely to have this capability. WLAN uses radio transmissions of low power in the 2.4 GHz band with consideration being given to use of the 5 GHz band. WLAN transmissions do not need to be licensed.		
Similarly, Wireless Personal Area Network (WPAN) is an emerging technology offering wireless data and audio communications, with a range of about 10 metres. "Bluetooth" is the name given to one example of a WPAN technology. WPAN also uses unlicensed, very low power radio transmissions in the 2.4 GHz band. Bluetooth will be incorporated into many classes of PED and passengers are likely to bring them on board aircraft expecting to use such devices during the flight. Studies have been completed which show that the interference risk in aircraft from PEDs with a Bluetooth transmitter is sufficiently low to permit their use during non-critical phases of flight i.e. Bluetooth devices need be subject only to the general restrictions applied to non-intentional transmitters.		
4. In-seat Power Supplies:		

A: Rule	B: Summary of comments	C: Reason for change, remarks
Many aircraft now offer an electrical supply at each passenger seat primarily for the purpose of operating laptop computers. These computers have safety devices to protect against over-charging of their re-chargeable batteries. Other types of PED might not have such protection and might be fitted (possibly incorrectly) with standard, non-chargeable batteries. Overcharging of batteries, or attempts to charge standard batteries, could cause them to fail in a dangerous manner with fire, smoke and fumes risks. It is the responsibility of the aircraft operator to ensure that PEDs connected to the in-seat supply do not present any additional hazard to persons on board the aircraft or to the aircraft itself. Safeguards include issuing passengers with information cards giving safety instructions for using the in-seat supplies and the restrictions for charging or handling batteries. The availability of a means to terminate and isolate such electrical supplies together with appropriate cabin crew procedures will be required as a condition of approval and use of in-seat power supplies.		
5. Interference levels and effects:		
a. Aircraft Equipment Qualification:		
To qualify for approval, equipment to be installed in aircraft has to demonstrate that it is not susceptible to prescribed levels of radiated interference irrespective of the source, and that it will not radiate unacceptable interference. The levels were originally set to ensure		

A: Rule	B: Summary of comments	C: Reason for change, remarks
equipment could co-exist in the aircraft without mutual interference. For example, for an equipment susceptibility test prior to 1985, the maximum field strength of radiated interference was set at only 0.1 volts per metre. The risk of an uncontrolled interference source within the aircraft was not addressed by earlier standards. Recognising the inadequacy of the earlier standards, the tests have become progressively more severe primarily to protect against external threats such as broadcast transmitters, radars, and satellite uplinks. For critical equipment, the susceptibility tests now involve field strengths of 200 volts per metre or more. However, even the latest standards permit a low level of immunity for some equipment. Many aircraft, including newly manufactured aircraft, still have systems and equipment qualified to earlier standards.		
b. Interference Levels:	1 INDIV: Replace "interference" by "transferred field strength levels";	This will be considered as part of future rulemaking task.
Studies have confirmed that the levels and radio frequencies of radiated interference from non-intentional transmitters are such that aircraft radio receivers can be affected. Over the years, many reports have been received by the authorities concerning such interference.		
For an intentional transmitter such as a cell phone, an obvious risk is recognised even though the cell phone is not transmitting in the aeronautical frequency band. Applying fundamental principles, the maximum field strength E in volts per metre of the transmission at a		

A: Rule	B: Summary of comments	C: Reason for change, remarks
distance D from a cell phone transmitting P Watts of radio frequency power in a free, unobstructed space, can be estimated using the equation;		
E = 7 √P divided by the distance D		
(The strengths of electric and magnetic fields that exist in close proximity to the transmitting antenna (i.e. distances less than one wavelength and known as the near field) are not considered in this simple explanation.)		
Thus, for a two watt cell phone, the maximum field strength in free space at one metre distance is approximately 10 volts per metre, and at 100 metres distance, approximately 0.1 volts per metre.		
However, in the confines of a metallic aircraft fuselage, complex propagation paths arise due to reflections from the metallic structure which can lead to signal cancellation or re-enforcement at different locations in the aircraft. Although the free space equation does not give reliable results under these conditions, tests have shown that the field strength of the interfering cell phone transmission, at maximum power, will exceed by a significant margin the levels used in susceptibility tests for avionic equipment qualified to earlier standards. Similarly, these tests have shown that interference levels would vary by relatively small changes of location of a cell phone and that persons obstructing the transmission path reduce the interference.		

A: Rule	B: Summary of comments	C: Reason for change, remarks
c. Effects:		
Reports of interference are increasing but it has been difficult to positively confirm in all cases that a PED has been the actual cause of a problem. This is due to the difficulty in replicating the conditions that existed at the time of the occurrence due to the multiple factors involved (e.g. geographical location of the aircraft, system operating modes, interference frequency and intensity, source location in the aircraft, and path attenuation). Cell phones have been positively identified as the cause of degraded communications and of false baggage compartment smoke warnings. Cell phones have been strongly implicated in other spurious cockpit/pilot compartment warnings, corrupted instrument displays, and pressurisation system malfunctions.		
Although the total number of reports is relatively low considering the aircraft flight hours involved, the potential severity of the effects of interference means that the problem cannot be ignored.		
As a general conclusion, interference can result in: i. malfunctioning of multiple systems; ii. false warnings of unsafe conditions; iii. increased work load for the flight crew and the possibility of invoking emergency drills; iv. reduced crew confidence in protection systems which may then be ignored during a genuine warning;		

A: Rule	B: Summary of comments	C: Reason for change, remarks
v. distraction of the flight crew from their normal duties; vi. noise in the flight crew headphones; and/or vii. hidden failures of safety systems with loss of protection.		
6. Recommendations: a. Aircraft operators should consider installing detectors in their aircraft, which together with suitable procedures can assist the cabin crew to detect unauthorised transmissions from commonly used types of cell phone. b. Aircraft operators should seek the assistance of airport operators for the display of safety notices at aircraft boarding points reminding passengers to switch off cell phones and other transmitting devices.	1 INDIV: Request to delete (6)(a);	Not accepted. There is no justification to delete this guideline; it is GM only
AMC OPS.GEN.135.A Taxiing of aeroplanes		
QUALIFIED PERSONNEL		
A qualified person is either a flight crew member or a person designated by the operator that is:	1 IA: Request to add a condition, under which taxiing in low visibility conditions will be permitted;	The operator is responsible for controlling who can taxi and under what conditions. 4. covers low visibility.
1. competent to taxi;		

A: Rule	B: Summary of comments	C: Reason for change, remarks
2. qualified to use the radio telephone if radio communications are required;	1 IS: Assumption that qualification includes R/T licence;	Not accepted. Qualification by operator unless a licence is required by other regulation.
3. has received instruction from a competent person on operational procedures, aerodrome layout, and where appropriate, information on routes, signs, marking, lights, ATC signals and instructions, phraseology and procedures; and		
4. able to conform to the operational standards required for safe aircraft movement at the aerodrome.		
GM OPS.GEN.140.H Rotor engagement		
QUALIFIED PERSONNEL The intent of this paragraph is to ensure that the pilot remains at the controls when the rotors are turning under power whilst not preventing ground runs being conducted by qualified personnel other than flight crew. The operator should ensure that the qualification of personnel, other than flight crew, which are authorised to conduct ground runs, is described in the appropriate manual.		
AMC1 OPS.GEN.145 Use of aerodromes/operating sites		
USE OF OPERATING SITES	1 IS: Request to clarify that this does not apply to commercial aeroplane operations;	Not accepted. It is quite possible to conduct aeroplane CAT from a site with no AIP information. AMC2 makes more specific

A: Rule	B: Summary of comments	C: Reason for change, remarks
		requirements for CAT.
1. The pilot-in-command should have available from a pre-survey or other publication, for each operating site to be used, diagrams or ground and aerial photographs, depiction (pictorial) and description of: a. the overall dimensions of the operating site; b. location and height of relevant obstacles to approach and take-off profiles, and in the manoeuvring area; c. approach and take-off flight paths; d. surface condition (blowing dust/snow/sand); e. provision of control of third parties on the ground (if applicable); f. lighting (if applicable); g. procedure for activating operating site in accordance with national regulations (if applicable); h. other useful information, for example appropriate Air Traffic Services (ATS) agency and frequency; and i. site suitability with reference to available aircraft performance.	1 INDIV: Statement requested that it is impossible to predict the take-off flight path; 1 IA: Clarify that it is the operator's duty to provide the PiC with suitable documentation;	Not accepted. Text not changed because the flight paths referred to are the desired flight paths in normal flight conditions, not emergencies, together with specific recommended or performance-limited flight paths for emergencies if appropriate. Text changed for clarification;
2. For sites which are not pre-surveyed, the pilot-in-command should make, from the air and, in the case of balloons, also prior to take-off from the ground, a judgement on the suitability of a site. At least AMC OPS.GEN.145 1.a. to 1.e.		

A: Rule	B: Summary of comments	C: Reason for change, remarks
inclusive and 1.i. should be considered.		
AMC2 OPS.GEN.145 Use of aerodromes/operating sites		
USE OF OPERATING SITES – COMMERCIAL AIR TRANSPORT	5 IS: Request to clarify that this does not apply to aeroplanes.	Text not changed as small CAT aeroplane operations may use "sites". Survey may be done by means of AIP or other document if appropriate, but periodic checking required.
1. When defining adequate operating sites for use for the type(s) of aircraft and operation(s) concerned, an operator should take account of the following:	1 IS: comment on circular logic	CAT.OP.145 is about authorisation of sites. Text changed to relate to authorisation criteria/considerations
a. An adequate site is a site which the operator considers to be satisfactory, taking account of the applicable performance requirements and site characteristics;		
b. The operator should have in place a procedure for the survey of sites by a competent person. Such a procedure should take account for possible changes to the site characteristics which may have taken place since last surveyed;		
c. Sites which are pre-surveyed should be specifically indicated in the operator's operations manual. The operations manual should contain diagrams or/and ground		

A: Rule	B: Summary of comments	C: Reason for change, remarks
and aerial photographs, and depiction (pictorial) and description of: i. the overall dimensions of the site; ii. location and height of relevant obstacles to approach and take-off profiles, and in the manoeuvring area; iii. approach and take-off flight paths; iv. surface condition (blowing dust/snow/sand); v. adequacy with reference to aircraft performance; vi. provision of control of third parties on the ground (if applicable); vii. procedure for activating site with land owner or controlling authority; viii. other useful information, for example appropriate Air Traffic Services (ATS) agency and frequency; and ix. lighting (if applicable).		
2. For sites which are not pre-surveyed, the operator should have in place a procedure which enables the pilot to make, from the air or, in the case of balloons, also prior to take-off, from the ground, a judgement on the suitability of a site. As a minimum, the items listed in 1.c.i. to vi. inclusive, should be considered.		
3. Operations to non pre-surveyed sites by night should not be conducted, unless the operator is approved to do so in accordance with Part OPS.SPA.001.HEMS.		

A: Rule	B: Summary of comments	C: Reason for change, remarks
AMC3 OPS.GEN.145.H Use of aerodromes/operating sites		
HELICOPTERS – USE OF HELIDECKS – COMMERCIAL AIR TRANSPORT		
1. The content of the operations manual relating to the use of aerodromes should contain the listing of helideck limitations in a Helideck Limitations List (HLL) and a pictorial representation (template) of each helideck showing all necessary information of a permanent nature. The HLL will show, and be amended as necessary to indicate, the most recent status of each helideck concerning non-compliance with International Civil Aviation Organization (ICAO) Annex 14 Volume 2 , limitations, warnings, cautions or other comments of operational importance. An example of a typical template is shown in figure 1.		
2. In order to ensure that the safety of flights is not compromised, the operator should obtain relevant information and details for compilation of the HLL, and the pictorial representation, from the owner/operator of the helideck.		
3. When listing helidecks, if more than one name of the helideck exists, the most common name should be used; other names should also be included. After renaming a helideck, the old name should be included in the HLL for the ensuing six months.		
4. All helideck limitations should be included in the HLL. Helidecks without limitations should also be listed. With complex installations and combinations of installations (e.g. co-		

A: Rule	B: Summary of comments	C: Reason for change, remarks
locations), a separate listing in the HLL, accompanied by diagrams where necessary, may be required.		
5. Each helideck should be assessed (based on limitations, warnings, cautions or comments) to determine its acceptability with respect to the following which, as a minimum, should cover the factors listed below:		
a. The physical characteristics of the helideck;		
b. The preservation of obstacle protected surfaces is the most basic safeguard for all flights. These surfaces are: i. the minimum 210° Obstacle Free Surface (OFS); ii. the 150° Limited Obstacle Surface (LOS); and iii. the minimum 180° falling "5:1" - gradient with respect to significant obstacles. If this is infringed or if an adjacent installation or vessel infringes the obstacle clearance surfaces or criteria related to a helideck, an assessment should be made to determine any possible negative effect which may lead to operating restrictions;		
c. Marking and lighting: i. Adequate perimeter lighting; ii. Adequate floodlighting; iii. Status lights (note: for night and day operations e.g. Aldis Lamp);		

A: Rule	B: Summary of comments	C: Reason for change, remarks
iv. Dominant obstacle paint schemes and lighting; v. Helideck markings; vi. General installation lighting levels. Any limited authorisation in this respect should be annotated "daylight only operations" on the HLL;		
d. Deck surface: i. Surface friction; ii. Helideck net; iii. Drainage system; iv. Deck edge netting; v. Tie down system; vi. Cleaning of all contaminants;		
e. Environment: i. Foreign Object Damage; ii. Physical turbulence generators; iii. Bird control, iv. Air quality degradation due to exhaust emissions, hot gas vents or cold gas vents; v. Adjacent helidecks may need to be included in air quality assessment;		
f. Rescue and fire fighting: i. Primary and complementary media types, quantities,		

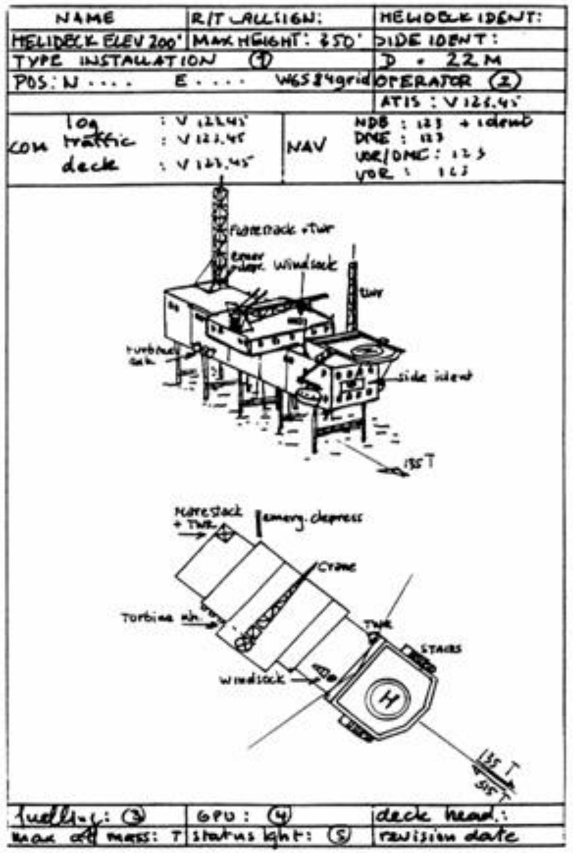
A: Rule	B: Summary of comments	C: Reason for change, remarks
capacity and systems personal protective equipment and clothing, breathing apparatus; ii. Crash box;		
g. Communications & navigation: i. Aeronautical Radio(s); ii. R/T call sign to match helideck name and side identification which should be simple and unique; iii. NDB or equivalent (as appropriate); iv. Radio log; v. Light signal (e.g. Aldis Lamp);		
h. Fuelling facilities;		
i. Additional operational and handling equipment: i. Windsock; ii. Wind recording; iii. Deck motion recording and reporting where applicable; iv. Passenger briefing system; v. Chocks; vi. Tie downs; vii. Weighing scales.		

A: Rule	B: Summary of comments	C: Reason for change, remarks
j. Personnel: Trained helideck staff (e.g. Helicopter Landing Officer/Helicopter Deck Assistant and fire fighters etc.).		
6. For helidecks about which there is incomplete information, 'limited' use information may be issued by the operator prior to the first helicopter visit. During subsequent operations and before fully used, information should be gathered and the following procedures should apply:		
a. Pictorial (static) representation: i. Templates (see Figure 1) should be available, to be filled out during flight preparation on the basis of the information given by the helideck owner/operator and flight crew observations; ii. Where possible, suitably annotated photographs may be used until the HLL and template has been completed; iii. Until the HLL and template has been completed, operational restrictions (e.g. performance, routing etc.) may be applied; iv. Any previous inspection reports should be obtained by the operator; v. An inspection of the helideck should be carried out to verify the content of the completed HLL and template, following which the helideck may be fully used for operations;		

A: Rule	B: Summary of comments	C: Reason for change, remarks
b. With reference to the above, the HLL should contain at least the following: i. HLL revision date and number; ii. Generic list of helideck motion limitations; iii. Name of helideck; iv. 'D'-value of the helideck; v. Limitations, warnings, cautions and comments;		
c. The template should contain at least the following (see example below):		
i. Installation/Vessel name;		
ii. R/T call sign;		
iii. Helideck Identification Marking;		
iv. Side Panel Identification Marking;		
v. Helideck elevation;		
vi. Maximum installation/vessel height;		
vii. 'D' Value;		
viii. Type of installation/vessel; A. Fixed manned		

A: Rule	B: Summary of comments	C: Reason for change, remarks
B. Fixed unmanned C. Ship type (e.g. diving support vessel) D. Semi-submersible E. Jack-up		
ix. Name of owner/operator;		
x. Geographical position;		
xi. Com/Nav Frequencies and Ident;		
xii. General drawing preferably looking into the helideck with annotations showing location of derrick, masts, cranes, flare stack, turbine and gas exhausts, side identification panels, windsock etc.;		
xiii. Plan view drawing, chart orientation from the general drawing, to show the above. The plan view will also show the 210 degree bisector orientation in degrees true;		
xiv. Type of fuelling: A. Pressure and Gravity B. Pressure only C. Gravity only D. None		
xv. Type and nature of fire fighting equipment;		

A: Rule	B: Summary of comments	C: Reason for change, remarks
xvi. Availability of GPU;		
xvii. Deck heading;		
xviii. Maximum allowable mass;		
xix. Status light (Yes/No);		
xx. Revision date of publication.		
Figure 1 – Helideck Template		

A: Rule	B: Summary of comments	C: Reason for change, remarks
		

1. Fixed manned; fixed unmanned; small ship; large ship; semi-submersible; jack-up.
2. NAM, AMOCO etc.
3. Pressure/gravity; pressure; gravity; no.
4. Yes; no; 28V DC.
5. Yes; no.

A: Rule	B: Summary of comments	C: Reason for change, remarks
AMC4 OPS.GEN.145 Use of aerodromes/operating sites		
USE OF OPERATING SITES – COMMERCIAL OPERATIONS OTHER THAN COMMERCIAL AIR TRANSPORT When using operating sites, the operator should take account of AMC2 OPS.GEN.145.		
GM1 OPS.GEN.145 Use of aerodromes/operating sites		
ADEQUATE AERODROME At the expected time of use, the adequate aerodrome should be available and equipped with necessary ancillary services such as ATS, sufficient lighting, communications, weather reporting, navaids and emergency services.	1 IS: Request to re-align the definition with EU-OPS and upgrade definition of "adequate" to hard law; 1 INDIV: Statement that this does not consider operations from uncontrolled fields; 1 INDIV: GM cannot contain essential safety requirements;	Alignment with EU/JAR-OPS. Agree adequate definition out of place in GM. Suggested text avoids adequate". Such a statement adds no value The listed items are examples; "such as". Also covered in AMCs 1&2 Accepted. Moved to IR.
GM2 OPS.GEN.145 Use of aerodromes/operating sites		
PUBLICATIONS 'Other publication' mentioned in AMC OPS.GEN 145 refers to publication means, such as: 1. (Military) Aeronautical Information Publication;	1 IS, 1 MS: Request to delete the list of "commercially available aeronautical publications" and to add "Civil AIP";	Not accepted. This is GM and may inform potential operators of options. "e.g." means that the list is not exhaustive.

A: Rule	B: Summary of comments	C: Reason for change, remarks
2. Visual Flight Rules (VFR) Guides; 3. commercially available aeronautical publications (e.g. Jeppesen, AERAD, Fugawi); and 4. non-commercially available publications.		
GM3 OPS.GEN.145 Use of aerodromes/operating sites		
GUIDANCE DOCUMENTS – COMMERCIAL AIR TRANSPORT		
Guidance on standards and criteria for the design of aerodromes are contained in: 1. ICAO Annex 14 Aerodromes ; and 2. ICAO Heliport Manual (Doc 9261-AN/903).		
AMC OPS.GEN.147(c)(1) Visual Flight Rules (VFR) Operating minima		Deleted because the rule has been transferred to SERA.
ADVISORY SPEEDS IN REDUCED VISIBILITY When flight with a visibility of less than 5 km is permitted, the forward visibility should not be less than the distance travelled by the helicopter in 30 seconds so as to allow adequate opportunity to see and avoid obstacles (see table below).		
<table><tr><td>Visibility (m)</td><td>Advisory speed (kts)</td></tr><tr><td>800</td><td>50</td></tr></table>		

A: Rule		B: Summary of comments	C: Reason for change, remarks
1 500	100		
2 000	120		
AMC1 OPS.GEN.150 Instrument Flight Rules (IFR) operating minima			
SPECIFYING AERODROME MINIMA An acceptable method of specifying aerodrome operating minima may be through the use of commercially available information.		1/ As a considerable number of operators use Aerad and Jeppesen publications for AOM it is requested that this paragraph be more explicit in stating that the use of such publications is acceptable means of compliance.	1/ This is an acceptable means in the sense of this AMC. The Agency can for obvious reasons not name certain suppliers of such information.
AMC2 OPS.GEN.150 Instrument Flight Rules (IFR) operating minima			
AERODROME MINIMA - GENERAL			
1. The aerodrome operating minima should not be lower than the values given in AMC3 OPS.GEN.150 3. and AMC4 OPS.GEN.150.			
2. All approaches should be flown as Stabilised Approaches (SAp). Different procedures may be used for a particular approach to a particular runway.			
3. All non-precision approaches should be flown using the Continuous Descent Final Approach (CDFA) technique. Different			

A: Rule	B: Summary of comments	C: Reason for change, remarks
procedures may be used for a particular approach to a particular runway. When calculating the minima in accordance with AMC4 OPS.GEN.150, the applicable minimum Runway Visual Range (RVR) should be increased by 200 metres (m) for Category A/B aeroplanes and by 400 m for Category C/D aeroplanes for approaches not flown using the CDFA technique, provided the resulting RVR/Converted Meteorological Visibility (CMV) value does not exceed 5000 m. SAp or CDFA should be used as soon as facilities are improved to allow these techniques.		
AMC3 OPS.GEN.150 Instrument Flight Rules (IFR) operating minima		
AERODROME MINIMA – TAKE-OFF MINIMA		
1. General:		
a. Take-off minima should be expressed as visibility or RVR limits, taking into account all relevant factors for each aerodrome planned to be used and aircraft characteristics. Depending on the obstacle situation on departure and/or forced landing, additional conditions (e.g. ceiling) should be specified;		
b. The pilot-in-command should not commence take-off unless the weather conditions at the aerodrome of departure are equal to or better than applicable minima for landing at that aerodrome unless a suitable take-off		

A: Rule	B: Summary of comments	C: Reason for change, remarks
alternate aerodrome is available;		
c. When the reported meteorological visibility is below that required for take-off and RVR is not reported, a take-off should only be commenced if the pilot-in-command can determine that the visibility along the take-off runway/area is equal to or better than the required minimum;		
d. When no reported meteorological visibility or RVR is available, a take-off should only be commenced if the pilot-in-command can determine that the RVR/visibility along the take-off runway/area is equal to or better than the required minimum.		
2. Visual reference: a. The take-off minima should be selected to ensure sufficient guidance to control the aircraft in the event of both a discontinued take-off in adverse circumstances and a continued take-off after failure of the critical power unit; b. For night operations, ground lighting should be available to illuminate the runway/Final Approach and Take-Off Area (FATO) and any obstacles.		
3. Required RVR/visibility:		
a. Aeroplanes:		

<table>
<tr><th>A: Rule</th><th>B: Summary of comments</th><th>C: Reason for change, remarks</th></tr>
<tr><td>i. For multi-engined aeroplanes whose performance is such that, in the event of a critical power unit failure at any point during take-off, the aeroplane can either stop or continue the take-off to a height of 1 500 ft above the aerodrome while clearing obstacles by the required margins, the take-off minima specified by an operator should be expressed as RVR/visibility values not lower than those given in Table 1a, except as provided in 3.a.iv.</td><td></td><td></td></tr>
<tr><td>Table 1a of AMC3 OPS.GEN.150 RVR/visibility for take-off</td><td></td><td></td></tr>
<tr><td>
<table>
<tr><td colspan="5">TAKE-OFF RVR/VISIBILITY</td></tr>
<tr><td rowspan="3">Facilities</td><td colspan="4">RVR/Visibility (Note 2)</td></tr>
<tr><td colspan="2">Category A, B and C aeroplanes</td><td colspan="2">Category D aeroplanes</td></tr>
<tr><td>Without LVTO approval in accordance with OPS.SPA.001.LVO</td><td>With LVTO approval in accordance with OPS.SPA.001.LVO</td><td>Without LVTO approval in accordance with OPS.SPA.001.LVO</td><td>With LVTO approval in accordance with OPS.SPA.001.LVO</td></tr>
<tr><td>Nil (Day only)</td><td>500 m</td><td>500 m</td><td>500 m</td><td>500 m</td></tr>
</table>
</td><td></td><td></td></tr>
</table>

A: Rule					B: Summary of comments	C: Reason for change, remarks
Runway edge lighting and/or centreline lighting	400 m (Note 1)	250 m (Note 1)	400 m (Note 1)	300 m (Note 1)		
Runway edge and centreline lighting	400 m	200 m	400 m	250 m		
Runway edge and centreline lighting and multiple RVR information	400 m	150 m (Note 3)	400 m	200 m (Note 3)		
Note 1: For night operations at least runway edge and runway end lights are required.						
Note 2: The reported RVR/visibility value representative of the initial part of the take-off run can be replaced by pilot assessment.						
Note 3: The required RVR value should be achieved for all of the relevant RVR reporting points with the exception given in						

A: Rule	B: Summary of comments	C: Reason for change, remarks
Note 2 of Table 1a.		
ii. For multi-engined aeroplanes whose performance is such that they cannot comply with the performance conditions in 3.a.i., in the event of a critical power unit failure, there may be a need to re-land immediately and to see and avoid obstacles in the take-off area. Such aeroplanes may be operated to the following take-off minima provided they are able to comply with the applicable obstacle clearance criteria, assuming engine failure at the height specified. The take-off minima specified by an operator must be based upon the height from which the One-Engine-Inoperative (OEI) net take-off flight path can be constructed. The RVR minima used may not be lower than either of the values given in Table 1a or 2a, unless an approval in accordance with OPS.SPA.001.LVO is obtained;		
Table 2a of AMC3 OPS.GEN.150 Assumed engine failure height above the runway versus RVR/visibility		

TAKE-OFF RVR/VISIBILITY		
Assumed engine failure height above the take-off runway	RVR/Visibility (Note 2)	
	Without LVTO approval in accordance with	With LVTO approval in accordance with OPS.SPA.001.LVO

A: Rule	**B: Summary of comments**	**C: Reason for change, remarks**
<table><tr><td></td><td>OPS.SPA.001.LVO</td><td></td></tr><tr><td>< 50 ft</td><td>400 m</td><td>200 m</td></tr><tr><td>51 – 100 ft</td><td>400 m</td><td>300 m</td></tr><tr><td>101 – 150 ft</td><td>400 m</td><td>400 m</td></tr><tr><td>151 – 200 ft</td><td>500 m</td><td>500 m</td></tr><tr><td>201 – 300 ft</td><td>1 000 m</td><td>1 000 m</td></tr><tr><td>> 300 ft</td><td>1 500 m (Note 1)</td><td>1 500 m (Note 1)</td></tr></table> Note 1: 1 500 m is also applicable if no positive take-off flight path can be constructed.		
Note 2: The reported RVR/visibility value representative of the initial part of the take-off run can be replaced by pilot assessment.		
iii. When reported RVR or meteorological visibility is not available, the pilot-in-command should not commence take-off unless he/she can determine that the actual conditions meet the applicable take-off minima.		
iv. Operators approved in accordance with OPS.SPA.001.LVO may reduce the take-off minima to:		

A: Rule	B: Summary of comments	C: Reason for change, remarks
A. 125 m RVR (Category A, B and C aeroplanes) or 150 m RVR (Category D aeroplanes) provided the following criteria are met:		
1. Low visibility procedures are in force;		
2. High intensity runway centreline lights, spaced 15 m or less, and high intensity edge lights, spaced 60 m or less, are in operation;		
3. Flight crew members have satisfactorily completed training in a flight simulator;		
4. A 90 m visual segment is available from the cockpit at the start of the take-off run;		
5. The required RVR value has been achieved for all of the relevant RVR reporting points.		
B. less than 125 m (Category A, B and C aeroplanes) or 150 m (Category D aeroplanes) but not lower than 75 m, provided runway protection and facilities equivalent to Category III landing operations are available, when using either:		
1. an approved lateral guidance system; or		

A: Rule	B: Summary of comments	C: Reason for change, remarks
2. an approved Head Up Display/Head Up Landing System (HUD/HUDLS) for take-off.		
b. Helicopters:		
i. For Performance Class 1 operations, an operator should specify an RVR and Visibility (RVR/VIS) as take-off minima in accordance with Table 1h;		
Table 1h of AMC3 OPS.GEN.150 RVR/visibility for take-off		

TAKE-OFF RVR/VISIBILITY		
Onshore aerodromes with Instrument Flight Rules (IFR) departure procedures	RVR/Visibility	
	Without LVTO approval in accordance with OPS.SPA.001. LVO	With LVTO approval in accordance with OPS.SPA.001.LVO
No lighting and no markings (day only)	400 m or the rejected take-off distance, whichever is the greater	250 m or the rejected take-off distance, whichever is the greater
No markings (night)	800 m	800 m

A: Rule	**B: Summary of comments**	**C: Reason for change, remarks**
<table><tr><td>Runway edge/FATO lighting and centreline marking</td><td>400 m</td><td>200 m</td></tr><tr><td>Runway edge/FATO lighting, centreline marking and RVR information</td><td>400 m</td><td>150 m</td></tr><tr><td>Offshore helideck</td><td></td><td></td></tr><tr><td>Two-pilot operations</td><td>400 m (Note 1)</td><td>250 m (Note 1)</td></tr><tr><td>Single-pilot operations</td><td>500 m (Note 1)</td><td>500 m (Note 1)</td></tr></table> Note 1: The take-off flight path must be free of obstacles.		
ii. For Performance Class 2 operations onshore, the pilot-in-command should operate to take-off minima of 800 m RVR/VIS and remain clear of cloud during the take-off manoeuvre until reaching Performance Class 1 capabilities;		
iii. For Performance Class 2 operations offshore, the pilot-in-command should operate to minima not less that that for Performance Class 1 and remain clear of cloud during the take-off manoeuvre until reaching Performance Class 1 capabilities. (Refer to Note 1 of Table 1h of AMC 3 OPS.GEN.150);		

A: Rule	B: Summary of comments	C: Reason for change, remarks
iv. Table 1 of AMC11 OPS.GEN.150, for converting reported meteorological visibility to RVR, should not be used for calculating take-off minima.		
AMC4 OPS.GEN.150 Instrument Flight Rules (IFR) operating minima		
AERODROME MINIMA – NON-PRECISION, CATEGORY I AND APPROACHES WITH VERTICAL GUIDANCE		
1. A Non-Precision Approach (NPA) operation is an instrument approach using any of the facilities described in Table 1 of AMC4 OPS.GEN.150, with a Minimum Descent Height (MDH) or Decision Height (DH) not lower than 250 ft and an RVR/CMV of not less than 750 m for aeroplanes and 600 m for helicopters.		
2. A Category I approach operation is a precision instrument approach and landing using Instrument Landing System (ILS), Microwave Landing System (MLS), GPS Landing System (GLS) (Global Navigation Satellite System (GNSS)/Ground-Based Augmentation System (GBAS)) or Precision Approach Radar (PAR) with a DH not lower than 200 ft and an RVR of not less than 550 m for aeroplanes and 500 m for helicopters.		
3. An approach Procedure with Vertical Guidance (APV) is an instrument approach which utilises lateral and vertical guidance, but does not meet the requirements established for precision approach and landing operations, with a DH not lower than 250 ft and an RVR of not less than 600 m.		

A: Rule	B: Summary of comments	C: Reason for change, remarks
4. The DH to be used for an approach should be the highest of: a. the minimum height to which the approach aid can be used without the required visual reference; b. the Obstacle Clearance Height (OCH) for the category of aircraft; c. the published approach procedure DH, where applicable; d. 200 ft for Category I approach operations; e. the system minimum in Table 1 of AMC4 OPS.GEN.150; or f. the lowest decision height specified in the AFM or equivalent document, if stated.		
5. The MDH for an approach should be the highest of: a. The OCH for the category of aircraft; b. The system minimum in Table 1 of AMC4 OPS.GEN.150; or c. The minimum descent height specified in the AFM, if stated.		
Table 1 of AMC4 OPS.GEN.150 System minima vs facilities		
SYSTEM MINIMA Facility | Lowest DH/MDH Aeroplanes | Helicopters		

SYSTEM MINIMA		
Facility	Lowest DH/MDH	
	Aeroplanes	Helicopters

A: Rule	B: Summary of comments	C: Reason for change, remarks
<table><tr><td>Localizer with or without DME</td><td>250 ft</td><td>250 ft</td></tr><tr><td>SRA (terminating at ½ nm)</td><td>250 ft</td><td>250 ft</td></tr><tr><td>SRA (terminating at 1 nm)</td><td>300 ft</td><td>300 ft</td></tr><tr><td>SRA (terminating at 2 nm or more)</td><td>350 ft</td><td>350 ft</td></tr><tr><td>RNAV/LNAV</td><td>300 ft</td><td>n/a</td></tr><tr><td>VOR</td><td>300 ft</td><td>300 ft</td></tr><tr><td>VOR/DME</td><td>250 ft</td><td>250 ft</td></tr><tr><td>NDB</td><td>350 ft</td><td>300 ft</td></tr><tr><td>NDB/DME</td><td>300 ft</td><td>n/a</td></tr><tr><td>VDF (QDM & QCH)</td><td>350 ft</td><td>300 ft</td></tr></table>		
AMC5 OPS.GEN.150 Instrument Flight Rules (IFR) operating minima AERODROME MINIMA – CRITERIA FOR ESTABLISHING RVR/CMV		
1. In order to qualify for the lowest allowable values of RVR/CMV detailed in Table 3 of AMC6 OPS.GEN.150.A (applicable to each		

A: Rule	B: Summary of comments	C: Reason for change, remarks
approach grouping), the instrument approach should meet at least the following facility requirements and associated conditions:		
a. Instrument approaches with designated vertical profile up to and including 4.5 degrees for Category A and B aeroplanes and 3.77 degrees for Category C and D aeroplanes, where the facilities are: i. ILS/MLS/GLS/PAR; or ii. APV; and iii where the final approach track is offset by not more than 15 degrees for Category A and B aeroplanes and by not more than 5 degrees for Category C and D aeroplanes;		
b. Instrument approaches flown using the CDFA technique with a nominal vertical profile, up to and including 4.5 degrees for Category A and B aeroplanes and 3.77 degrees for Category C and D aeroplanes, where the facilities are NDB, NDB/DME, VOR, VOR/DME, LLZ, LLZ/DME, VDF, SRA or RNAV/LNAV, with a final approach segment of at least 3 Nautical Miles (nm), which also fulfil the following criteria: i. The final approach track is offset by not more than 15 degrees for Category A and B aeroplanes and by not more than 5 degrees for Category C and D aeroplanes; ii. The Final Approach Fix (FAF), or another appropriate fix where descent is initiated is available, or distance		

A: Rule	B: Summary of comments	C: Reason for change, remarks
to THR is available by FMS/RNAV or DME; iii. If the Missed Approach Point (MAPt) is determined by timing, the distance from FAF to THR is < 8 nm.		
c. Instrument approaches where the facilities are NDB, NDB/DME, VOR, VOR/DME, LLZ, LLZ/DME, VDF, SRA or RNAV/LNAV, not fulfilling the criteria in 1.b. of AMC 5 OPS.GEN.150, or with an MDH ≥ 1 200 ft.		
2. The missed approach, after an approach has been flown using the CDFA technique, should be executed when reaching the Decision Altitude/Height (DA/H) or the MAPt, whichever occurs first. The lateral part of the missed approach procedure should be flown via the MAPt unless otherwise stated on the approach chart.		
AMC6 OPS.GEN.150.A Instrument Flight Rules (IFR) operating minima		
AERODROME MINIMA – DETERMINATION OF RVR/CMV/VISIBILITY MINIMA FOR CATEGORY I APPROACH PROCEDURES WITH VERTICAL GUIDANCE AND NON-PRECISION APPROACH OPERATIONS – AEROPLANES		
1. The minimum RVR/CMV/visibility should be the highest of the values derived from Table 2 of AMC6 OPS.GEN.150.A (RVR/CMV vs DH/MDH) and Table 3 of AMC6 OPS.GEN.150.A (Minimum and maximum applicable RVR/CMV for all instrument approaches down to Category I minima (lower and upper cut-off limits), but not greater than the maximum values shown in		

A: Rule	B: Summary of comments	C: Reason for change, remarks
Table 3 of AMC6 A OPS.GEN.150, where applicable.		
2. The values in Table 2 of AMC6 OPS.GEN.150.A (RVR/CMV vs DH/MDH) are derived from the following formula:		
Required RVR/visibility (m) = [(DH/MDH (ft) x 0.3048)/tanα] - length of approach lights (m)		
Note 1: α is the calculation angle, being a default value of 3.00 degrees increasing in steps of 0.10 degrees for each line in Table 2 of AMC6 OPS.GEN.150.A up to 3.77 degrees and then remains constant. Note 2: The values derived from the above formula have been rounded to the nearest 50 m up to a value of 800 m RVR and thereafter to the nearest 100 m. Note 3: The DH/MDH intervals in Table 2 of AMC6 OPS.GEN.150.A have been selected to avoid anomalies caused by the rounding of the calculated Obstacle Clearance Altitude (OCA)/H. The height intervals are 10 feet up to a DH/MDH of 300 feet, 20 feet up to a DH/MDH of 760 feet and then 50 feet for DH/MDH above 760 feet.		
3. The formula may be used with the actual approach slope and/or the actual length of the approach lights for a particular runway. This formula may also be used to calculate the applicable RVR for special (one-off) approach operations in accordance with AMC8 A OPS.GEN.150 4. The formula may also be used to calculate the applicable RVR value for approaches with		

A: Rule	B: Summary of comments	C: Reason for change, remarks
approach slopes greater than 4.5 degrees.		
4. If the approach is flown with a level flight segment at or above MDA/H, 200 m should be added for Category A and B aeroplanes and 400 m for Category C and D aeroplanes to the minimum RVR/CMV value resulting from the application of Table 2 of AMC6 OPS.GEN.150.A (RVR/CMV vs DH/MDH) and Table 3 of AMC6 OPS.GEN.150.A (Minimum and maximum applicable RVR/CMV for all instrument approaches down to Category I minima (lower and upper cut-off limits). The added value corresponds to the time/distance required to establish the aeroplane on the final descent.		
5. An RVR of less than 750 m as indicated in Table 2 of AMC6 OPS.GEN.150.A (RVR/CMV vs DH/MDH) may be used: a. for Category I approach operations to runways with Full Approach Light System (FALS), Runway Touchdown Zone Lights (RTZL) and Runway Centreline Lights (RCLL), provided that the DH is not more than 200 ft; b. for Category I approach operations to runways without RTZL and RCLL when using an approved HUDLS, or equivalent approved system, or when conducting a coupled approach or flight-director-flown approach to a DH equal to or greater than 200 ft. The ILS must not be promulgated as a restricted facility. The equivalent system could for instance be an approved HUD which is not certificated as a landing system, but is able to provide adequate guidance cues. Other devices may also be		

A: Rule	B: Summary of comments	C: Reason for change, remarks
suitable, such as Enhanced/Synthetic Vision Systems (E/SVS) or other hybrids of such devices; or c. for APV approach operations to runways with FALS, RTZL and RCLL when using an approved HUD.		
6. RVR values lower than those given in Table 2 of AMC6 OPS.GEN.150.A (RVR/CMV vs DH/MDH) may be used for HUDLS and auto-land operations in accordance with Part OPS.SPA.LVO.		
7. The visual aids comprise standard runway day markings and approach and runway lighting (runway edge lights, threshold lights, runway end lights and in some cases also touch-down zone and/or RCLL). The approach light configurations acceptable are classified and listed in Table 1 of AMC6 OPS.GEN.150.A (Approach light systems).		
8. Notwithstanding the requirements in AMC6 OPS.GEN.150.A 7. RVR values relevant to a Basic Approach Lighting System (BALS) may be used on runways where the approach lights are restricted in length below 210 m due to terrain or water, but where at least one cross-bar is available.		
9. For night operations or for any operation where credit for runway and approach lights is required, the lights must be on and serviceable except as provided for in Table 1 of AMC12 OPS.GEN.150.		
Table 1 of AMC6 OPS.GEN.150.A Approach light systems		

A: Rule		B: Summary of comments	C: Reason for change, remarks
CLASS OF FACILITY	LENGTH, CONFIGURATION AND INTENSITY OF APPROACH LIGHTS		
Full Approach Landing System (FALS)	ICAO: Precision Approach Category I Lighting System (HIALS ≥ 720 m) Distance Coded Centreline, Barrette Centreline FAA: ALSF1, ALSF2, SSALR, MALSR, high or medium intensity and/or flashing lights, 720 m or □ore		
Intermediate Approach Light System (IALS)	ICAO: Simple Approach Lighting System (HIALS 420 – 719 m) Single Source, Barrette FAA: MALSF, MALS, SALS/SALSF, SSALF, SSALS, high or medium intensity and/or flashing lights, 420 – 719 m		
Basic Approach Light System (BALS)	Any other Approach Lighting System (HIALS, MIALS or ALS 210-419 m) FAA: ODALS, high or medium intensity or flashing lights 210 - 419 m		

A: Rule					B: Summary of comments	C: Reason for change, remarks
No Approach Light System (NALS)	Any other Approach Lighting System (HIALS, MIALS or ALS <210 m) or No Approach Lights					
Table 2 of AMC6 OPS.GEN.150.A RVR/CMV vs DH/MDH						
DH or MDH	CLASS OF LIGHTING FACILITY					
	FALS	IALS	BALS	NALS		
ft	m					
200 – 210	550	750	1 000	1 200		
211 – 220	550	800	1 000	1 200		
221 – 230	550	800	1 000	1 200		
231 – 240	550	800	1 000	1 200		
241 – 250	550	800	1 000	1 300		
251 – 260	600	800	1 100	1 300		
261 – 280	600	900	1 100	1 300		
281 – 300	650	900	1 200	1 400		
301 – 320	700	1 000	1 200	1 400		
321 – 340	800	1 100	1 300	1 500		

A: Rule					B: Summary of comments	C: Reason for change, remarks
341 – 360	900	1 200	1 400	1 600		
361 – 380	1 000	1 300	1 500	1 700		
381 – 400	1 100	1 400	1 600	1 800		
401 – 420	1 200	1 500	1 700	1 900		
421 – 440	1 300	1 600	1 800	2 000		
441 – 460	1 400	1 700	1 800	2 100		
461 – 480	1 500	1 800	1 900	2 200		
481 – 500	1 500	1 800	2 000	2 300		
501 – 521	1 600	1 900	2 100	2 400		
521 – 540	1 700	2 000	2 200	2 400		
541 – 560	1 800	2 100	2 300	2 500		
561 – 580	1 900	2 200	2 400	2 600		
581 – 600	2 000	2 300	2 500	2 700		
601 – 620	2 100	2 400	2 600	2 800		

A: Rule					B: Summary of comments	C: Reason for change, remarks
621 – 640	2 200	2 500	2 700	2 900		
641 – 660	2 300	2 600	2 800	3 000		
661 – 680	2 400	2 700	2 900	3 100		
681– 700	2 500	2 800	3 000	3 200		
701 – 720	2 600	2 900	3 100	3 300		
721 – 740	2 700	3 000	3 200	3 400		
741 – 760	2 700	3 000	3 300	3 500		
761 – 800	2 900	3 200	3 400	3 600		
801 – 850	3 100	3 400	3 600	3 800		
851 – 900	3 300	3 600	3 800	4 000		
901 – 950	3 600	3 900	4 100	4 300		
951 – 1 000	3 800	4 100	4 300	4 500		
1 001 – 1 100	4 100	4 400	4 600	4 900		
1 101 – 1 200	4 600	4 900	5 000	5 000		

<table>
<tr><th>A: Rule</th><th>B: Summary of comments</th><th>C: Reason for change, remarks</th></tr>
<tr><td>
<table>
<tr><td>1 201 and above</td><td>5 000</td><td>5 000</td><td>5 000</td><td>5 000</td></tr>
</table>
</td><td></td><td></td></tr>
<tr><td>Table 3 of AMC6 OPS.GEN.150.A Minimum and maximum applicable RVR/CMV for all instrument approaches down to Category I minima (lower and upper cut-off limits):</td><td></td><td></td></tr>
<tr><td>
<table>
<tr><td rowspan="2">FACILITY/CONDITIONS</td><td rowspan="2">RVR /CMV (m)</td><td colspan="4">AEROPLANE CATEGORY</td></tr>
<tr><td>A</td><td>B</td><td>C</td><td>D</td></tr>
<tr><td rowspan="2">ILS, MLS, GLS, PAR and APV</td><td>Min</td><td colspan="4">According to Table 2 of AMC6A OPS.GEN.150</td></tr>
<tr><td>Max</td><td>1 500</td><td>1 500</td><td>2 400</td><td>2 400</td></tr>
<tr><td rowspan="2">NDB, NDB/DME, VOR, VOR/DME, LLZ, LLZ/DME, VDF, SRA, RNAV/LNAV with a procedure which fulfils the criteria in AMC5 OPS.GEN.150 1.b.</td><td>Min</td><td>750</td><td>750</td><td>750</td><td>750</td></tr>
<tr><td>Max</td><td>1 500</td><td>1 500</td><td>2 400</td><td>2 400</td></tr>
<tr><td rowspan="2">For NDB, NDB/DME, VOR, VOR/DME, LLZ, LLZ/DME, VDF, SRA, RNAV/LNAV:
- not fulfilling the</td><td>Min</td><td>1 000</td><td>1 000</td><td>1 200</td><td>1 200</td></tr>
<tr><td>Max</td><td colspan="4">According to Table 2 of AMC6 OPS.GEN.150.A if flown using the CDFA technique, otherwise an add-</td></tr>
</table>
</td><td></td><td></td></tr>
</table>

A: Rule	B: Summary of comments	C: Reason for change, remarks
criteria in AMC5 OPS.GEN.150 1.b., or - with a DH or MDH ≥ 1200 ft | | on of 200/400 m applies to the values in Table 2 of AMC6 OPS.GEN.150.A but not to result in a value exceeding 5000 m. 10. For single-pilot operations, the minimum RVR/visibility for all approaches should be calculated in accordance with OPS.GEN.150 and its AMC material:		
a. An RVR of less than 800 m as indicated in Table 2 of AMC6 OPS.GEN.150.A may be used for Category I approaches provided any of the following is used at least down to the applicable DH: i. A suitable autopilot, coupled to an ILS or MLS which is not promulgated as restricted; or ii. An approved HUDLS (including, where appropriate, EVS), or equivalent approved system;		
b. Where RTZL and/or RCLL are not available, the minimum RVR/CMV should not be less than 600 m;		
c. An RVR of less than 800 m as indicated in Table 2 of AMC6 OPS.GEN.150.A may be used for APV operations to runways with FALS, RTZL and RCLL when using an approved HUDLS, or equivalent approved system, or when conducting a coupled approach to a DH equal to or greater than 250 ft.		

A: Rule	B: Summary of comments	C: Reason for change, remarks
AMC7 OPS.GEN.150.H Instrument Flight Rules (IFR) operating minima		
AERODROME MINIMA – DETERMINATION OF RVR/CMV/VISIBILITY MINIMA FOR CATEGORY I, APPROACH PROCEDURES WITH VERTICAL GUIDANCE AND NON-PRECISION APPROACH OPERATIONS – HELICOPTERS		
1. For non-precision approaches by helicopters operated in Performance Class 1 or 2, the minima given in Table 1 of AMC7 OPS.GEN.150.H should apply:		
Table 1 of AMC7 OPS.GEN.150.H Onshore non-precision approach minima		

ONSHORE NON-PRECISION APPROACH MINIMA (Notes 5, 6 and 7)				
MDH (ft)	Facilities/RVR (m)			
	Full (Note 1)	Intermediate (Note 2)	Basic (Note 3)	Nil (Note 4)
250 – 299	600	800	1 000	1 000
300 – 449	800	1 000	1 000	1 000
450 and above	1 000	1 000	1 000	1 000

Note 1: Full facilities comprise FATO/runway markings, 720 m

A: Rule	B: Summary of comments	C: Reason for change, remarks
or more of HI/MI approach lights, FATO/runway edge lights, threshold lights and FATO/runway end lights. Lights must be on.		
Note 2: Intermediate facilities comprise FATO/runway markings, 420 - 719 m of HI/MI approach lights, FATO/runway edge lights, threshold lights and FATO/runway end lights. Lights must be on.		
Note 3: Basic facilities comprise FATO/runway markings, <420 m of HI/MI approach lights, any length of LI approach lights, FATO/runway edge lights, threshold lights and FATO/runway end lights. Lights must be on.		
Note 4: Nil approach light facilities comprise FATO/runway markings, FATO/runway edge lights, threshold lights, FATO/runway end lights or no lights at all.		
Note 5: The tables are only applicable to conventional approaches with a nominal descent slope of not greater than 4 degrees. Greater descent slopes will usually require that visual glide slope guidance (e.g. PAPI) is also visible at the MDH.		
Note 6: The above figures are either reported RVR or CMV.		
Note 7: The MDH mentioned in Table 1 of AMC7 OPS.GEN.150.H refers to the initial calculation of MDH. When selecting the associated RVR, there is no need to take account of a rounding up to the nearest ten feet, which may be done for		

A: Rule	B: Summary of comments	C: Reason for change, remarks
operational purposes, e.g. conversion to MDA.		
a. Where the missed approach point is within ½ nm of the landing threshold, the approach minima given for full facilities may be used regardless of the length of approach lighting available. However, FATO/runway edge lights, threshold lights, end lights and FATO/runway markings are still required;		
b. For night operations, ground lighting must be available to illuminate the FATO/runway and any obstacles;		
c. For single-pilot operations, the minimum RVR is 800 m or the minima in Table 1 of AMC7 OPS.GEN.150.H, whichever is higher.		
2. For Category I approaches by helicopters operated in Performance Class 1 or 2, the minima given in Table 2 of AMC7 OPS.GEN.150.H should apply:		
Table 2 of AMC7 OPS.GEN.150.H Onshore precision approach minima – Category I		

ONSHORE PRECISION APPROACH MINIMA – CATEGORY I (Notes 5, 6 and 7)				
MDH (ft)	Facilities/RVR (m)			
	Full	Intermediate	Basic	Nil

A: Rule	B: Summary of comments	C: Reason for change, remarks
<table><tr><td></td><td>(Note 1)</td><td>(Note 2)</td><td>(Note 3)</td><td>(Note 4)</td></tr><tr><td>200</td><td>500</td><td>600</td><td>700</td><td>1 000</td></tr><tr><td>201 – 250</td><td>550</td><td>650</td><td>750</td><td>1 000</td></tr><tr><td>251 – 300</td><td>600</td><td>700</td><td>800</td><td>1 000</td></tr><tr><td>301 and above</td><td>750</td><td>800</td><td>900</td><td>1 000</td></tr></table> Note 1: Full facilities comprise FATO/runway markings, 720 m or more of HI/MI approach lights, FATO/runway edge lights, threshold lights and FATO/runway end lights. Lights must be on.		
Note 2: Intermediate facilities comprise FATO/runway markings, 420 - 719 m of HI/MI approach lights, FATO/runway edge lights, threshold lights and FATO/runway end lights. Lights must be on.		
Note 3: Basic facilities comprise FATO/runway markings, <420 m of HI/MI approach lights, any length of LI approach lights, FATO/runway edge lights, threshold lights and FATO/runway end lights. Lights must be on.		
Note 4: Nil approach light facilities comprise FATO/runway markings, FATO/runway edge lights, threshold lights, FATO/runway end lights or no lights at all.		
Note 5: The above figures are either the reported RVR or CMV.		

A: Rule	B: Summary of comments	C: Reason for change, remarks
Note 6: The table is applicable to conventional approaches with a glide slope up to and including 4 degrees.		
Note 7: The MDH mentioned in Table 2 of AMC 7 OPS.GEN.150.H refers to the initial calculation of MDH. When selecting the associated RVR, there is no need to take account of a rounding up to the nearest ten feet, which may be done for operational purposes, e.g. conversion to DA.		
a. For night operations, ground lighting must be available to illuminate the FATO/runway and any obstacles;		
b. For-single pilot operations, the minimum RVR should be calculated based on OPS.GEN.150 and its AMC material. An RVR of less than 800 m should not be used except when using a suitable autopilot coupled to an ILS or MLS, in which case normal minima apply. The DH applied should not be less than 1.25 times the minimum use height for the autopilot.		
AMC8 OPS.GEN.150.A Instrument Flight Rules (IFR) operating minima		
AERODROME MINIMA – CIRCLING – AEROPLANES		
1. The MDH for circling should be the highest of: a. the published circling OCH for the aeroplane category; b. the minimum circling height derived from Table 1 of AMC8		

A: Rule	B: Summary of comments	C: Reason for change, remarks
OPS.GEN.150.A; or c. the DH/MDH of the preceding instrument approach procedure.		
2. The MDA for circling should be calculated by adding the published aerodrome elevation to the MDH, as determined by AMC8 OPS.GEN.150.A 1.		
3. The minimum visibility for circling should be the higher of: a. the circling visibility for the aeroplane category, if published; b. the minimum visibility derived from Table 1 of AMC8 OPS.GEN.150.A; or c. the RVR/CMV derived from Tables 2 and 3 of AMC6 OPS.GEN.150.A for the preceding instrument approach procedure.		
4. Notwithstanding the requirements in AMC8 OPS.GEN.150.A 3. above and limited to locations where there is a clear public interest to maintain current operations, the visibility may not be increased above the values derived from Table 1 of AMC8 OPS.GEN.150.A, taking into account the operator's experience, training programme and flight crew qualification.		
Table 1 of AMC8 OPS.GEN.150.A Minimum visibility and MDH for circling vs. aeroplane category		

	AEROPLANE CATEGORY

A: Rule	B: Summary of comments	C: Reason for change, remarks
<table><tr><td></td><td>A</td><td>B</td><td>C</td><td>D</td></tr><tr><td>MDH (ft)</td><td>400</td><td>500</td><td>600</td><td>700</td></tr><tr><td>Minimum meteorological visibility (m)</td><td>1 500</td><td>1 600</td><td>2 400</td><td>3 600</td></tr></table> 5. Circling with prescribed tracks is an accepted procedure within the meaning of this paragraph.		
AMC9 OPS.GEN.150.H Instrument Flight Rules (IFR) operating minima		
AERODROME MINIMA – ONSHORE CIRCLING – HELICOPTERS		
1. Circling is the term used to describe the visual phase of an instrument approach, to bring an aircraft into position for landing on a FATO/runway which is not suitably located for a straight in approach.		
2. For circling the specified MDH should not be less than 250 ft, and the meteorological visibility not less than 800 m.		
3. Visual manoeuvring (circling) with prescribed tracks is an accepted procedure within the meaning of this paragraph.		
AMC10 OPS.GEN.150 Instrument Flight Rules (IFR) operating		

A: Rule	B: Summary of comments	C: Reason for change, remarks
minima		
AERODROME MINIMA – VISUAL APPROACH An RVR of less than 800 m should not be used for a visual approach.		
AMC11 OPS.GEN.150 Instrument Flight Rules (IFR) operating minima		
AERODROME MINIMA – CONVERSION OF REPORTED METEOROLOGICAL VISIBILITY TO RVR/CMV		
1. A conversion from meteorological visibility to RVR/CMV should not be used for calculating take-off minima, Category II or III minima or when reported RVR is available. If the RVR is reported as being above the maximum value assessed by the aerodrome operator, e.g. "RVR more than 1 500 m", it is not considered to be a reported value for the purpose of this paragraph.		
2. For all other circumstances, Table 1 of AMC11 OPS.GEN.150 should be used.		
Table 1 of AMC11 OPS.GEN.150 Conversion of meteorological visibility to RVR/CMV		
Lighting elements in operation | RVR/CMV = reported meteorological visibility x		

A: Rule	B: Summary of comments	C: Reason for change, remarks
<table><tr><td></td><td>Day</td><td>Night</td></tr><tr><td>HI approach and runway lighting</td><td>1.5</td><td>2.0</td></tr><tr><td>Any type of lighting installation other than above</td><td>1.0</td><td>1.5</td></tr><tr><td>No lighting</td><td>1.0</td><td>n/a</td></tr></table>		
AMC12 OPS.GEN.150 Instrument Flight Rules (IFR) operating minima AERODROME MINIMA – EFFECT ON LANDING MINIMA OF TEMPORARILY FAILED OR DOWNGRADED GROUND EQUIPMENT		
1. These instructions are intended for use both pre-flight and in-flight. It is however not expected that the pilot-in-command would consult such instructions after passing the outer marker or equivalent position. If failures of ground aids are announced at such a late stage, the approach could be continued at the pilot-in-command's discretion. If failures are announced before such a late stage in the approach, their effect on the approach should be considered as described in Table 1 of AMC12 OPS.GEN.150, and the approach may have to be abandoned to allow this to happen.		
2. Conditions applicable to Tables 1 of AMC12 OPS.GEN.150: a. Multiple failures of runway/ FATO lights other than indicated in Table 1 of AMC12 OPS.GEN.150 may not be		

A: Rule	B: Summary of comments	C: Reason for change, remarks
acceptable; b. Deficiencies of approach and runway/FATO lights are treated separately; c. Category II or III operations. A combination of deficiencies in FATO/runway lights and RVR assessment equipment is not permitted; d. Failures other than ILS affect RVR only and not DH.		
Table 1 of AMC12 OPS.GEN.150 Failed or downgraded equipment - effect on landing minima		

FAILED OR DOWNGRADED EQUIPMENT	EFFECT ON LANDING MINIMA	
	Category I	APV & Non-Precision
ILS Standby Transmitter	No effect	
Outer Marker	No effect if replaced by equivalent position	APV – not applicable NPA with FAF: no effect unless used as FAF. If the FAF cannot be identified (e.g. no method available for timing of descent), non-precision operations cannot be conducted

A: Rule			B: Summary of comments	C: Reason for change, remarks
Middle Marker	No effect	No effect unless used as MAPt		
RVR Assessment Systems	On runways equipped with 2 or more RVR Assessment Units; one may be inoperative	No effect		
Approach lights	Not permitted	Minima as for NALS		
Approach lights except the last 210 m	Not permitted	Minima as for BALS		
Approach lights except the last 420 m	No effect	Minima as for IALS		
Standby power for approach lights	No effect			
Edge lights, threshold lights and runway end lights	Day – no effect Night – not permitted			
Centreline lights	No effect if F/D, HUDLS or auto-land otherwise RVR 750 m	No effect		

A: Rule	B: Summary of comments	C: Reason for change, remarks
<table><tr><td>Centreline lights spacing increased to 30 m</td><td colspan="2">No effect</td></tr><tr><td>Touch Down Zone lights</td><td>No effect if F/D, HUDLS or auto-land otherwise RVR 750 m</td><td>No effect</td></tr><tr><td>Taxiway light system</td><td colspan="2">No effect</td></tr></table>		
GM1 OPS.GEN.150.A Instrument Flight Rules (IFR) operating minima AERODROME MINIMA – AEROPLANE CATEGORIES		
1. The criteria taken into consideration for the classification of aeroplanes by categories is the indicated air speed at threshold (V_{AT}) which is equal to the stalling speed (V_{SO}) multiplied by 1.3 or V_{S1G} multiplied by 1.23 in the landing configuration at the maximum certificated landing mass. If both V_{SO} and V_{S1G} are available, the higher resulting V_{AT} should be used. The aeroplane categories corresponding to V_{AT} values are in the Table 1 of GM1 OPS.GEN.150.A.		
Table 1 of GM1 OPS.GEN.150.A Aeroplane categories corresponding to VAT values		
<table><tr><td>AEROPLANE CATEGORY</td><td>V_{AT}</td></tr></table>		

A: Rule	B: Summary of comments	C: Reason for change, remarks
A — Less than 91 kts B — 91 – 120 kts C — 121 – 140 kts D — 141 – 165 kts E — 166 – 210 kts 2. The landing configuration which is to be taken into consideration should be defined by the operator or by the aeroplane manufacturer.		
3. Permanent change of category (maximum landing mass): a. An operator may impose a permanent, lower, landing mass, and use this mass for determining the VAT; b. The category defined for a given aeroplane should be a permanent value and thus independent of the changing conditions of day-to-day operations; c. The category should be stated in the operations manual, where required.		
GM2 OPS.GEN.150.A Instrument Flight Rules (IFR) operating minima		

A: Rule	B: Summary of comments	C: Reason for change, remarks
AERODROME MINIMA - CONTINUOUS DESCENT FINAL APPROACH (CDFA) – AEROPLANES		
1. Introduction:		
a. Controlled Flight Into Terrain (CFIT) is a major causal category of accident and hull loss in commercial aviation. Most CFIT accidents occur in the final approach segment of non-precision approaches; the use of stabilised-approach criteria on a continuous descent with a constant, pre-determined vertical path is seen as a major improvement in safety during the conduct of such approaches. Operators should ensure that the following techniques are adopted as widely as possible, for all approaches;		
b. The elimination of level flight segments at MDA close to the ground during approaches, and the avoidance of major changes in attitude and power/thrust close to the runway which can destabilise approaches, are seen as ways to reduce operational risks significantly;		
c. For completeness this guidance also includes criteria which should be considered to ensure the stability of an approach (in terms of the aeroplanes energy and approach-path control);		
d. The term CDFA has been selected to cover a technique for any type of non-precision approach;		

A: Rule	**B: Summary of comments**	**C: Reason for change, remarks**
e. Non-precision approaches operated other than using a constant pre-determined vertical path or when the facility requirements and associated conditions do not meet the conditions specified in 2.d., RVR penalties apply. However, this should not preclude an operator from applying CDFA technique to such approaches. Those operations should be classified as special letdown procedures, since it has been shown that such operations, flown without additional training, may lead to inappropriately steep descent to the MDA/H, with continued descent below the MDA/H in an attempt to gain (adequate) visual reference;		
f. The advantages of CDFA are as follows:		
i. The technique enhances safe approach operations by the utilisation of standard operating practices;		
ii. The profile reduces the probability of infringement of obstacle-clearance along the final approach segment and allows the use of MDA as DA;		
iii. The technique is similar to that used when flying an ILS approach, including when executing the missed approach and the associated go-around manoeuvre;		
iv. The aeroplane attitude may enable better acquisition of visual cues;		
v. The technique may reduce pilot workload;		

A: Rule	B: Summary of comments	C: Reason for change, remarks
vi. The Approach profile is fuel efficient;		
vii. The Approach profile affords reduced noise levels;		
viii. The technique affords procedural integration with APV approach operations;		
ix. When used and the approach is flown in a stabilised manner is the safest approach technique for all approach operations.		
2. CDFA:		
a. Continuous Descent Final Approach. A specific technique for flying the final approach segment of a non-precision instrument approach procedure as a continuous descent, without level-off, from an altitude/height at or above the final approach fix altitude/height to a point approximately 15 m (50 ft) above the landing runway threshold or the point where the flare manoeuvre should begin for the type of aircraft flown;		
b. An approach is only suitable for application of CDFA technique when it is flown along a pre-determined vertical approach slope which follows a:		
i. Designated Vertical Profile: A continuous vertical approach profile which forms part of the approach procedure design. APV is considered to be an approach with a designated vertical profile; or a		

A: Rule	B: Summary of comments	C: Reason for change, remarks
ii. Nominal Vertical Profile: A vertical profile not forming part of the approach procedure design, but which can be flown as a continuous descent. The nominal vertical profile information may be published or displayed (on the approach chart) to the pilot by depicting the nominal slope or range/distance vs height. Approaches with a nominal vertical profile are considered to be: A. NDB, NDB/DME; B. VOR, VOR/DME; C. LLZ, LLZ/DME; D. VDF, SRA or E. RNAV/LNAV;		
c. Stabilised Approach (SAp). An approach which is flown in a controlled and appropriate manner in terms of configuration, energy and control of the flight path from a pre-determined point or altitude/height down to a point 50 feet above the threshold or the point where the flare manoeuvre is initiated if higher:		
i. The control of the descent path is not the only consideration when using the CDFA technique. Control of the aeroplane’s configuration and energy is also vital to the safe conduct of an approach;		
ii. The control of the flight path, described above as one of the requirements for conducting an SAp, should not be confused with the path requirements		

A: Rule	**B: Summary of comments**	**C: Reason for change, remarks**
for using the CDFA technique. The pre-determined path requirements for conducting an SAp are established by the operator and published in the operations manual part B; guidance for conducting SAp operations is given in 5.;		
iii. The predetermined approach slope requirements for applying the CDFA technique are established by the following: A. The instrument-procedure design when the approach has a designated vertical profile; B. The published 'nominal' slope information when the approach has a nominal vertical profile; C. The designated final-approach segment minimum of 3 nm, and maximum, when using timing techniques, of 8 nm;		
iv. A Stabilised Approach will never have any level segment of flight at DA/H (or MDA/H as applicable). This enhances safety by mandating a prompt go-around manoeuvre at DA/H (or MDA/H);		
v. An approach using the CDFA technique will always be flown as an SAp, since this is a requirement for applying CDFA; however, an SAp does not have to be flown using the CDFA technique, for example a visual approach;		
d. Approach with a designated vertical profile using the CDFA technique:		

A: Rule	B: Summary of comments	C: Reason for change, remarks
i. The optimum angle for the approach slope is 3 degrees, and the gradient should preferably not exceed 6.5 percent which equates to a slope of 3.77 degrees, (400 ft/nm) for procedures intended for conventional aeroplane types/classes and/or operations. In any case, conventional approach slopes should be limited to 4.5 degrees for Category A and B aeroplanes and 3.77 degrees for Category C and D aeroplanes, which are the upper limits for applying the CDFA technique. A 4.5 degree approach slope is the upper limit for certification of conventional aeroplanes; ii. The approach is to be flown utilising operational flight techniques and on board navigation system(s) and navigation aids to ensure it can be flown on the desired vertical path and track in a stabilised manner, without significant vertical path changes during the final-segment descent to the runway. APV is included; iii. The approach is flown to a DA/H; iv. No MAPt is published for these procedures;		
e. Approach with a nominal vertical profile using the CDFA technique:		
i. The optimum angle for the approach slope is 3 degrees, and the gradient should preferably not exceed 6.5 percent which equates to a slope of 3.77 degrees, (400 ft/nm) for procedures intended for conventional aeroplane types / class and / or operations. In any case, conventional approaches		

A: Rule	B: Summary of comments	C: Reason for change, remarks
should be limited to 4.5 degrees for Category A and B aeroplanes and 3.77 degrees for Category C and D aeroplanes, which are the upper limits for applying CDFA technique. A 4.5 degree approach slope is the upper limit for certification of conventional aeroplanes;		
ii. The approach procedure should meet at least the following facility requirements and associated conditions. NDB, NDB/DME, VOR, VOR/DME, LLZ, LLZ/DME, VDF, SRA, RNAV/LNAV) and fulfil the following criteria: A. The final approach track off-set ≤ 5 degrees except for Category A and B aeroplanes, where the approach-track off-set is ≤ 15 degrees; and B. A FAF, or another appropriate fix where descent initiated is available; and C. The distance from the FAF to the Threshold (THR) is less than or equal to 8 nm in the case of timing; or D. The distance to the THR is available by FMS/RNAV or DME; or E. The minimum final-segment of the designated constant angle approach path should not be less than 3 nm from the THR unless approved by the authority;		
iii. CDFA may also be applied utilising the following: A. RNAV/LNAV with altitude/height cross checks		

A: Rule	B: Summary of comments	C: Reason for change, remarks
against positions or distances from the THR; or B. Height crosscheck compared with DME distance values;		
iv. The approach is flown to a DA/H;		
v. The approach is flown as an SAp.		
Generally, an MAPt is published for these procedures.		
3. Operational procedures:		
a. An MAPt should be specified to apply CDFA with a nominal vertical profile as for any non-precision approach;		
b. The flight techniques associated with CDFA employ the use of a predetermined approach slope. The approach, in addition, is flown in a stabilised manner, in terms of configuration, energy and control of the flight path. The approach should be flown to a DA/H at which the decision to land or go-around is made immediately. This approach technique should be used when conducting: i. all NPAs meeting the specified CDFA criteria in 2.d.; and ii. all approaches categorised as APV;		
c. The flight techniques and operational procedures prescribed above should always be applied; in particular with regard to control of the descent path and the stability		

A: Rule	B: Summary of comments	C: Reason for change, remarks
of the aeroplane on the approach prior to reaching MDA/H. Level flight at MDA/H should be avoided as far as practicable. In addition appropriate procedures and training should be established and implemented to facilitate the applicable elements of 4., 5. and 6. Particular emphasis should be placed on 4.h., 5.a. to g. and 8.d.;		
d. In cases where the CDFA technique is not used with high MDA/H, it may be appropriate to make an early descent to MDA/H with appropriate safeguards to include the above training requirements, as applicable, and the application of a significantly higher RVR/Visibility;		
e. For circling approaches (Visual Manoeuvring), all the applicable criteria with respect to the stability of the final descent path to the runway should apply. In particular, the control of the desired final nominal descent path to the threshold should be conducted to facilitate the techniques described in 4. and 5.:		
i. Stabilisation during the final straight-in segment for a circling approach should ideally be accomplished by 1000 ft above aerodrome elevation for turbo-jet aeroplanes;		
ii. For a circling approach where the landing runway threshold and appropriate visual landing aids may be visually acquired from a point on the designated or published procedure (prescribed tracks), stabilisation should be achieved not later than 500 ft above aerodrome elevation. It is however recommended		

A: Rule	B: Summary of comments	C: Reason for change, remarks
that the aeroplane be stabilised when passing 1000 ft above aerodrome elevation;		
iii. When a low-level final turning manoeuvre is required in order to align the aeroplane visually with the landing runway, a height of 300 ft above the runway threshold elevation, or aerodrome elevation as appropriate, should be considered as the lowest height for approach stabilisation with wings level;		
iv. Dependent upon aeroplane type/class the operator may specify an appropriately higher minimum stabilisation height for circling approach operations;		
v. The operator should specify in the operations manual the procedures and instructions for conducting circling approaches, including at least: A. the minimum required visual reference; B. the corresponding actions for each segment of the circling manoeuvre; C. the relevant go-around actions if the required visual reference is lost; and D. the visual reference requirements for any operations with a prescribed track circling manoeuvre to include the MDA/H and any published MAPt;		
f. Visual approach. All the applicable criteria with respect to the stability of the final descent path to the runway should apply to the operation of visual approaches. In particular,		

A: Rule	B: Summary of comments	C: Reason for change, remarks
the control of the desired final nominal descent path to the threshold should be conducted to facilitate the appropriate techniques and procedures described in 6. and 7.:		
i. Stabilisation during the final straight-in segment for a visual approach should ideally be accomplished by 500 ft above runway threshold elevation for turbo-jet aeroplanes;		
ii. When a low level final turning manoeuvre is required in order to align the aeroplane with the landing runway, a minimum height of 300 ft above the runway threshold elevation (or aerodrome elevation as appropriate) should be considered as the lowest height for visual approach stabilisation with wings level;		
iii. Dependent upon aeroplane type/class, the operator may specify an appropriately higher minimum stabilisation height for visual approach operations;		
iv. The operator should specify in the operations manual the procedures and instructions for conducting visual approaches to include at least: A. the minimum required visual reference; B. the corresponding actions if the required visual reference is lost during a visual approach manoeuvre; and C. the appropriate go-around actions;		

A: Rule	**B: Summary of comments**	**C: Reason for change, remarks**
g. The control of the descent path using the CDFA technique ensures that the descent path to the runway threshold is flown using either: i. a variable descent rate or flight path angle to maintain the desired path, which may be verified by appropriate crosschecks; ii. a pre-computed constant rate of descent from the FAF, or other appropriate fix which is able to define a descent point and/or from the final approach segment step-down fix; or iii. vertical guidance, including APV;		
The above techniques also support a common method for the implementation of flight-director-guided or auto-coupled RNAV/VNAV or GLS approaches;		
h. The manoeuvre associated with the vertical profile of the missed approach should be initiated not later than reaching the MAPt or the DA/H specified for the approach, whichever occurs first. The lateral part of the missed approach procedure must be flown via the MAPt unless otherwise stated on the approach chart;		
i. In case the CDFA technique is not used the approach should be flown to an altitude/height at or above the MDA/H where a level flight segment at or above MDA/H may be flown to the MAPt;		

A: Rule	B: Summary of comments	C: Reason for change, remarks
j. In case the CDFA technique is not used when flying an approach, an operator should implement procedures to ensure that early descent to the MDA/H will not result in a subsequent flight below MDA/H without adequate visual reference. These procedures could include: i. awareness of radio altimeter information with reference to the approach profile; ii. enhanced Ground Proximity Warning System and/or Terrain Awareness information; iii. limitation of rate of descent; iv. limitation of the number of repeated approaches; v. safeguards against too early descents with prolonged flight at MDA/H; and vi. specification of visual requirements for the descent from the MDA/H.		
4. Flight techniques:		
a. The CDFA technique can be used on almost any published non-precision approach when the control of the descent path is aided by either: i. a recommended descent rate, based on estimated ground speed, which may be provided on the approach chart; or ii. the descent path as depicted on the chart;		

A: Rule	B: Summary of comments	C: Reason for change, remarks
b. In order to facilitate the requirement of 4.a.ii., the operator should either provide charts which depict the appropriate cross check altitudes/heights with the corresponding appropriate range information, or such information should be calculated and provided to the flight crew in an appropriate and usable format;		
c. For approaches flown coupled to a designated descent path using computed electronic glide-slope guidance (normally a 3 degree path), the descent path should be appropriately coded in the flight management system data base and the specified navigational accuracy (RNP) should be determined and maintained throughout the operation of the approach;		
d. With an actual or estimated ground speed, a nominal vertical profile and required descent rate, the approach should be flown by crossing the FAF configured and on-speed. The tabulated or required descent rate is established and flown to not less than the DA/H, observing any step-down crossing altitudes if applicable;		
e. To assure the appropriate descent path is flown, the pilot not flying should announce crossing altitudes as published fixes and other designated points are crossed, giving the appropriate altitude or height for the appropriate range as depicted on the chart. The pilot flying should promptly adjust the rate of descent as appropriate;		

A: Rule	B: Summary of comments	C: Reason for change, remarks
f. With the required visual reference requirements established, the aeroplane should be in position to continue descent through the DA/H or MDA/H with little or no adjustment to attitude or thrust/power;		
g. When applying CDFA on an approach with a nominal vertical profile to a DA/H, it may be necessary to apply an add-on to the published minima (vertical profile only) to ensure sufficient obstacle clearance. The add-on, if applicable, should be published in the operations manual – (Aerodrome Operating Minima). However, the resulting procedure minimum will still be referred to as the DA/H for the approach;		
h. Operators should establish a procedure to ensure that an appropriate callout (automatic or oral) is made when the aeroplane is approaching DA/H. If the required visual references are not established at DA/H, the missed approach procedure is to be executed promptly. Visual contact with the ground alone is not sufficient for continuation of the approach. With certain combinations of DA/H, RVR and approach slope, the required visual references may not be achieved at the DA/H in spite of the RVR being at or above the minimum required for the conduct of the approach. The safety benefits of CDFA are negated if prompt go-around action is not initiated;		
i. The following bracketing conditions in relation to angle of bank, rate of descent and thrust/power management are considered to be suitable for most aeroplane types/class		

A: Rule	B: Summary of comments	C: Reason for change, remarks
to ensure the predetermined vertical path approach is conducted in a stabilised manner:		
i. Bank angle: As prescribed in the operations manual, should generally be less than 30 degrees;		
ii. Rate of descent (ROD): The target ROD should not exceed 1000 fpm). The ROD should deviate by no more than + 300 fpm from the target ROD. Prolonged rates of descent which differ from the target ROD by more than 300 fpm indicate that the vertical path is not being maintained in a stabilised manner. The ROD should not exceed 1200 fpm, except under exceptional circumstances which have been anticipated and briefed prior to commencing the approach; for example, a strong tailwind. Zero rate of descent may be used when the descent path needs to be regained from below the profile. The target ROD may need to be initiated prior to reaching the required descent point (typically 0.3 nm before the descent point, dependent upon ground speed, which may vary for each type/class of aeroplane). (Refer to 4.i.iii.);		
iii. Thrust/power management: The limits of thrust/power and the appropriate range should be specified in the operations manual Part B or equivalent documents;		
j. Transient corrections/overshoots: The above-specified range of corrections should normally be used to make occasional momentary adjustments in order to maintain		

A: Rule	B: Summary of comments	C: Reason for change, remarks
the desired path and energy of the aeroplane. Frequent or sustained overshoots should require the approach to be abandoned and a go-around initiated. A correction philosophy should be applied similar to that described in 5.;		
k. The relevant elements of 4. should, in addition, be applied to approaches not flown using the CDFA technique; the procedures thus developed, thereby ensure a controlled flight path to MDA/H. Dependent upon the number of step down fixes and the aeroplane type/class, the aeroplane should be appropriately configured to ensure safe control of the flight path prior to the final descent to MDA/H.		
5. Stabilisation of energy/speed and configuration of the aeroplane on the approach:		
a. The control of the descent path is not the only consideration. Control of the aeroplane's configuration and energy is also vital to the safe conduct of an approach;		
b. The approach should be considered to be fully stabilised when the aeroplane is: i. tracking on the required approach path and profile; ii. in the required configuration and attitude; iii. flying with the required rate of descent and speed; and iv. flying with the appropriate thrust/power and trim;		

A: Rule	**B: Summary of comments**	**C: Reason for change, remarks**
c. The following flight path control criteria should be met and maintained when the aeroplane passes the gates described in 6. and 7.;		
d. The aeroplane is considered established on the required approach path at the appropriate energy for stable flight using the CDFA technique when: i. it is tracking on the required approach path with the correct track set, approach aids tuned and identified as appropriate to the approach type flown and on the required vertical profile; and ii. it is at the appropriate attitude and speed for the required target ROD with the appropriate thrust/power and trim;		
e. It is recommended to compensate for strong wind/gusts on approach by speed increments given in the operations manual. To detect windshear and magnitude of winds aloft, all available aeroplane equipment such as FMS, INS, etc. should be used;		
f. It is recommended that stabilisation during any straight-in approach without visual reference to the ground should be achieved at the latest when passing 1 000 ft above runway threshold elevation. For approaches with a designated vertical profile applying CDFA, a later stabilisation in speed may be acceptable if higher than normal approach speeds are required by ATC procedures or allowed by the operations manual. Stabilisation should,		

A: Rule	B: Summary of comments	C: Reason for change, remarks
however, be achieved not later than 500 ft above runway threshold elevation;		
g. For approaches where the pilot has visual reference with the ground, stabilisation should be achieved not later than 500 ft above aerodrome elevation. However, it is recommended that the aeroplane should be stabilised when passing 1000 ft above runway threshold elevation;		
h. The relevant elements of 5. should, in addition, be applied to approaches not flown using the CDFA technique; the procedures thus developed ensure that a controlled and stable path to MDA/H is achieved. Dependent upon the number of step down fixes and the aeroplane type/class, the aeroplane should be appropriately configured to ensure safe and stable flight prior to the final descent to MDA/H.		
6. Visual reference and path-control below MDA/H when not using the CDFA technique. In addition to the requirements stated in OPS.GEN.150 and its AMC material the pilot should have attained a combination of visual cues to safely control the aeroplane in roll and pitch to maintain the final approach path to landing. This should be included in the standard operating procedures and reflected in the operations manual.		
7. Operational procedures and instructions for using the CDFA technique or not:		

A: Rule	B: Summary of comments	C: Reason for change, remarks
a. The operator should establish procedures and instructions for flying approaches using the CDFA technique and not. These procedures should be included in the operations manual and should include the duties of the flight crew during the conduct of such operations: i. The operator should publish in the operations manual the requirements stated in 4. and 5., as appropriate to the aeroplane type or class to be operated; ii. The checklists should be completed as early as practicable and preferably before commencing final descent towards the DA/H;		
b. The operator's manuals should at least specify the maximum ROD for each aeroplane type/class operated and the required visual reference to continue the approach below: i. the DA/H, when applying CDFA; ii. the MDA/H, when not applying CDFA;		
c. The operator should establish procedures which prohibit level flight at MDA/H without the flight crew having obtained the required visual references. It is not the intention to prohibit level flight at MDA/H when conducting a circling approach, which does not come within the definition of the CDFA technique;		

A: Rule	B: Summary of comments	C: Reason for change, remarks
d. The operator should provide the flight crew with unambiguous details of the technique used (CDFA or not). The corresponding relevant minima should include: i. type of decision, whether DA/H or MDA/H; ii. MAPt as applicable; and iii. appropriate RVR/Visibility for the approach classification and aeroplane category;		
e. Specific types/class of aeroplane, in particular certain Performance Class B and Class C aeroplanes, may be unable to comply fully with the requirements of this guidance relating to the operation of CDFA. This problem arises because some aeroplanes must not be configured fully into the landing configuration until required visual references are obtained for landing, because of inadequate missed approach performance engine out. For such aeroplanes, the operator should either: i. obtain approval from the authority for an appropriate modification to the stipulated procedures and flight techniques prescribed herein; or ii. increase the required minimum RVR to ensure the aeroplane will be operated safely during the configuration change on the final approach path to landing.		
8. Training:		

A: Rule	B: Summary of comments	C: Reason for change, remarks
a. The operator should ensure that, prior to using the CDFA technique or not (as appropriate), each flight crew member undertakes the appropriate training and checking as required by Part OR.OPS.FC. Such training should cover the techniques and procedures appropriate to the operation which are stipulated in 4. and 5. The operator's proficiency check, if applicable, should include at least one approach to a landing or go-around as appropriate using the CDFA technique or not. The approach should be operated to the lowest appropriate DA/H or MDA/H as appropriate; and, if conducted in a simulator, the approach should be operated to the lowest approved RVR. The approach is not in addition to any manoeuvre currently required by either Part-FCL or Part-OPS. The requirement may be fulfilled by undertaking any currently required approach (engine out or otherwise) other than a precision approach, whilst using the CDFA technique;		
b. The policy for the establishment of constant predetermined vertical path and approach stability are to be enforced both during initial and recurrent pilot training and checking. The relevant training procedures and instructions should be documented in the operations manual;		
c. The training should emphasise the need to establish and facilitate joint crew procedures and CRM to enable accurate descent path control and the requirement to establish the aeroplane in a stable condition as required		

A: Rule	B: Summary of comments	C: Reason for change, remarks
by the operator's operational procedures. If barometric vertical navigation is used, the crews should be trained in the errors associated with these systems;		
d. During training, emphasis should be placed on the flight crew's need to:		
i. maintain situational awareness at all times, in particular with reference to the required vertical and horizontal profile;		
ii. ensure good communication channels throughout the approach;		
iii. ensure accurate descent-path control particularly during any manually-flown descent phase. The non-operating/non-handling pilot should facilitate good flight path control by: A. communicating any altitude/height crosschecks prior to the actual passing of the range/altitude or height crosscheck; B. prompting, as appropriate, changes to the target ROD; and C. monitoring flight path control below DA/MDA.		
iv. understand the actions to be taken if the MAPt is reached prior to the MDA/H;		
v. ensure that the decision to go-around must, at the latest, have been taken upon reaching the DA/H or		

A: Rule	B: Summary of comments	C: Reason for change, remarks
MDA/H;		
vi. ensure that prompt go-around action is taken immediately when reaching DA/H if the required visual reference has not been obtained as there may be no obstacle protection if the go-around manoeuvre is delayed;		
vii. understand the significance of using the CDFA technique to a DA/H with an associated MAPt and the implications of early go-around manoeuvres; and		
viii. understand the possible loss of the required visual reference (due to pitch-change/climb) when not using the CDFA technique for aeroplane types/classes which require a late change of configuration and/or speed to ensure the aeroplane is in the appropriate landing configuration;		
e. Additional specific training when not using the CDFA technique with level flight at or above MDA/H:		
i. The training should detail: A. the need to facilitate CRM; with appropriate flight crew communication in particular; B. the additional known safety risks associated with the 'dive-and-drive' approach philosophy which may be associated with non-CDFA; C. the use of DA/H during approaches flown using		

A: Rule	B: Summary of comments	C: Reason for change, remarks
the CDFA technique; D. the significance of the MDA/H and the MAPt where appropriate; E. the actions to be taken at the MAPt and the need to ensure that the aeroplane remains in a stable condition and on the nominal and appropriate vertical profile until the landing; F. the reasons for increased RVR/Visibility minima when compared to the application of CDFA; G. the possible increased obstacle infringement risk when undertaking level flight at MDA/H without the required visual references; H. the need to accomplish a prompt go-around manoeuvre if the required visual reference is lost; I. the increased risk of an unstable final approach and an associated unsafe landing if a rushed approach is attempted either from: 1. inappropriate and close-in acquisition of the required visual reference; or 2. unstable aeroplane energy and or flight path control; and J. The increased risk of CFIT (see introduction).		
9. Approaches requiring level flights: a. The procedures which are flown with level flight at/or		

A: Rule	B: Summary of comments	C: Reason for change, remarks
above MDA/H should be listed in the operations manual; b. Operators should classify aerodromes where there are approaches which require level flight at/or above MDA/H as being B and C categorised. Such aerodrome categorisation will depend upon the operator's experience, operational exposure, training programme(s) and flight crew qualification(s).		
GM3 OPS.GEN.150.A Instrument Flight Rules (IFR) operating minima AERODROME MINIMA – CIRCLING – AEROPLANES		
1. Terminology: XLS = ILS/MLS/GLS etc.		
2. Visual manoeuvring (circling). The purpose of this guidance material is to provide operators with supplemental information regarding the application of aerodrome operating minima in relation to circling approaches.		
3. Conduct of flight – General: a. The MDH and OCH included in the procedure are referenced to aerodrome elevation; b. The MDA is referenced to mean sea level; c. For these procedures, the applicable visibility is the meteorological VIS.		

A: Rule	B: Summary of comments	C: Reason for change, remarks
4. Instrument approach followed by visual manoeuvring (circling) without prescribed tracks:		
a. When the aeroplane is on the initial instrument approach, before visual reference is stabilised, but not below MDA/H - the aeroplane should follow the corresponding instrument approach procedure until the appropriate instrument MAPt is reached;		
b. At the beginning of the level flight phase at or above the MDA/H, the instrument approach track determined by radio navigation aids, RNAV, RNP or XLS should be maintained until: i. the pilot estimates that, in all probability, visual contact with the runway of intended landing or the runway environment will be maintained during the entire circling procedure; ii. the pilot estimates that the aeroplane is within the circling area before commencing circling; and iii. the pilot is able to determine the aeroplane's position in relation to the runway of intended landing with the aid of the appropriate external references;		
c. When reaching the published instrument MAPt and the conditions stipulated in 4.b., are unable to be established by the pilot, a missed approach should be carried out in accordance with that instrument approach procedure;		

A: Rule	B: Summary of comments	C: Reason for change, remarks
d. After the aeroplane has left the track of the initial (letdown) instrument approach, the flight phase outbound from the runway should be limited to an appropriate distance, which is required to align the aeroplane onto the final approach. Such manoeuvres should be conducted to enable the aeroplane: i. to attain a controlled and stable descent path to the intended landing runway; and ii. remain within the circling area and in such way that visual contact with the runway of intended landing or runway environment is maintained at all times;		
e. Flight manoeuvres should be carried out at an altitude/height that is not less than the circling MDA/H;		
f. Descent below MDA/H should not be initiated until the threshold of the runway to be used has been appropriately identified and the aeroplane is in a position to continue with a normal rate of descent and land within the touchdown zone.		
5. Instrument approach followed by a visual manoeuvring (circling) with prescribed track:		
a. The aeroplane should remain on the initial instrument approach or letdown procedure until one of the following is reached: i. The prescribed divergence point to commence		

A: Rule	B: Summary of comments	C: Reason for change, remarks
circling on the prescribed track; or ii. The appropriate initial instrument MAPt;		
b. The aeroplane should be established on the instrument approach track determined by the radio navigation aids, RNAV, RNP, or XLS in level flight at or above the MDA/H at or by the circling manoeuvre divergence point;		
c. If the divergence point is reached before the required visual reference is acquired, a missed approach should be initiated not later than the initial instrument approach MAPt and completed in accordance with the initial instrument approach procedure;		
d. When commencing the prescribed track-circling manoeuvre at the published divergence point, the subsequent manoeuvres should be conducted to comply with the published routing and promulgated heights/altitudes;		
e. Unless otherwise specified, once the aeroplane is established on the prescribed track(s), the promulgated visual reference should not be required to be maintained unless: i. required by the State; or ii. the Circling MAPt (if published) is reached;		
f. If the prescribed track-circling manoeuvre has a published MAPt and the required visual reference has not been		

A: Rule	B: Summary of comments	C: Reason for change, remarks
obtained a missed approach should be executed in accordance with 6.b. and 6.c.;		
g. Subsequent further descent below MDA/H should only commence when the required visual reference is obtained;		
h. Unless otherwise specified in the procedure, final descent should not be initiated from MDA/H until the threshold of the intended landing runway has been appropriately identified and the aeroplane is in a position to continue with a normal rate of descent and land within the touchdown zone.		
6. Missed approach:		
a. Missed approach during instrument approach prior to circling: i. If the decision to carry out a missed approach is taken when the aeroplane is positioned on the instrument approach track defined by radio-navigation aids RNAV, RNP, or XLS, and before commencing the circling manoeuvre, the published missed approach for the instrument approach should be followed; ii. If the instrument approach procedure is carried out with the aid of an XLS or an SAp, the MAPt associated with an XLS procedure without glide path (GP-out procedure) or the SAp, where applicable, should be used;		

A: Rule	B: Summary of comments	C: Reason for change, remarks
b. If a prescribed missed approach is published for the circling manoeuvre, this overrides the manoeuvres prescribed below;		
c. If visual reference is lost while circling to land after the aeroplane has departed from the initial instrument approach track, the missed approach specified for that particular instrument approach should be followed. It is expected that the pilot will make an initial climbing turn toward the intended landing runway and continue overhead the aerodrome where the pilot will establish the aeroplane in a climb on the instrument missed approach track;		
d. The aeroplane should not leave the visual manoeuvring (circling) area, which is obstacle protected, unless: i. established on the appropriate missed approach track; or ii. at Minimum Sector Altitude (MSA);		
e. All turns should (see Note 1 below) be made in the same direction and the aeroplane should remain within the circling protected area while climbing to either: i. the altitude assigned to any published circling missed approach manoeuvre if applicable; ii. the altitude assigned to the missed approach of the initial instrument approach; iii. the Minimum Sector Altitude (MSA);		

A: Rule	B: Summary of comments	C: Reason for change, remarks
iv. the Minimum Holding Altitude (MHA) applicable for transition to a holding facility or fix, or continue to climb to a Minimum Safe Altitude; or v. as directed by ATS/Control (C).		
Note 1: When the go-around is commenced on the "downwind" leg of the circling manoeuvre, an "S" turn may be undertaken to align the aeroplane on the initial instrument approach missed approach path, provided the aeroplane remains within the protected circling area.		
Note 2: The pilot-in-command should be responsible for ensuring adequate terrain clearance during the above-stipulated manoeuvres, particularly during the execution of a missed approach initiated by ATS;		
f. In as much as the circling manoeuvre may be accomplished in more than one direction, different patterns will be required to establish the aeroplane on the prescribed missed approach course depending on its position at the time visual reference is lost. In particular, all turns are to be in the prescribed direction if this is restricted, e.g. to the west/east (left or right hand) to remain within the protected circling area;		
g. If a missed approach procedure is promulgated for the runway (XX) onto which the aeroplane is conducting a circling approach and the aeroplane has commenced a manoeuvre to align with the runway; the missed approach for this direction may be accomplished. The ATS should be		

A: Rule	B: Summary of comments	C: Reason for change, remarks
informed of the intention to fly the promulgated missed approach procedure for runway XX;		
h. When the option described in 6.g. is undertaken the pilot-in-command should whenever possible advise at the earliest opportunity, the ATS/C of the intended go-around procedure. This dialogue should, if possible occur during the initial approach phase and include the intended missed approach to be flown and the level off altitude;		
i. In addition to 6.h., the pilot-in-command should advise ATS/C when any go-around has commenced, the height/altitude the aeroplane is climbing to and the position the aeroplane is proceeding towards and or heading the aeroplane is established on.		
GM4 OPS.GEN.150.H Instrument Flight Rules (IFR) operating minima		
AERODROME MINIMA - ONSHORE AERODROME DEPARTURE PROCEDURES – HELICOPTERS The cloud base and visibility should be such as to allow the helicopter to be clear of cloud at Take-off Decision Point (TDP), and for the pilot flying to remain in sight of the surface until reaching the minimum speed for flight in instrument meteorological conditions given in the AFM.		
GM OPS.GEN.150(b) Instrument Flight Rules (IFR) operating minima		

A: Rule	B: Summary of comments	C: Reason for change, remarks
INCREMENTS IMPOSED BY THE COMPETENT AUTHORITY Additional increments to the published minima may be imposed by the competent authorities to take into account special operations, such as downwind approaches and single-pilot operations.		
AMC OPS.GEN.155.H Selection of alternate aerodromes		
OFFSHORE ALTERNATES - HELICOPTERS		
1. Suitable offshore alternates may be selected and specified subject to the following: a. The offshore alternate should only be used after passing a PNR. Prior to a PNR, onshore alternates should be used; b. Mechanical reliability of critical control systems and critical components should be considered and taken into account when determining the suitability of the alternate; c. OEI performance capability should be attainable prior to arrival at the alternate; d. To the extent possible, deck availability should be guaranteed; and e. Weather information must be reliable and accurate.		
2. Offshore alternates should not be used when it is possible to carry enough fuel to have an onshore alternate. Offshore alternates should not be used in a hostile environment.		

A: Rule	B: Summary of comments	C: Reason for change, remarks
3. The landing technique specified in the AFM following control system failure may preclude the nomination of certain helidecks as alternate aerodromes.		
GM1 OPS.GEN.155.A(a)(3) Selection of alternate aerodromes		
ISOLATED AERODROME – AEROPLANES The destination aerodrome could be considered as an isolated aerodrome if the fuel required to the nearest adequate destination alternate aerodrome is more than:	1 IS: Request to put the definition of "isolated aerodrome" in the IR;	The term is defined in CAT.OP.AH.106.
1. for aeroplanes with reciprocating engines, fuel to fly for 45 minutes plus 15 % of the flight time planned to be spent at cruising level or two hours, whichever is less; or		
2. for aeroplanes with turbine engines, fuel to fly for two hours at normal cruise consumption above the destination aerodrome, including final reserve fuel.		
GM2 OPS.GEN.155.H Selection of alternate aerodromes		
OFFSHORE ALTERNATES – HELICOPTERS – COMMERCIAL AIR TRANSPORT		
1. The procedures contained in AMC OPS.CAT.155.H(a)(1) are weather-critical. Consequently, meteorological data conforming to the standards contained in the Regional Air Navigation Plan and ICAO Annex 3 Meteorological Service for International Air		

A: Rule	B: Summary of comments	C: Reason for change, remarks
Navigation has been specified. As the following meteorological data is point specific, caution should be exercised when associating it with nearby aerodromes (or helidecks).		
2. Meteorological Reports (METARs): a. Routine and special meteorological observations at offshore installations should be made during periods and at a frequency agreed between the meteorological authority and the operator concerned. They should comply with the requirements contained in the meteorological section of the ICAO Regional Air Navigation Plan , and should conform to the standards and recommended practices, including the desirable accuracy of observations, promulgated in ICAO Annex 3 Meteorological Service for International Air Navigation. b. Routine and selected special reports are exchanged between meteorological offices in the METAR or SPECI code forms prescribed by the World Meteorological Organisation.		
3. Aerodrome Forecasts (TAFS):		
a. The aerodrome forecast consists of a concise statement of the mean or average meteorological conditions expected at an aerodrome or operating site during a specified period of validity, which is normally not less than nine hours, or more than 24 hours in duration. The forecast includes surface wind, visibility, weather and cloud, and		

A: Rule	B: Summary of comments	C: Reason for change, remarks
expected changes of one or more of these elements during the period. Additional elements may be included as agreed between the meteorological authority and the operators concerned. Where these forecasts relate to offshore installations, barometric pressure and temperature should be included to facilitate the planning of helicopter landing and take-off performance.		
b. Aerodrome forecasts are most commonly exchanged in the TAF code form, and the detailed description of an aerodrome forecast is promulgated in the ICAO Regional Air Navigation Plan and also in ICAO Annex 3 Meteorological Service for International Air Navigation, together with the operationally desirable accuracy elements. In particular, the observed cloud height should remain within ±30% of the forecast value in 70% of cases, and the observed visibility should remain within ±30% of the forecast value in 80% 0f cases.		
4. Landing Forecasts (TRENDS):		
a. The landing forecast consists of a concise statement of the mean or average meteorological conditions expected at an aerodrome or operating site during the two-hour period immediately following the time of issue. It contains surface wind, visibility, significant weather and cloud elements, and other significant information, such as barometric pressure and temperature, as may be agreed between the meteorological authority and the operators		

A: Rule	B: Summary of comments	C: Reason for change, remarks
concerned.		
b. The detailed description of the landing forecast is promulgated in the ICAO Regional Air Navigation Plan and also in ICAO Annex 3 Meteorological Service for International Air Navigation, together with the operationally desirable accuracy of the forecast elements. In particular, the value of the observed cloud height and visibility elements should remain within +/-30% of the forecast values in 90% of the cases.		
c. Landing forecasts most commonly take the form of routine or special selected meteorological reports in the METAR code, to which either the code words "NOSIG", i.e. no significant change expected; "BECMG" (becoming), or "TEMPO" (temporarily), followed by the expected change, are added. The two-hour period of validity commences at the time of the meteorological report.		
5. When operating off shore, any spare payload capacity should be used to carry additional fuel if it would facilitate the use of an onshore alternate.		
AMC OPS.GEN.165.A Noise abatement		
NOISE ABATEMENT PROCEDURES - AEROPLANES	1 IA : Request to add a statement that NAP should only be applied when noise benefits can be	Not accepted. NAP should be common to all aerodromes so that procedures are standard, and always used except on occasions

A: Rule	**B: Summary of comments**	**C: Reason for change, remarks**
	expected; 1 IS: Request to insert ICAO PANS-OPS (Doc 8168), Volume I, Part V, Chapter 2, 2.1.3. and PANS-ATM (Doc 4444) Chapter 7, 7.2.5.; 1 IS: Request to re-align with EU-OPS 1.235 at the level of hard law;	when safety considerations justify dispensing with NAP. Not accepted. A reference is made in CAT.OP.165; text not changed for legal clarity. Not accepted. The objective requirement is in the IR. This AMC outlines how the objective may be met.
1. The operator's noise abatement procedures for departure and arrival/approach for each aircraft type, which should be designed to be simple and safe to operate with no significant increase in crew workload during critical phases of flight.		
2. A pilot-in-command should follow noise abatement procedures whenever they would not have a detrimental effect on aircraft safety.		
GM OPS.GEN.165.A Noise abatement		
NOISE ABATEMENT PROCEDURES - COMPLEX MOTOR-POWERED AEROPLANES – COMMERCIAL AIR TRANSPORT	1 IS: Request to re-align with EU-OPS 1.235 at the level of hard law;	Partially accepted. Realigned with EU-OPS, but as AMC1-CAT.OP.120.A
1. For each aeroplane type only two departure procedures should be defined, in accordance with Part I Section 7 of ICAO PANS-OPS Volume 1 (Doc 8168-OPS/611) , as follows:		

A: Rule	B: Summary of comments	C: Reason for change, remarks
a. Noise Abatement Departure Procedure one (NADP 1) designed to meet the close-in noise abatement objective; b. Noise Abatement Departure Procedure two (NADP 2) designed to meet the distant noise abatement objective; c. In addition, each NADP climb profile can only have one sequence of actions.		
2. This GM addresses only the vertical profile of the departure procedure. Lateral track has to comply with the Standard Instrument Departure (SID).	1 INDIV: Request to consider that there are more types of departure;	Not relevant. Text aligned with EU-OPS.
3. "Climb profile" means the vertical path of the NADP as it results from the pilot's actions (engine power reduction, acceleration, slats/flaps retraction).	1 IA: Request to add "height/altitude"	Not accepted. Text aligned with EU-OPS.
4. "Sequence of actions" means the order and the timing in which these pilot's actions are done.		
5. Example: For a given aeroplane type, when establishing the distant NADP, an operator should choose either to reduce power first and then accelerate, or to accelerate first and then wait until slats/flaps are retracted before reducing power. The two methods constitute two different sequences of actions. For an aeroplane type, each of the two departure climb profiles may be defined by: a. one sequence of actions (one for close-in, one for distant);	1 MS: (5)(c) Request to specify the level-off altitude; 1 IS: request to recognise	Text not changed since all altitudes are defined;

A: Rule	B: Summary of comments	C: Reason for change, remarks
b. two Above Aerodrome Level (AAL) altitudes/heights: c. the altitude of the first pilot's action (generally power reduction with or without acceleration). This altitude should not be less than 800 ft AAL; or d. the altitude of the end of the noise abatement procedure. This altitude should usually not be more than 3 000 ft AAL.	performance constraints of high performance light jet aeroplanes	May be considered for a future rulemaking task.
These two altitudes may be runway specific when the aeroplane Flight Management System (FMS) has the relevant function which permits the crew to change thrust reduction and/or acceleration altitude/height. If the aeroplane is not FMS equipped or the FMS is not fitted with the relevant function, two fixed heights should be defined and used for each of the two NADPs.		
AMC OPS.GEN.170 Minimum terrain clearance altitudes	1 IS: Request to delete this AMC since it might lead to confusion;	Not accepted. Text aligned with EU-OPS.
GENERAL Commercially available information specifying minimum terrain clearance altitudes may be used.		
AMC OPS.GEN.175 Minimum flight altitudes		
COMMERCIAL OPERATIONS OTHER THAN COMMERCIAL AIR TRANSPORT	1 IS: suggestion that rule was intended only for offshore ops and generalisation has made it obscure. Request to move to specific offshore	Not CAT. To be moved to Part-SPO.

A: Rule	B: Summary of comments	C: Reason for change, remarks
	applicability.	
1. When specifying minimum flight altitudes, the operator should take account of AMC OPS.CAT.170.		
2. When specifying minimum altitudes for operations that can only be performed below the minimum altitudes, it should be taken into account that the aircraft: a. should not be flown over congested areas; and b. should not expose persons or property on the surface to risk of injury or damage.		
3. Due consideration should be given to environmental factors, such as noise exposure.		
4. Procedures should be developed based on a risk assessment in accordance with OPS.COM.270 giving due regard to factors, such as: a. type of operation; b. terrain to be overflown; c. obstacle situation; d. weather conditions, visibility, wind, turbulence; e. lighting conditions; f. crew experience; g. crew familiarity with the area;		

A: Rule	B: Summary of comments	C: Reason for change, remarks
h. crew training; i. aircraft performance; j. number of persons on board; and k. any attached or underslung equipment or load.		
5. Following the risk assessment, the Operations Manual (OM) should include Standard Operating Procedures (SOPs), such as: a. method of operational control of such operations; b. crew minimum experience; c. flight planning; d. pre-survey of the route and/or take-off/landing site; e. weather limitations; f. minimum altitudes; g. performance; h. (safe) forced landing areas; i. navigation; and j. personal protective equipment.		
GM OPS.GEN.175 Minimum flight altitudes		
DESCENDING BELOW SPECIFIED MINIMUM FLIGHT ALTITUDES		

A: Rule	B: Summary of comments	C: Reason for change, remarks
1. The operator may have to obtain permission from the authority of the State in which it intends to conduct operations involving flights below minimum altitudes.	1 IS: Request to clarify how an approval could be obtained from the State overflown;	By contacting the NAA.
2. The State overflown may specify procedures for certain commercial operations (e.g. helicopter operations or photo-flights) or flight instruction (e.g. training of emergency landings) which allow the operator or the approved training organisation to descend below the specified minimum flight altitudes.		
AMC OPS.GEN.180.H Routes and areas of operation		
HELICOPTER COASTAL TRANSIT OPERATIONS – COMMERCIAL AIR TRANSPORT For helicopters operated in Performance Class 3 and conducting coastal transit operations, the width of the coastal corridor and the equipment carried, should be consistent with the conditions prevailing at the time.		
GM OPS.GEN.180.H Routes and areas of operation		
HELICOPTER COASTAL TRANSIT OPERATIONS – COMMERCIAL AIR TRANSPORT		
1. A helicopter operating overwater in Performance Class 3 has to have certain equipment fitted. This equipment varies with the distance from land that the helicopter is expected to operate.		

A: Rule	**B: Summary of comments**	**C: Reason for change, remarks**
The aim of this guidance material is to discuss that distance, bring into focus what fit is required and to clarify the operator's responsibility, when a decision is made to conduct coastal transit operations.		
2. In the case of operations north of 45N or south of 45S, the coastal corridor facility may or may not be available in a particular state, as it is related to the State definition of open sea area as described in the definition of hostile environment.		
3. Where the term coastal transit is used, it means the conduct of operations overwater within the coastal corridor in conditions where there is reasonable expectation that; the flight can be conducted safely in the conditions prevailing; and, following an engine failure, a safe forced landing and successful evacuation can be achieved; and survival of the crew and passengers can be assured until rescue is effected.		
4. Coastal corridor is a variable distance from the coastline to a maximum distance corresponding to three minutes flying at normal cruising speed.		
5. Establishing the width of the coastal corridor:		
a. The distance from land of coastal transit, is defined the boundary of a corridor that extends from the land, to a maximum distance of up to three minutes at normal cruising speed (approximately five to six nm). Land in this context includes sustainable ice and, where the coastal region includes islands, the surrounding waters may be		

A: Rule	B: Summary of comments	C: Reason for change, remarks
included in the corridor and aggregated with the coast and each other. Coastal transit need not be applied to inland waterways, estuary crossing or river transit: i. In some areas, the formation of ice is such that it can be possible to land, or force land, without hazard to the helicopter or occupants. The operator may regard the definition of the "land" extends to these areas. ii. In view of the fact that such featureless and flat white surfaces could present a hazard and could lead to white-out conditions, the definition of land does not extend to flights over ice fields in OPS.CAT.410(b)(2)(ii) and OPS.CAT.418.H.		
b. The width of the corridor is variable from not safe to conduct operations in the conditions prevailing, to the maximum of three minutes wide. A number of factors will, on the day, indicate if it can be used - and how wide it can be. These factors will include but not be restricted to: i. the meteorological conditions prevailing in the corridor; ii. the instrument fit of the aircraft; iii. the certification of the aircraft - particularly with regard to floats; iv. the sea state; v. the temperature of the water; vi. the time to rescue; and		

A: Rule	B: Summary of comments	C: Reason for change, remarks
vii. the survival equipment carried.		
These can be broadly divided into the following three functional groups: A. Those which meet the requirement for safe flying – i. and ii; B. Those which meet the requirement for a safe forced landing and evacuation – i., ii., iii. and iv; C. Those which meet the requirement for survival following a forced landing and successful evacuation – i., iv., v., vi. and vi;		
6. Requirement for safe flying: a. It is generally recognised that when flying out of sight of land in certain meteorological conditions, such as occur in high pressure weather patterns (goldfish bowl - no horizon, light winds and low visibility), the absence of a basic panel (and training) can lead to disorientation. In addition, lack of depth perception in these conditions demands the use of a radio altimeter with an audio voice warning as an added safety benefit - particularly when autorotation to the surface of the water may be required. b. In these conditions a helicopter, without the required instruments and radio altimeter, should be confined to a corridor in which a pilot can maintain reference using the visual cues on the land.		

A: Rule	**B: Summary of comments**	**C: Reason for change, remarks**
7. Requirement for a safe forced landing and evacuation: a. Weather and sea state both affect the outcome of an autorotation following an engine failure. It is recognised that the measurement of sea state is problematical and when assessing such conditions, good judgement has to be exercised by the operator and the commander. b. Where floats have been certificated only for emergency use (and not for ditching), operations should be limited to those sea states which meet the requirement for such use - where a safe evacuation is possible.		
(Ditching certification requires compliance with a comprehensive number of requirements relating to rotorcraft water entry, flotation and trim, occupant egress and occupant survival. Emergency flotation systems, generally fitted to smaller CS-27 rotorcraft, are approved against a broad requirement that the equipment should perform its intended function and not hazard the rotorcraft or its occupants. In practice, the most significant difference between ditching and emergency flotation systems is substantiation of the water entry phase. Ditching requirements call for water entry procedures and techniques to be established and promulgated in the AFM. The fuselage/flotation equipment should thereafter be shown to be able to withstand loads under defined water entry conditions which relate to these procedures. For emergency flotation equipment, there is no requirement to define the water entry technique and no specific conditions defined for the structural substantiation.)		
8. Requirements for survival:		

A: Rule	B: Summary of comments	C: Reason for change, remarks
a. Survival of crew members and passengers, following a successful autorotation and evacuation, is dependant on the clothing worn, the equipment carried and worn, the temperature of the sea and the sea state (see GM OPS.CAT.H.426). Search and rescue response/capability consistent with the anticipated exposure should be available before the conditions in the corridor can be considered non-hostile. b. Coastal Transit can be conducted (including north of 45N and south of 45S - when the definition of open sea areas allows) provided the requirements of GM OPS.GEN.180.H 7. and 8. are met and the conditions for a non-hostile coastal corridor are satisfied.		
AMC1 OPS.GEN.185 Meteorological conditions		
CONTINUATION OF A FLIGHT In the case of in-flight re-planning, continuation of a flight refers to the point from which a revised flight plan applies.	1 MS: Suggest explanatory text appropriate to GM, not AMC	Accepted. Included in IR. CAT.OP.245(a)(2).
AMC2 OPS.GEN.185 Meteorological conditions	1 IS: Request to delete this AMC and/or re-align with EU-OPS;	Not accepted. Text not changed for more legal certainty;
EVALUATION OF METEOROLOGICAL CONDITIONS Pilots should carefully evaluate the available meteorological information relevant to the proposed flight, such as applicable surface observations, temperatures aloft, terminal and area forecasts, AIRMETs, SIGMETs, and pilot reports. The ultimate	1 INDIV: Request to add "…winds aloft";	Accepted. Text changed for safety reasons;

A: Rule	B: Summary of comments	C: Reason for change, remarks
decision whether, when, and where to make the flight rests with the pilot-in-command. A pilot also should continue to re-evaluate changing weather conditions.		
AMC3 OPS.GEN.185 Meteorological conditions		
GENERAL – COMMERCIAL AIR TRANSPORT		
In addition to AMC 1 and 2 OPS.GEN.185, a flight according to Instrument Flight Rules (IFR) should only be continued beyond: 1. the decision point when using the reduced contingency fuel procedure; or 2. the pre-determined point when using the pre-determined point procedure,		
when available information indicates that the expected weather conditions at the time of arrival at the destination and/or required alternate aerodromes are at, or above, the applicable aerodrome operating minima.		
AMC OPS.GEN.190.B Take-off conditions		
FACILITIES AT THE TAKE-OFF SITE – BALLOONS At the take-off site an anemometer should be provided by the operator.		

A: Rule	B: Summary of comments	C: Reason for change, remarks
AMC OPS.GEN.195 Approach and landing conditions		
LANDING DISTANCE/FATO SUITABILITY The in-flight determination of the landing distance/FATO suitability should be based on the latest available report, preferably not more than 30 minutes before the expected landing time.	1 INDIV: Request to clarify what "suitability" means;	Accepted. Text changed to make it clear that operator should provide criteria for flight crew to determine if a landing attempt is acceptable in prevailing conditions.
AMC OPS.GEN.200 Commencement and continuation of approach		
GENERAL		
The RVR should not be less than the applicable minima.		
Where RVR is not available, RVR values may be derived by converting the reported visibility (CMV) in accordance with AMC11 OPS.GEN.150.		
3. If the MDA/H is above 500 ft above the aerodrome, the operator should establish an altitude/height, below which the approach should not be continued if the RVR/CMV is less than the applicable minima. This altitude/height should be at or above MDA/H + 500 ft but not above the FAF altitude/height.		
4. The touchdown zone RVR is always prevailing over the other RVR values. If reported and relevant, the mid point and stop		

A: Rule	B: Summary of comments	C: Reason for change, remarks
end RVR are also controlling. The minimum RVR should be at least: a. 125 m for the mid-point; or b. the RVR required for the touchdown zone; and c. 75 m for the stop-end.		
For aeroplanes equipped with a rollout guidance or control system, the minimum RVR value for the mid-point is 75 m. 'Relevant' means that part of the runway used during the high speed phase of the landing down to a speed of approximately 60 knots.		
AMC1 OPS.GEN.205 Fuel and oil supply	1 IS: Request to review the objective requirement of the AMC and the prescriptive requirement of the rule;	Accepted. Alignment with EU-OPS establishes an objective requirement in the IR, and more detailed and prescriptive guidance in AMC.
FUEL PLANNING – NON-COMMERCIAL OPERATIONS		
1. In computing the fuel and oil required, the following should be considered: a. Meteorological conditions forecast; b. Expected air traffic control routings and traffic delays; c. For IFR flight, one instrument approach at the destination aerodrome, including a missed approach; d. The procedures for loss of pressurisation, where	1 INDIV: Add reference to altitude restrictions	Not accepted. Altitude restrictions implicit in departure routing.

A: Rule	B: Summary of comments	C: Reason for change, remarks
applicable, or failure of one power-unit while en route; e. Any other conditions that may delay the landing of the aircraft or increase fuel and/or oil consumption.		
2. Nothing precludes amendment of a flight plan in-flight, in order to re-plan the flight to another destination, provided that the all requirements can be complied with from the point where the flight is re-planned.		
AMC2 OPS.GEN.205.B Fuel and oil supply		
FUEL PLANNING – BALLOONS – COMMERCIAL AIR TRANSPORT		
In addition to AMC2 B OPS.GEN.205, for flights conducted in accordance with visual flight rules, reserve fuel (gas or ballast) should not be less than to allow: 1. 45 minutes flight in mountainous areas; or 2. One-hour flight if the take-off is at night.		
AMC3 OPS.GEN.205 Fuel and oil supply		
RESERVE FUEL - COMMERCIAL OPERATIONS OTHER THAN COMMERCIAL AIR TRANSPORT		
1. Notwithstanding AMC3 OPS.GEN.205.A and AMC4 OPS.GEN.205.H for flights remaining within 25 NM of the aerodrome/operating site of departure and with operating flight		

A: Rule	B: Summary of comments	C: Reason for change, remarks
crew on board only, reserve fuel should not be less than: a. for aeroplanes, 20 minutes fuel at normal cruising altitude; and b. for helicopters, 10 minutes fuel at best range speed.		
2. The operator should demonstrate to the competent authority that the amount of reserve fuel in accordance with 1 is essential for carrying out a specialised task.		
3. The operator should specify in the OM: a. the type of activity where such reduced reserve fuel may be used; b. methods of reading and calculating the remaining fuel; and c. SOPs.		
4. Refuelling facilities should be available at the aerodrome/operating site.		
5. Refuelling should be performed between each flight.		
AMC4 OPS.GEN.205 Fuel and oil supply		
REFUELLING/DEFUELLING PROCEDURES - COMMERCIAL OPERATIONS OTHER THAN COMMERCIAL AIR TRANSPORT		

A: Rule	B: Summary of comments	C: Reason for change, remarks
1. The operator should establish refuelling/defuelling procedures specifying: a. the fuelling sites and equipment that may be used for fuelling the aircraft; b. the fuel quality for fuelling the aircraft; c. fire precautions and preparedness; d. the transport and storage of fuel in the operators care according to established standards; e. fuelling with engines/rotors running, if applicable; and f. in-flight refuelling, if applicable.		
2. These procedures should take into account the minimisation of fire hazards and adequate protection of the natural environment.		
AMC OPS.GEN.210 Refuelling with passengers embarking, on board or disembarking	1 IA: Request to re-align with §7c of Annex IV to (EC)216/2008, especially (1)(b)(ii) and (2); 1 MS: Request to put this material in the rule; 1 IS: Re-align with EU-OPS;	Not accepted. Provisions of the BR are not repeated in an IR or AMC material for legal reasons. Not accepted. The IR refers to the need for precautions, which are described in the AMC. Accepted. Text aligned with EU-OPS.
GENERAL	1 IS: Request to prohibit activities like cleaning or catering while re-	Not accepted: Text is aligned with EU/JAR-OPS. Incident statistics

A: Rule	B: Summary of comments	C: Reason for change, remarks
	/defueling because it poses a risk during evacuation; 1 INDIV. : Suggestion to prohibit defueling with PAX;	show a low frequency of fuelling-related incidents. Usually only cleaning and catering staff are on board in addition to crew during these activities. Not accepted. Defuelling occurs very infrequently, and very rarely with passengers on board. No clear safety benefit.
1. Whenever applicable, the following precautions should be taken:		
a. Fire fighting facilities of the appropriate scale should be positioned so as to be immediately available in the event of a fire, when using operating sites;		
b. For aeroplanes: i. One qualified person should remain at a specified location during fuelling operations with passengers on board. This qualified person should be capable of handling emergency procedures concerning fire protection and fire-fighting, handling communications and initiating and directing an evacuation; ii. A two-way communication should be established and should remain available by the aeroplane's inter-communication system or other suitable means between the personnel involved in the operation supervising the refuelling and the pilot-in-command	1 INDIV: (b)(ix) statement that this provision does not preclude the use of stairs; 1 INDIV: Request to consider that there are aircraft types that do not have a two way intercom system; 1 INDIV. : Request to specify "sufficient" and "qualified personnel"; 1 INDIV: Risk assessment required?	Accepted. Text changed accordingly. Not accepted. Covered by "other suitable means" Not accepted The operator is best placed to determine numbers and qualification requirements This could be subject to a risk

A: Rule	B: Summary of comments	C: Reason for change, remarks
or other qualified personnel on board the aeroplane; iii. Crew, staff and passengers should be warned that re/defuelling will take place; iv. 'Fasten Seat Belts' signs should be off; v. 'NO SMOKING' signs should be on, together with interior lighting to enable emergency exits to be identified; vi. Passengers should be instructed to unfasten their seat belts and refrain from smoking; vii. Sufficient qualified personnel or the minimum required number of cabin crew, as applicable, should be on board and be prepared for an immediate emergency evacuation; viii. If the presence of fuel vapour is detected inside the aeroplane, or any other hazard arises during re/defuelling, fuelling should be stopped immediately; ix. The ground area beneath the exits intended for emergency evacuation and slide deployment areas should be kept clear; x. Provision should be made for a safe and rapid evacuation;	1 MS: Precautions should be specified in IR 1 INDIV: Clarification of necessity to deploy stairs or open emergency exits, due to possible inconsistencies in application by different States	assessment Not accepted. The IR requires precautions which the AMC describes. Text deleted.
c. For helicopters: i. Door(s) on the refuelling side of the helicopter should remain closed; ii. Door(s) on the non-refuelling side of the helicopter		

A: Rule	B: Summary of comments	C: Reason for change, remarks
should remain open, weather permitting; iii. Sufficient personnel should be immediately available to move passengers clear of the helicopter in the event of a fire. iv. Sufficient qualified personnel should be on board and be prepared for an immediate emergency evacuation; v. If the presence of fuel vapour is detected inside the helicopter, or any other hazard arises during re/defuelling, fuelling should be stopped immediately; vi. The ground area beneath the exits intended for emergency evacuation and slide deployment areas should be kept clear; vii. Provision should be made for a safe and rapid evacuation.		
2. When re/defuelling with passengers on board, ground servicing activities and work inside the aircraft, such as catering and cleaning, should be conducted in such a manner that they do not create a hazard and that the aisles and emergency doors are unobstructed.		
3. The deployment of integral aircraft stairs or the opening of emergency exits as a prerequisite to refuelling is not necessarily required.		
GM1 OPS.GEN.210 Refuelling with passengers embarking, on		

A: Rule	B: Summary of comments	C: Reason for change, remarks
board or disembarking		
REFUELLING/DEFUELLING WITH WIDE-CUT FUEL	1 IS: Suggest prohibition of this with pax on board or disembarking.	Accepted. CAT.OP.195 aligned with EU-OPS.
1. ‘Wide-cut fuel’ (designated JET B, JP-4 or AVTAG) is an aviation turbine fuel that falls between gasoline and kerosene in the distillation range and consequently, compared to kerosene (JET A or JET A1), it has the properties of higher volatility (vapour pressure), lower flash point and lower freezing point.		
2. Wherever possible, an operator should avoid the use of wide-cut fuel types. If a situation arises such that only wide-cut fuels are available for refuelling/defuelling, operators should be aware that mixtures of wide-cut fuels and kerosene turbine fuels can result in the air/fuel mixture in the tank being in the combustible range at ambient temperatures. The extra precautions set out below are advisable to avoid arcing in the tank due to electrostatic discharge. The risk of this type of arcing can be minimised by the use of a static dissipation additive in the fuel. When this additive is present in the proportions stated in the fuel specification, the normal fuelling precautions set out below are considered adequate.		
3. Wide-cut fuel is considered to be “involved” when it is being supplied or when it is already present in aircraft fuel tanks.		
4. When wide-cut fuel has been used, this should be recorded in the technical log. The next two uplifts of fuel should be treated		

A: Rule	B: Summary of comments	C: Reason for change, remarks
as though they too involved the use of wide-cut fuel.		
5. When refuelling/defuelling with turbine fuels not containing a static dissipater, and where wide-cut fuels are involved, a substantial reduction on fuelling flow rate is advisable. Reduced flow rate, as recommended by fuel suppliers and/or aeroplane manufacturers, has the following benefits: a. It allows more time for any static charge build-up in the fuelling equipment to dissipate before the fuel enters the tank; b. It reduces any charge which may build up due to splashing; c. Until the fuel inlet point is immersed, it reduces misting in the tank and consequently the extension of the flammable range of the fuel.		
6. The flow rate reduction necessary is dependent upon the fuelling equipment in use and the type of filtration employed on the aeroplane fuelling distribution system. It is difficult, therefore, to quote precise flow rates. Reduction in flow rate is advisable whether pressure fuelling or over-wing fuelling is employed.		
7. With over-wing fuelling, splashing should be avoided by making sure that the delivery nozzle extends as far as practicable into the tank. Caution should be exercised to avoid damaging bag tanks with the nozzle.		

A: Rule	B: Summary of comments	C: Reason for change, remarks
GM2 OPS.GEN.210 Refuelling with passengers embarking, on board or disembarking		
REFUELLING/DEFUELLING PROCEDURES - COMMERCIAL OPERATIONS OTHER THAN COMMERCIAL AIR TRANSPORT		
The OM should contain procedures, including the following: 1. Fuel quality: a. Documentation of fuel received; b. Sampling; c. Fuel grade; d. Installation, storage and dispensing processes; e. Labelling; f. Checking and testing, as appropriate, of fuel specification, age and contamination. 2. Fuelling while the engines are running: a. Safety precautions; b. One pilot at the controls. 3. Transport and storage of fuel: a. Operators fuel installation; b. Mobile storage (drums, cans, tanks); c. Transportation in, on or under the aircraft (dangerous goods).	4 MS; 1 IS: Clarification of 1.c. to relate to DG requirements for fuel transport other than in fuel tanks.	Transferred to Part–SPO.

A: Rule	B: Summary of comments	C: Reason for change, remarks
4. Fuelling safety: a. Electrical bonding; b. Public protection; c. Control of access to storage areas; d. Fire safety in fuel farm and storage areas; e. Fire safety in mobile fuellers, fuelling pits, and fuelling cabinets; f. Training of fuelling personnel in fire safety; g. Fire code. 5. Environment: a. Precautionary measures; b. Fuel spills; c. Clean up; d. Reporting;		
GM3 OPS.GEN.210 Refuelling with passengers embarking, on board or disembarking	1 IS: Request to delete this GM since Annex 14 does not address flight operations, but design of aerodromes;	The GM has been deleted.
AIRCRAFT REFUELLING PROVISIONS AND GUIDANCE ON SAFE REFUELLING PRACTICES Provisions concerning aircraft refuelling are contained in Volume I (Aerodrome Design and Operations) of the ICAO Annex 14		

A: Rule	B: Summary of comments	C: Reason for change, remarks
(Aerodromes) , and guidance on safe refuelling practices is contained in Parts 1 and 8 of the ICAO Airport Services Manual (Doc9137).		
GM OPS.GEN.220.B Operational limitations - balloons		
BALLOON NIGHT FLIGHT The risk of collision with overhead lines is considerable and cannot be overstated. The risk is considerably increased during night flights in conditions of failing light and visibility when there is increasing pressure to land. A number of incidents have occurred in the late evening in just such conditions, and may have been avoided had an earlier landing been planned. It is intended by the rule that night landings for this reason shall not be allowed.		
Subpart B - Commercial Air Transport		
Section II - Operational procedures		
AMC1 OPS.CAT.110 Carriage of special categories of passengers		
GENERAL		

A: Rule	B: Summary of comments	C: Reason for change, remarks
1. Special categories of passengers should not be allocated, nor occupy, seats where their presence could: a. impede the crew in their duties; b. obstruct access to emergency equipment; or c. impede the emergency evacuation of the aircraft.	1 INDIV: No indication is given to avoid seating positions adjacent to emergency exits; 1 INDIV: Conflict with Regulation (EC) 300/2008, because passengers mentioned under (4) and (5) are already classified there as "potentially disruptive passengers";	This is covered by (1)(c);
2. When carrying special categories of passengers, the following should be taken into account: a. The number and category of those persons; b. The total number of passengers carried compared to the seating capacity of the aircraft configuration; c. The number and composition of the crew able to assist special categories of passengers in case of emergencies.	1 INDIV: Concern that the crew member is responsible for PRM evacuation; 2 INDIV: Proposal of the restriction that the number of PRM does not exceed the number of ABP;	This is clarified by (2)(a) and (b), and the revised GM text;
GM OPS.CAT.110 Carriage of special categories of passengers		
GENERAL		
The following persons are those who should be considered as special categories of passengers, requiring special conditions, assistance and/or devices when carried on a flight:		
1. Person with Reduced Mobility (PRM); this is understood to		

A: Rule	B: Summary of comments	C: Reason for change, remarks
mean a person whose mobility is reduced due to physical incapacity (sensory or locomotory), an intellectual deficiency, age, illness or any other cause of disability;		
2. Children (whether accompanied or not) and infants;	2 INDIV., 1 MS, 1 IS: Definition of children is (a) missing, and (b) classification as "special category of passengers" is inappropriate;	Accepted. A definition of "children" will be given in Annex I – Definitions.
3. Passengers with animals;		
4. Deportees or inadmissible passengers;		
5. Prisoners in custody.		
AMC2 OPS.CAT.110.B Carriage of special categories of passengers		
CARRIAGE OF CHILDREN AND PERSONS WITH REDUCED MOBILITY - BALLOONS		
An operator may exclude children and/or PRMs from transportation in a balloon, when:		
1. their presence may impede: a. the crew in their duties; b. access to emergency equipment; or c. the emergency evacuation of the balloon; and/or		

A: Rule	B: Summary of comments	C: Reason for change, remarks
2. those persons are: a. unable to take a proper brace position; or b. smaller than the height of the basket plus 20 cm.		
AMC1 OPS.CAT.120 Stowage of baggage and cargo		
MOTOR-POWERED AIRCRAFT	1 MS: Clarification of the difference between cargo and carry-on-luggage;	Not accepted. It is self-evident that cargo is items not accompanying a passenger that is carried for reward, and hand baggage is items accompanying a passenger in the cabin.
The following should be taken into account to ensure that hand baggage and cargo is adequately and securely stowed:		
1. Each item carried in a passenger compartment should be stowed in a location that is capable of restraining it;		
2. Mass limitations placarded on, or adjacent to, stowages should not be exceeded;		
3. Underseat stowages should only be used when the seat is equipped with a restraint bar and the baggage is of such size that it may adequately be restrained by this equipment;		
4. Items should not be stowed in toilets or against bulkheads that are incapable of restraining articles against movement forwards, sideways or upwards unless the bulkheads carry a		

A: Rule	B: Summary of comments	C: Reason for change, remarks
placard specifying the greatest mass that may be placed there;		
5. Baggage and cargo placed in lockers should be of a size that does not prevent latched doors from being closed securely;		
6. Baggage and cargo should not be placed where it can impede access to emergency equipment;		
7. Checks should be made before take-off, before landing, and whenever the fasten seat belts signs are illuminated or whenever deemed necessary to ensure that baggage is stowed where it cannot impede evacuation from the aircraft or cause injury by movement as may be appropriate to the phase of flight.		
AMC2 OPS.CAT.120 Stowage of baggage and cargo		
CARGO CARRIAGE IN THE PASSENGER COMPARTMENT – MOTOR-POWERED AIRCRAFT	1 MS: suggest retitling to reflect emphasis on stowage.	Accepted. Retitled.
The following should be observed before carrying cargo in the passenger compartment:		
1. Dangerous goods should not be allowed;		
2. For aeroplanes, a mix of passengers and live animals should only be allowed for pets weighing not more than eight kg and guide dogs;	1 INDIV., IA 1x: Replace “guide dogs” with “registered assistance dogs”;	1. & 2. The text is aligned with AMC OPS 1.270

A: Rule	B: Summary of comments	C: Reason for change, remarks
	1 INDIV: request to re-consider the weight restriction for dogs;	
3. The weight of cargo should not exceed the structural loading limits of the floor or seats;		
4. The number/type of restraint devices and their attachment points should be capable of restraining the cargo in accordance with applicable certification specifications;		
5. Cargo should be located such that, in the event of an emergency evacuation, it will not hinder egress nor impair the crew's view.		
AMC OPS.CAT.150.H Operating minima - Helicopter Airborne Radar Approaches (ARAs) for overwater operations		
GENERAL		
1. Before commencing the final approach the pilot-in-command should ensure that a clear path exists on the radar screen for the final and missed approach segments. If lateral clearance from any obstacle will be less than one nm (nautical mile), the pilot-in-command should:		
a. approach to a nearby target structure and thereafter proceed visually to the destination structure; or		

A: Rule	B: Summary of comments	C: Reason for change, remarks
b. make the approach from another direction leading to a circling manoeuvre.		
2. The pilot-in-command should ensure that the cloud ceiling is sufficiently clear above the helideck to permit a safe landing.		
3. Notwithstanding the minima in AMC OPS.CAT.H.150 3.a. and b., the Minimum Descent Height (MDH) should not be less than 50 ft (feet) above the elevation of the helideck.		
a. The MDH for an airborne radar approach should not be lower than: i. 200 ft by day; or ii. 300 ft by night.		
b. The MDH for an approach leading to a circling manoeuvre should not be lower than: i. 300 ft by day; or ii. 500 ft by night.		
4. A Minimum Descent Altitude (MDA) may only be used if the radio altimeter is unserviceable. The MDA should be a minimum of MDH +200 ft and should be based on a calibrated barometer at the destination or on the lowest forecast QNH for the region.		
5. The decision range should not be less than ¾ nm.		

A: Rule	B: Summary of comments	C: Reason for change, remarks
6. The MDA/H for a single-pilot ARA should be 100 ft higher than that calculated using AMC OPS.CAT.H.150 3. and 4. The decision range should not be less than one nm.		
GM OPS.CAT.150.H Operating minima - Helicopter Airborne Radar Approaches (ARAs) for overwater operations		
GENERAL		
1. General:		
a. The helicopter ARA procedure may have as many as five separate segments. These are the arrival, initial, intermediate, final, and missed approach segments. In addition, the requirements of the circling manoeuvre to a landing under visual conditions should be considered. The individual approach segments can begin and end at designated fixes, however, the segments of an ARA may often begin at specified points where no fixes are available.		
b. The fixes, or points, are named to coincide with the associated segment. For example, the intermediate segment begins at the Intermediate Fix (IF) and ends at the Final Approach Fix (FAF). Where no fix is available or appropriate, the segments begin and end at specified points; for example, Intermediate Point (IP) and final approach point (FAP). The order in which this guidance material discusses the segments is the order in which the		

A: Rule	B: Summary of comments	C: Reason for change, remarks
pilot would fly them in a complete procedure: that is, from the arrival through initial and intermediate to a final approach and, if necessary, the missed approach.		
c. Only those segments which are required by local conditions applying at the time of the approach need be included in a procedure. In constructing the procedure, the final approach track, (which should be orientated so as to be substantially into wind) should be identified first as it is the least flexible and most critical of all the segments. When the origin and the orientation of the final approach have been determined, the other necessary segments should be integrated with it to produce an orderly manoeuvring pattern which does not generate an unacceptably high work-load for the flight crew.		
d. Examples of ARA procedures, vertical profile and missed approach procedures are contained in Figures 1 to 5 of GM OPS.CAT.H.150.		
2. Obstacle environment:		
a. Each segment of the ARA is located in an over-water area which has a flat surface at sea level. However, due to the passage of large vessels which are not required to notify their presence, the exact obstacle environment cannot be determined. As the largest vessels and structures are known to reach elevations exceeding 500 ft amsl (above mean sea level), the uncontrolled offshore obstacle		

A: Rule	B: Summary of comments	C: Reason for change, remarks
environment applying to the arrival, initial and intermediate approach segments can reasonably be assumed to be capable of reaching to at least 500 ft amsl. But, in the case of the final approach and missed approach segments, specific areas are involved within which no radar returns are allowed. In these areas the height of wave crests and the possibility that small obstacles may be present which are not visible on radar, results in an uncontrolled surface environment which extends to an elevation of 50 ft amsl.		
b. Under normal circumstances, the relationship between the approach procedure and the obstacle environment is governed according to the concept that vertical separation is very easy to apply during the arrival, initial and intermediate segments, while horizontal separation, which is much more difficult to guarantee in an uncontrolled environment, is applied only in the final and missed approach segments.		
3. Arrival segment:		
The arrival segment commences at the last en-route navigation fix, where the aircraft leaves the helicopter route, and it ends either at the Initial Approach Fix (IAF) or, if no course reversal, or similar manoeuvre is required, it ends at the IF. Standard en-route obstacle clearance criteria should be applied to the arrival segment.		
4. Initial approach segment:		

A: Rule	B: Summary of comments	C: Reason for change, remarks
The initial approach segment is only required if a course reversal, race track, or arc procedure is necessary to join the intermediate approach track. The segment commences at the IAF and on completion of the manoeuvre ends at the IP. The Minimum Obstacle Clearance (MOC) assigned to the initial approach segment is 1 000 ft.		
5. Intermediate approach segment:		
The intermediate approach segment commences at the IP, or in the case of "straight in" approaches, where there is no initial approach segment, it commences at the IF. The segment ends at the FAP and should not be less than two nm in length. The purpose of the intermediate segment is to align and prepare the helicopter for the final approach. During the intermediate segment the helicopter should be lined up with the final approach track, the speed should be stabilised, the destination should be identified on the radar, and the final approach and missed approach areas should be identified and verified to be clear of radar returns. The MOC assigned to the intermediate segment is 500 ft.		
6. Final approach segment:		
a. The final approach segment commences at the FAP and ends at the Missed Approach Point (MAPt). The final approach area, which should be identified on radar, takes the form of a corridor between the FAP and the radar return of the destination. This corridor should not be less		

A: Rule	**B: Summary of comments**	**C: Reason for change, remarks**
than two nm wide in order that the projected track of the helicopter does not pass closer than 1 nm to the obstacles lying outside the area.		
b. On passing the FAP, the helicopter will descend below the intermediate approach altitude, and follow a descent gradient which should not be steeper than 6·5%. At this stage vertical separation from the offshore obstacle environment will be lost. However, within the final approach area the MDA/H, will provide separation from the surface environment. Descent from 1 000 ft amsl to 200 ft amsl at a constant 6·5% gradient will involve a horizontal distance of two nm. In order to follow the guideline that the procedure should not generate an unacceptably high work-load for the flight crew, the required actions of levelling at MDH, changing heading at the Offset Initiation Point (OIP), and turning away at MAPt should not be planned to occur at the same time. Consequently, the FAP should not normally be located at less than four nm from the destination.		
c. During the final approach, compensation for drift should be applied and the heading which, if maintained, would take the helicopter directly to the destination, should be identified. It follows that, at an OIP located at a range of 1·5 nm, a heading change of 10° is likely to result in a track offset of 15° at 1nm, and the extended centreline of the new track can be expected to have a mean position lying some 300 - 400 metres to one side of the destination structure. The safety margin built in to the		

A: Rule	B: Summary of comments	C: Reason for change, remarks
0·75 nm Decision Range (DR) is dependent upon the rate of closure with the destination. Although the air speed should be in the range 60/90 kts (knots) during the final approach, the ground speed, after due allowance for wind velocity, should be no greater than 70 kts.		
7. Missed approach segment:		
a. The missed approach segment commences at the MAPt and ends when the helicopter reaches minimum en-route altitude. The missed approach manoeuvre is a "turning missed approach" which should be of not less than 30° and should not, normally, be greater than 45°. A turn away of more than 45° does not reduce the collision risk factor any further, nor will it permit a closer DR. However, turns of more than 45° may increase the risk of pilot disorientation and, by inhibiting the rate of climb (especially in the case of a One-Engine-Inoperative (OEI) go-around), may keep the helicopter at an extremely low level for longer than is desirable.		
b. The missed approach area to be used should be identified and verified as a clear area on the radar screen during the intermediate approach segment. The base of the missed approach area is a sloping surface at 2·5% gradient starting from MDH at the MAPt. The concept is that a helicopter executing a turning missed approach will be protected by the horizontal boundaries of the missed approach area until vertical separation of more than 130 ft is achieved between the base of the area, and the		

A: Rule	B: Summary of comments	C: Reason for change, remarks
offshore obstacle environment of 500 ft amsl which prevails outside the area.		
c. A missed approach area, taking the form of a 45° sector orientated left or right of the final approach track, originating from a point 5 nm short of the destination, and terminating on an arc three nm beyond the destination, will normally satisfy the requirements of a 30° turning missed approach.		
8. The required visual reference:		
The visual reference required is that the destination should be in view in order that a safe landing may be carried out.		
9. Radar equipment:		
During the ARA procedure colour mapping radar equipment with a 120° sector scan and 2·5 nm range scale selected, may result in dynamic errors of the following order: a. Bearing/tracking error ± 4·5° with 95% accuracy; b. Mean ranging error - 250 metres (m); c. Random ranging error ± 250 m with 95% accuracy.		
Figure 1 of GM OPS.CAT.150.H Arc procedure		

A: Rule	**B: Summary of comments**	**C: Reason for change, remarks**

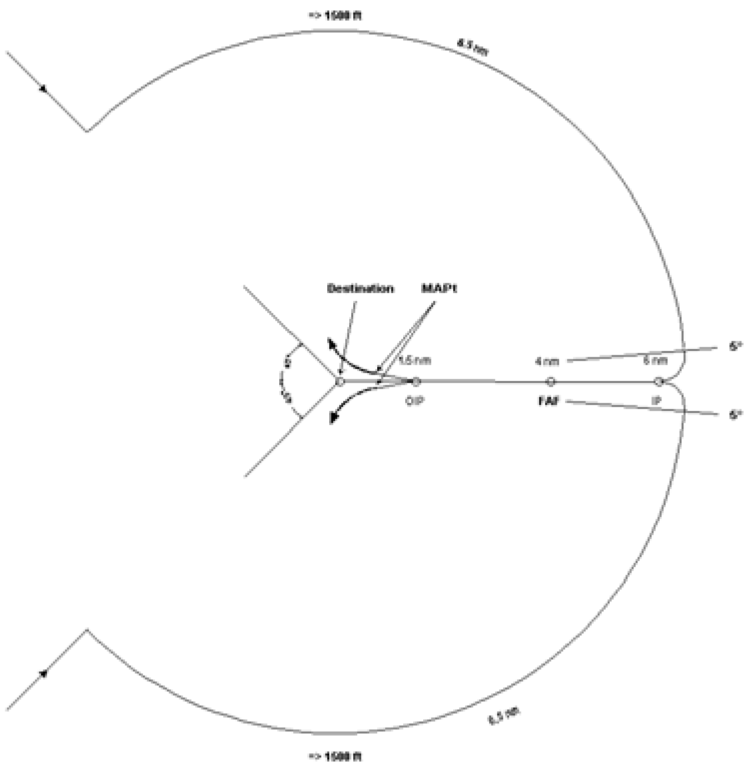



Figure 2 of GM OPS.CAT.150.H Base Turn Procedure – Direct Approach		

A: Rule	B: Summary of comments	C: Reason for change, remarks

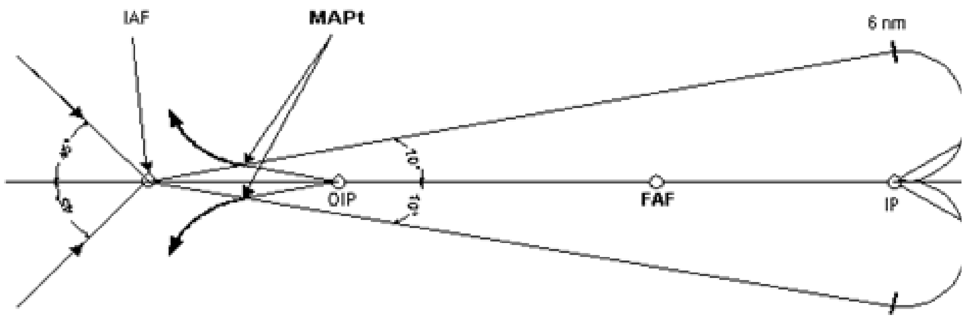



Figure 3 of GM OPS.CAT.150.H Holding Pattern & Race Track Procedure		

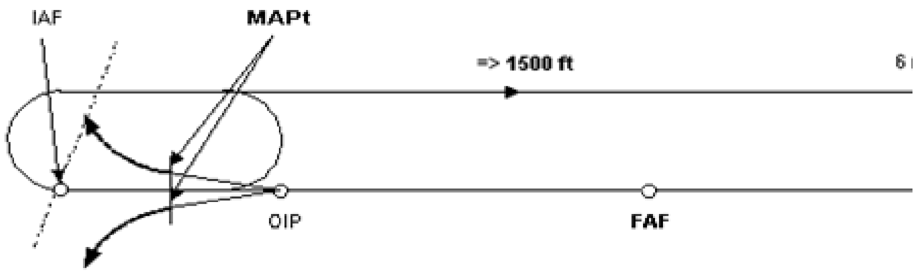



Figure 4 of GM OPS.CAT.150.H Vertical Profile		

A: Rule	B: Summary of comments	C: Reason for change, remarks

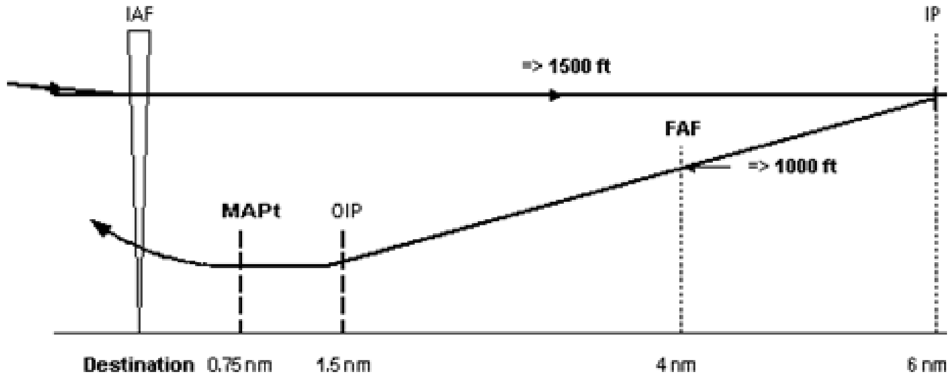
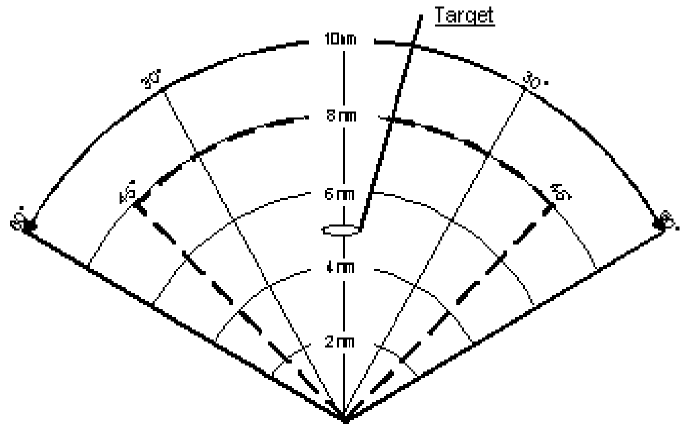



Figure 5 of GM OPS.CAT.150.H Missed Approach Area Left & Right		
		
AMC OPS.CAT.155.A Selection of aerodromes - Aeroplanes		

A: Rule	**B: Summary of comments**	**C: Reason for change, remarks**
APPLICATION OF AERODROME FORECASTS		
(see nested table below)	-	

APPLICATION OF AERODROME FORECASTS (TAF & TREND) TO PRE-FLIGHT PLANNING (ICAO Annex 3 refers)

validity period of the TAF.

b. Application of forecast — The prevailing weather conditions forecast in the initial part of the TAF should be fully applied with the exception of the mean wind

2. APPLICATION OF FORECAST FOLLOWING CHANGE INDICATORS IN TAF AND TREND

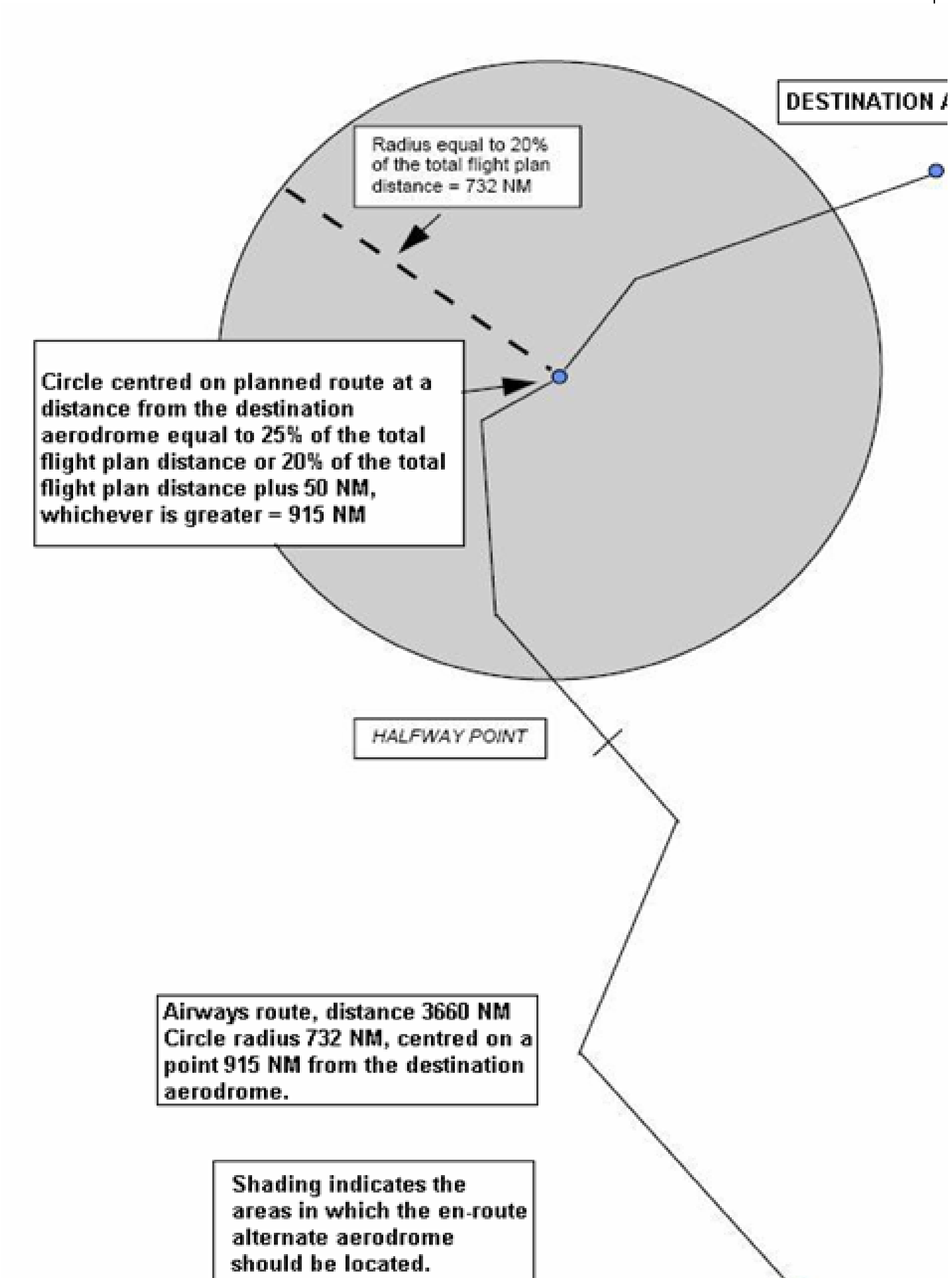
TEMPO (alone), TEMPO FM, TEMPO TL, TEMPO FM…* TL, PROB 30/40 (alone)			PROB TEMPO
Deterioration		Improvement	
Conditions in connection with short-lived weather phenomena e.g.	In connection with e.g. haze, mist, fog, dust/sandstorm, continuous	In any case	Deterioration and Improvement
Not applicable	Applicable	Should be disregarded	Deterioration may be disregarded; Improvement should be disregarded including mean wind and gusts
	Mean wind should be within required limits		
	Gusts may be disregarded		
Mean wind and gusts exceeding required limits may be disregarded			
Applicable if below applicable landing minima			
Mean wind should be within required limits Gusts exceeding crosswind limits should be fully applied			

Note 2: If promulgated aerodrome forecasts do not comply with the requirements of ICAO Annex 3, operators should ensure that guidance in the application of these reports is provided.

A: Rule	B: Summary of comments	C: Reason for change, remarks
(continued table, printed rotated)		
GM OPS.CAT.155.A(a)(2) Selection of aerodromes - Aeroplanes FLIGHT DURATION		
The flying time of six hours to the destination includes planned flights from take-off to landing as well as the duration to the destination from the moment of in-flight re-planning in accordance with AMC1 CAT OPS.GEN.205 3.		

TAF or TREND for AERODROME PLANNED AS:	FM (alone) and BECMG AT:	BECMG (alone), BECMG FM, BECMG TL, BECMG FM..* TL in ...	
	Deterioration and Improvement	Deterioration	Improvement
DESTINATION at ETA ± 1 hr	Applicable from the start of the ...	Applicable from the time of start of change	
ALTERNATE ...			
ALTERNATE ...	Mean wind should be within required limits		
ENROUTE ALTERNATE at ETA ± 1 hr	Gusts may be disregarded		
ENROUTE ALTERNATE at earliest/latest ...	Applicable from the time of start of change	Applicable from the time of start of change	Applicable from the time of end of ...

A: Rule	B: Summary of comments	C: Reason for change, remarks
AMC OPS.CAT.155.A(b) Selection of aerodromes - Aeroplanes		
LOCATION OF THE 3% EN-ROUTE ALTERNATE (ERA) AERODROME	1 INDIV: Request to replace this definition by "fuel en-route alternate";	Accepted. The term has been changed to 'fuel ERA'.
The 3% ERA aerodrome should be located within a circle having a radius equal to 20% of the total flight plan distance, the centre of which lies on the planned route at a distance from the destination aerodrome of 25% of the total flight plan distance, or at least 20% of the total flight plan distance plus 50 nm, whichever is greater, all distances are to be calculated in still air conditions (see figure 1 of AMC OPS.CAT.155.A(b)).		
Figure 1 of AMC OPS.CAT.155.A(b) Location of the 3% En-Route Alternate (ERA) aerodrome		

A: Rule	B: Summary of comments	C: Reason for change, remarks
		

A: Rule	B: Summary of comments	C: Reason for change, remarks
GM OPS.CAT.155.A(d) Selection of aerodromes - Aeroplanes		
PLANNING MINIMA		
'Non-precision minima' in Table 1A of OPS.CAT.A.155 means the next highest minimum that is available in the prevailing wind and serviceability conditions; Localiser only approaches, if published, are considered to be 'non precision' in this context. It is recommended that operators wishing to publish tables of planning minima choose values that are likely to be appropriate on the majority of occasions (e.g. regardless of wind direction). Unserviceabilities should, however, be fully taken into account.		
AMC OPS.CAT.156.A(b)(1) Selection of take-off alternate aerodromes - Aeroplanes		
TAKE-OFF ALTERNATE DISTANCE		
1. The OEI cruise speed derived from the Aircraft Flight Manual (AFM) should be based on still air standard conditions and the actual take-off mass.		
2. If the AFM does not contain an OEI cruise speed, the speed to be used for calculations should be the one achieved with the remaining engine(s) set at maximum continuous power.		
AMC OPS.CAT.155.H(a)(1) Selection of aerodromes - Helicopters		

A: Rule	B: Summary of comments	C: Reason for change, remarks
COASTAL AERODROMES		
1. The requirement is applicable to helicopters routing from offshore only and should be based on an individual safety case assessment.		
2. The following should be taken into account:		
a. Suitability of the weather based on the landing forecast for the destination;		
b. The fuel required to meet the instrument flight rules requirements;		
c. Where the destination coastal aerodrome is not directly on the coast it should be:		
i. within a distance that, taking into account the fuel, the helicopter can, at any time after crossing the coastline, return to the coast, descend safely and carry out a visual approach and landing with visual flight rules fuel reserves intact, and		
ii. geographically sited so that the helicopter can, within the Rules of the Air, and within the landing forecast: A. proceed inbound from the coast at 500 ft above ground level and carry out a visual approach and landing; or B. proceed inbound from the coast on an agreed		

A: Rule	B: Summary of comments	C: Reason for change, remarks
route and carry out a visual approach and landing.		
d. Procedures for coastal aerodromes should be based on a landing forecast of at least: i. by day: A cloud base of decision height/minimum decision height + 400 ft, and a visibility of four km (kilometres), or, if descent over the sea is intended, a cloud base of 600 ft and a visibility of four km; and ii. by night: A cloud base of 1 000 ft and a visibility of five km.		
e. The descent to establish visual contact with the surface should take place over the sea or as part of the instrument approach;		
f. Routings and procedures for coastal aerodromes nominated as such should be included in the operations manual;		
g. The minimum equipment list should reflect the requirement for Airborne Radar and Radio Altimeter for this type of operation.		
GM OPS.CAT.155.H(a)(1) Selection of aerodromes - Helicopters		
COASTAL AERODROMES		

A: Rule	**B: Summary of comments**	**C: Reason for change, remarks**
1. The procedures contained in AMC OPS.CAT.H.155(a)(1) are weather-critical. Consequently, a "Landing forecast" conforming to the standards contained in the Regional Air Navigation Plan and ICAO Annex 3 (hereinafter referred to as ICAO Annex 3 Meteorological Service for International Air Navigation) should be used. In particular, the value of the observed cloud height and visibility elements should remain within ±30% of the forecast values in 90% of the cases.		
2. The "Landing forecast" consists of a concise statement of the mean or average meteorological conditions expected at an aerodrome during the two-hour period immediately following the time of issue. It contains surface wind, visibility, significant weather and cloud elements, and may contain other significant information, such as barometric pressure and temperature.		
3. The landing forecast most commonly takes the form of a routine or special selected meteorological report in the METAR code to which a TREND is added. The code words "NOSIG", i.e. no significant change expected; "BECMG" (becoming); or "TEMPO" (temporarily); followed by the expected change, are used. The two-hour period of validity of the forecast commences at the time of the meteorological report.		
AMC OPS.CAT.155.H(c) Selection of aerodromes - Helicopters		
OFFSHORE ALTERNATES		
1. Offshore alternate deck landing environment:		

A: Rule	B: Summary of comments	C: Reason for change, remarks
The landing environment of a helideck that is proposed for use as an offshore alternate should be pre-surveyed and, as well as the physical characteristics, the effect of wind direction and strength, and turbulence established. This information, which should be available to the pilot-in-command at the planning stage and in-flight, should be published in an appropriate form in the operations manual (including the orientation of the helideck) such that the suitability of the helideck for use as an offshore alternate, can be assessed. The alternate helideck should meet the criteria for size and obstacle clearance appropriate to the performance requirements of the type of helicopter concerned.		
2. Performance considerations:		
The use of an offshore alternate is restricted to helicopters which can achieve OEI In Ground Effect (IGE) hover at an appropriate power rating at the offshore alternate. Where the surface of the Offshore alternate helideck, or prevailing conditions (especially wind velocity), precludes an OEI IGE, OEI Out of Ground Effect (OGE) hover performance at an appropriate power rating should be used to compute the landing mass. The landing mass should be calculated from graphs provided in the relevant parts of the operations manual. (When arriving at this landing mass, due account should be taken of helicopter configuration, environmental conditions and the operation of systems which have an adverse effect on performance.) The planned landing mass of the helicopter including crew, passengers, baggage, cargo plus 30 minutes		

A: Rule	B: Summary of comments	C: Reason for change, remarks
Final Reserve fuel, should not exceed the OEI landing mass at the time of approach to the offshore alternate.		
3. Weather considerations:		
a. Meteorological Observations: When the use of an offshore alternate is planned, the meteorological observations at the destination and alternate should be taken by an observer responsible for the provision of meteorological services. (Automatic meteorological observations stations may be used).		
b. Weather Minima: When the use of an offshore alternate is planned, an operator should not select a helideck as a destination or offshore alternate unless the aerodrome forecast, indicates that, during a period commencing one hour before and ending one hour after the expected time of arrival at the destination and offshore alternate, the weather conditions will be at or above the planning minima shown in Table 1 of AMC OPS.CAT.155.H(c).		
Table 1 of AMC OPS.CAT.155.H(c) Planning minima		

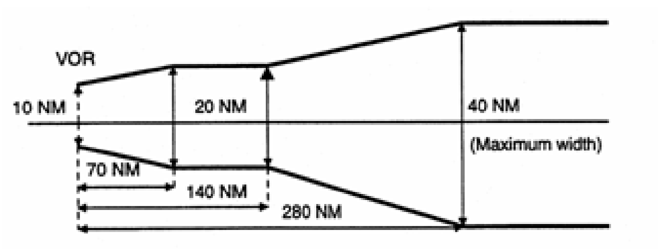
	Day	Night
Cloud Base	600 ft	800 ft

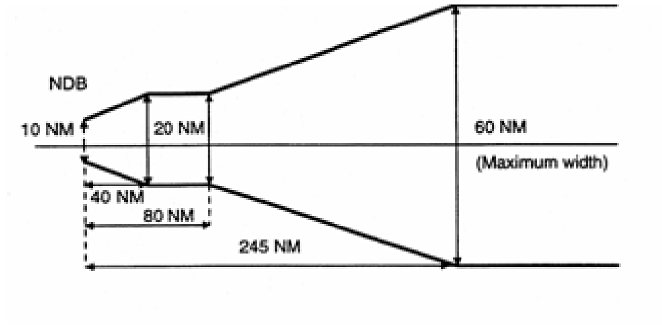
A: Rule	B: Summary of comments	C: Reason for change, remarks
Visibility — 4 km — 5 km c. Conditions of Fog		
Where fog is forecast, or has been observed within the last two hours within 60 nm of the destination or alternate, offshore alternates should not be used.		
4. Actions at Point of No Return:		
Before passing the Point of No Return, which should not be more that 30 minutes from the destination, the following actions should have been completed:		
a. Confirmation that navigation to the destination and offshore alternate can be assured;		
b. Radio contact with the destination and offshore alternate (or master station) has been established;		
c. The landing forecast at the destination and offshore alternate have been obtained and confirmed to be at or above the required minima;		
d. The requirements for OEI landing (see AMC OPS.CAT.155.H(c) 2.) have been checked (in light of the latest reported weather conditions) to ensure that they can be met;		

A: Rule	B: Summary of comments	C: Reason for change, remarks
e. To the extent possible, having regard to information on current and forecast use of the offshore alternate and on conditions prevailing, the availability of the offshore alternate should be guaranteed by the duty holder (the rig operator in the case of fixed installations and the owner in the case of mobiles) until the landing at the destination, or the offshore alternate, has been achieved (or until offshore shuttling has been completed).		
5. Offshore shuttling:		
Provided that the actions in AMC OPS.CAT.155.H(c) 4. have been completed, offshore shuttling, using an offshore alternate, may be carried out.		
GM OPS.CAT.155.H(d) Selection of aerodromes - Helicopters		
PLANNING MINIMA		
'Non-precision minima' in Table 1H of OPS.CAT.155.H means the next highest minimum that is available in the prevailing wind and serviceability conditions; Localiser only approaches, if published, are considered to be 'non precision' in this context. It is recommended that operators wishing to publish tables of planning minima choose values that are likely to be appropriate on the majority of occasions (e.g. regardless of wind direction). Unserviceabilities should, however, be fully taken into account.		

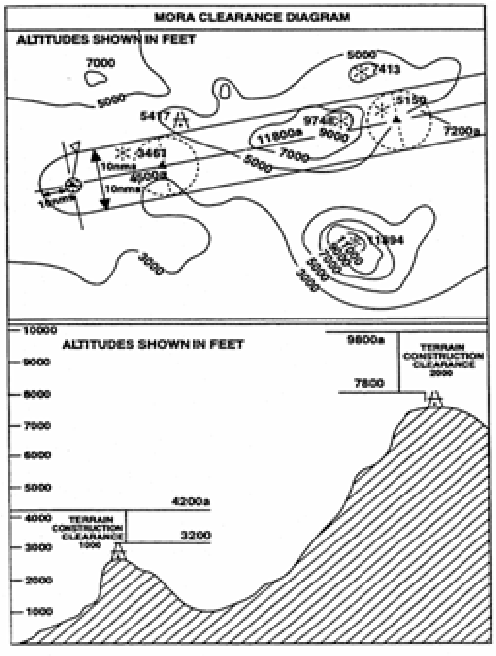
A: Rule	B: Summary of comments	C: Reason for change, remarks
AMC OPS.CAT.170 Minimum terrain clearance altitudes		
MINIMUM FLIGHT ALTITUDES	1 IS: Request to upgrade to IR, since it is a list of objective requirements;	Not accepted. This is a list of factors and considerations to be used when calculating MFAs and AMC is appropriate.
1. The operator should take into account the following factors when using a method for specifying minimum flight altitudes: a. The accuracy in which the position of the aircraft can be determined; b. Probable inaccuracies in the altimeter indication; c. Terrain characteristics (e.g. sudden changes in the elevation) along the routes or in the areas where operations are to be conducted; d. The probability of encountering unfavourable meteorological conditions (e.g. severe turbulence and descending air currents); e. Possible inaccuracies in aeronautical charts.	1 INDIV: Request to delete (1)(e), since there is doubt about the relevance of this point;	Not accepted. Such inaccuracies may be significant in poorly charted mountainous areas.
2. When specifying minimum flight altitudes, due consideration should be given to: a. corrections for temperature and pressure variations from standard values; b. ATC requirements; and	1 INDIV: Request to clarify (2)(c), because contingencies are usually unforeseen; 1 IS: Delete c. as contingencies	Text not changed because in the specification of minimum flight altitudes only foreseeable contingencies can be considered; Not accepted. A foreseeable contingency means forecast or foreseen conditions that might

A: Rule	B: Summary of comments	C: Reason for change, remarks
c. any foreseeable contingencies along the planned route.	"unforeseen" by definition.	require greater than minimum MFAs.
GM OPS.CAT.170 Minimum terrain clearance altitudes		
MINIMUM FLIGHT ALTITUDES		
1 The following are examples of some of the methods available for calculating minimum flight altitudes.		
2 KSS Formula:		
a. Minimum Obstacle Clearance Altitude (MOCA).		
i. MOCA is the sum of: A. the maximum terrain or obstacle elevation whichever is highest; plus B. 1 000 ft for elevation up to and including 6 000 ft; or C. 2 000 ft for elevation exceeding 6 000 ft rounded up to the next 100 ft.		
ii. The lowest MOCA to be indicated is 2 000 ft.		
iii. From a VOR station, the corridor width is defined as a borderline starting 5 nm either side of the VOR, diverging four degrees from centreline until a width of 20 nm is reached at 70 nm out, thence paralleling the centreline until 140 nm out, thence again		

A: Rule	B: Summary of comments	C: Reason for change, remarks
diverging four degrees until a maximum width of 40 nm is reached at 280 nm out. Thereafter the width remains constant (see Figure 1 of GM OPS.CAT.170).		
Figure 1 of GM OPS.CAT.170		
		
iv. From a Non-Directional Beacon (NDB), similarly, the corridor width is defined as a borderline starting five nm either side of the NDB diverging seven degrees until a width of 20 nm is reached 40 nm out, thence paralleling the centreline until 80 nm out, thence again diverging seven degrees until a maximum width of 60 nm is reached 245 nm out. Thereafter the width remains constant (see Figure 2 of GM OPS.CAT.170).		
Figure 2 of GM OPS.CAT.170		

A: Rule	B: Summary of comments	C: Reason for change, remarks
		
v. MOCA does not cover any overlapping of the corridor.		
b. Minimum Off-Route Altitude (MORA). MORA is calculated for an area bounded by each or every second LAT/LONG square on the Route Facility Chart (RFC)/Terminal Approach Chart (TAC) and is based on a terrain clearance as follows: i. Terrain with elevation up to 6 000 ft (2 000 m) – 1 000 ft above the highest terrain and obstructions; ii. Terrain with elevation above 6 000 ft (2 000 m) – 2 000 ft above the highest terrain and obstructions.		
3 Jeppesen Formula (see Figure 3 of GM OPS.CAT.170)		
a. MORA is a minimum flight altitude computed by Jeppesen from current ONC or WAC charts. Two types of MORAs are charted which are: i. route MORAs e.g. 9800a; and		

A: Rule	B: Summary of comments	C: Reason for change, remarks
ii. grid MORAs e.g. 98.		
b. Route MORA values are computed on the basis of an area extending 10 nm to either side of route centreline and including a 10 nm radius beyond the radio fix/reporting point or mileage break defining the route segment.		
c. MORA values clear all terrain and man-made obstacles by 1 000 ft in areas where the highest terrain elevation or obstacles are up to 5 000 ft. A clearance of 2 000 ft is provided above all terrain or obstacles which are 5 001 ft and above.		
d. A Grid MORA is an altitude computed by Jeppesen and the values are shown within each Grid formed by charted lines of latitude and longitude. Figures are shown in thousands and hundreds of feet (omitting the last two digits so as to avoid chart congestion). Values followed by ± are believed not to exceed the altitudes shown. The same clearance criteria as explained in GM OPS.CAT.170 3.c. apply.		
Figure 3 of GM OPS.CAT.170		

A: Rule	B: Summary of comments	C: Reason for change, remarks
		
4 ATLAS Formula:		
a. Minimum safe En-route Altitude (MEA). Calculation of the MEA is based on the elevation of the highest point along the route segment concerned (extending from navigational aid to navigational aid) within a distance on either side of track as specified below: i. Segment length up to 100 nm – 10 nm (See Note 1 below). ii. Segment length more than 100 nm – 10%		

A: Rule	B: Summary of comments	C: Reason for change, remarks
of the segment length up to a maximum of 60 nm See Note 2 below).		
Note 1: This distance may be reduced to five nm within TMAs where, due to the number and type of available navigational aids, a high degree of navigational accuracy is warranted.		
Note 2: In exceptional cases, where this calculation results in an operationally impracticable value, an additional special MEA may be calculated based on a distance of not less than 10 nm either side of track. Such special MEA will be shown together with an indication of the actual width of protected airspace.		
b. The MEA is calculated by adding an increment to the elevation specified above as appropriate: Elevation of highest point Increment Not above 5 000 ft 1 500 ft Above 5 000 ft but not above 10 000 ft 2 000 ft Above 10 000 ft 10% of elevation plus 1 000 ft		
The resulting value is adjusted to the nearest 100 ft.		
Note: For the last route segment ending over the initial approach fix, a reduction to 1 000 ft is permissible within TMAs where, due to the number and type of available navigation aids, a high degree of navigational accuracy is warranted.		
c. Minimum safe Grid Altitude (MGA). Calculation of the MGA is based on the elevation of the highest point within the		

A: Rule	B: Summary of comments	C: Reason for change, remarks
respective grid area.		
The MGA is calculated by adding an increment to the elevation specified above as appropriate: Elevation of highest point Increment Not above 5 000 ft 1 500 ft Above 5 000 ft but not above 10 000 ft 2 000 ft Above 10 000 ft 10% of elevation plus 1 000 ft		
The resulting value is adjusted to the nearest 100 ft.		
AMC1 OPS.CAT.205 Fuel and oil supply		
FUEL PLANNING		
1. Fuel planning should be based on: a. data provided by the aircraft manufacturer; or b. current aircraft specific data derived from a fuel consumption monitoring system.	1 IA: A fuel data monitoring system should only be valid if the data and calculations have been validated by a competent Authority;	Not accepted: this was not required by EU-OPS.
2. In-flight re-planning for calculating usable fuel required when a flight has to proceed along a route or to a destination aerodrome other than originally planned should include:		
a. trip fuel for the remainder of the flight;		

A: Rule	B: Summary of comments	C: Reason for change, remarks
b. reserve fuel consisting of: i. contingency fuel; ii. alternate fuel, if a destination alternate aerodrome is required. (This does not preclude selection of the departure aerodrome as the destination alternate aerodrome); iii. final reserve fuel; and iv. additional fuel, if required by the type of operation (e.g. Extended Range Twin-Engine Operations (ETOPS); and	1 MS: add PDP;	Not accepted. Text not changed to remain aligned with EU-OPS;
c. extra fuel, if required by the pilot-in-command.		
AMC2 OPS.CAT.205.A Fuel and oil supply	2 MS, 1 INDIV: Re-align with EU-OPS;	Accepted. Text aligned with EU-OPS;
FUEL PLANNING - AEROPLANES		
1. The pre-flight calculation of usable fuel required for a flight should include the following:		
a. Taxi fuel, which should not be less than the amount expected to be used prior to take-off. Local conditions at the departure aerodrome and Auxiliary Power Unit (APU) consumption should be taken into account;		
b. Trip fuel, which should include: i. fuel for take-off and climb from aerodrome elevation	1 IA: Request to clarify "fuel for a *complete instrument* approach";	Not accepted. The term is self-evident. ;

A: Rule	B: Summary of comments	C: Reason for change, remarks
to initial cruising level/altitude, taking into account the expected departure routing; ii. fuel from top of climb to top of descent, including any step climb/descent; iii. fuel from top of descent to the point where the approach is initiated, taking into account the expected arrival procedure; and iv. fuel for approach and landing at the destination aerodrome;	1 INDIV: Consider fixed altitude restrictions (e.g. add "…and applicable or expected altitude restrictions");	Not accepted. "expected departure routing" implies consideration of altitude restrictions.
c. Reserve fuel, consisting of:		
i. Contingency fuel; except as provided for in 2. below 'Reduced Contingency Fuel', which should be the higher of A. or B. below:		
A.		
1. 5% of the planned trip fuel or, in the event of in-flight re-planning, 5% of the trip fuel for the remainder of the flight; or		
2. not less than 3% of the planned trip fuel or, in the event of in-flight re-planning, 3% of the trip fuel for the remainder of the flight, provided that an ERA aerodrome is available in accordance with AMC OPS.CAT.A.155(b); or		

A: Rule	B: Summary of comments	C: Reason for change, remarks
3. an amount of fuel sufficient for 20 minutes flying time based upon the planned trip fuel consumption provided that the operator has established a fuel consumption monitoring programme for individual aeroplanes and uses valid data determined by means of such a programme for fuel calculation; or		
4. an amount of fuel based on a statistical method which ensures an appropriate statistical coverage of the deviation from the planned to the actual trip fuel. This method is used to monitor the fuel consumption on each city pair/aeroplane combination and the operator uses this data for a statistical analysis to calculate contingency fuel for that city pair/aircraft combination.	1 IA: Request to delete (4) because the contingency fuel should not be based on statistical data and "unexpected" should be considered as something that previous experience has not taken into account;	Not accepted. Text aligned with EU-OPS. Appendix to CAT.OP.145.A Fuel Policy (a)(3)(i)(D).
B. An amount to fly for five minutes at holding speed at 1 500 ft (450 m) above the destination aerodrome in standard conditions;		
ii. Alternate fuel, if a destination alternate aerodrome is required. (This does not preclude selection of the departure aerodrome as the destination alternate aerodrome). This should include:		

A: Rule	B: Summary of comments	C: Reason for change, remarks
A. fuel for a missed approach from the applicable minimum descent altitude/decision height (MDA/DH) at the destination aerodrome to missed approach altitude, taking into account the complete missed approach procedure;		
B. fuel for climb from missed approach altitude to cruising level/altitude, taking into account the expected departure routing;		
C. fuel for cruise from top of climb to top of descent, taking into account the expected routing;		
D. fuel for descent from top of descent to the point where the approach is initiated, taking into account the expected arrival procedure;		
E. fuel for executing an approach and landing at the destination alternate aerodrome; and		
F. where two destination alternate aerodromes are required, sufficient fuel to proceed to the alternate aerodrome which requires the greater amount of alternate fuel;		
iii. Final reserve fuel:		
A. For aeroplanes with reciprocating engines, fuel to fly for 45 minutes;		

A: Rule	B: Summary of comments	C: Reason for change, remarks
B. For aeroplanes with turbine engines, fuel to fly for 30 minutes at holding speed at 1 500 ft (450 m) above aerodrome elevation in standard conditions, calculated with the estimated mass on arrival at the destination alternate aerodrome or the destination aerodrome, when no destination alternate aerodrome is required and		
iv. Additional fuel, if required by the type of operation (e.g. ETOPS). The minimum additional fuel, if not already included in 1.c.i.A.1. and 2., should allow:		
A. the aeroplane to descend as necessary and proceed to an adequate alternate aerodrome in the event of engine failure or loss of pressurisation, whichever requires the greater amount of fuel based on the assumption that such a failure occurs at the most critical point along the route;		
B. hold there for 15 minutes at 1 500 ft (450 m) above aerodrome elevation in standard conditions;		
C. make an approach and landing; and		
D. holding for 15 minutes at 1 500 ft (450 m) above destination aerodrome elevation in standard conditions, when a flight is operated		

A: Rule	B: Summary of comments	C: Reason for change, remarks
without a destination alternate aerodrome;		
d. Extra fuel, if required by the pilot-in-command.		
2. Reduced Contingency Fuel (RCF) Procedure:	1 IA: Request to include to 5 min holding fuel requirement to avoid the possibility that contingency fuel is reduced to an equivalent of 1 or 2 minutes' flying time; request to delete (2) to avoid this practice;	Not accepted. Text is aligned with EU-OPS, and there need be no restriction on the in-flight use of contingency fuel. Appendix to CAT.OP.145.A Fuel Policy (b).
If an operator uses pre-flight planning to a destination 1 aerodrome with a reduced contingency fuel procedure using a decision point along the route and a destination 2 aerodrome (optional refuel destination), the amount of usable fuel, on board for departure, should be the greater of a. or b. below:		
a. The sum of: i. Taxi fuel; ii. Trip fuel to the destination 1 aerodrome, via the decision point; iii. Contingency fuel equal to not less than 5% of the estimated fuel consumption from the decision point to the destination 1 aerodrome; iv. Alternate fuel or no alternate fuel if the decision point is at less than six hours from the destination 1 aerodrome and the requirements of OPS.CAT.A.155(a)(3) are fulfilled;		

A: Rule	B: Summary of comments	C: Reason for change, remarks
v. Final reserve fuel; vi. Additional fuel; and vii. Extra fuel, if required by the pilot-in-command.		
b. The sum of: i. Taxi fuel; ii. Trip fuel to the destination 2 aerodrome, via the decision point; iii. Contingency fuel equal to not less than the amount calculated in accordance with 1.c.i. from departure aerodrome to the destination 2 aerodrome; iv. Alternate fuel, if a destination 2 alternate aerodrome is required; v. Final reserve fuel; vi. Additional fuel; and vii. Extra fuel, if required by the pilot-in-command.		
3. Pre-Determined Point (PDP) Procedure:		
If an operator plans to a destination alternate aerodrome where the distance between the destination aerodrome and the destination alternate aerodrome is such that a flight can only be routed via a predetermined point to one of these aerodromes, the amount of usable fuel, on board for departure, should be the greater of a. or b. below:		
a. The sum of:		

A: Rule	B: Summary of comments	C: Reason for change, remarks
i. Taxi fuel;		
ii. Trip fuel from the departure aerodrome to the destination aerodrome, via the predetermined point;		
iii. Contingency fuel calculated in accordance with 1.c.i.;		
iv. Additional fuel, which should not be less than final reserve fuel, A. for aeroplanes with reciprocating engines, fuel to fly for 45 minutes plus 15% of the flight time planned to be spent at cruising level or two hours, whichever is less; or B. for aeroplanes with turbine engines, fuel to fly for two hours at normal cruise consumption above the destination aerodrome; and		
v. Extra fuel, if required by the pilot-in-command; or		
b. The sum of:		
i. Taxi fuel;		
ii. Trip fuel from the departure aerodrome to the destination alternate aerodrome, via the predetermined point;		
iii. Contingency fuel calculated in accordance with 1.c.i.;		

A: Rule	B: Summary of comments	C: Reason for change, remarks
iv. Additional fuel, which should not be less than final reserve fuel, A. for aeroplanes with reciprocating engines, fuel to fly for 45 minutes; or B. for aeroplanes with turbine engines, fuel to fly for 30 minutes at holding speed at 1 500 ft (450 m) above the destination alternate aerodrome elevation in standard conditions; and		
v. Extra fuel, if required by the pilot-in-command.		
4. Isolated aerodrome procedure:		
If an operator plans to an isolated aerodrome, the last possible point of diversion to any available ERA aerodrome should be used as the pre-determined point in accordance with 3.		
AMC3 OPS.CAT.205.H Fuel and oil supply		
FUEL PLANNING HELICOPTERS		
1. The pre-flight calculation of usable fuel required for a flight should include the following:		
a. Taxi fuel, which should not be less than the amount expected to be used prior to take-off. Local conditions at the departure aerodrome and APU consumption should be		

A: Rule	B: Summary of comments	C: Reason for change, remarks
taken into account;		
b. Trip fuel, which should include: i. fuel for take-off and climb from aerodrome elevation to initial cruising level/altitude, taking into account the expected departure routing; ii. fuel from top of climb to top of descent, including any step climb/descent; iii. fuel from top of descent to the point where the approach is initiated, taking into account the expected arrival procedure; and iv. fuel for approach and landing at the destination aerodrome;		
c. Reserve fuel consisting of:		
i. contingency fuel; A. For IFR flights, or for VFR flights in a hostile environment, 10% of the planned trip fuel; or B. For VFR flights in a non-hostile environment, 5% of the planned trip fuel;		
ii. alternate fuel, if a destination alternate aerodrome is required (This does not preclude selection of the departure aerodrome as the destination alternate aerodrome). This should include: A. fuel for a missed approach from the applicable MDA/DH at the destination aerodrome to missed approach altitude, taking into account the		

A: Rule	B: Summary of comments	C: Reason for change, remarks
complete missed approach procedure; B. fuel for a climb from missed approach altitude to cruising level/altitude; C. fuel for the cruise from top of climb to top of descent; D. fuel for descent from top of descent to the point where the approach is initiated, taking into account the expected arrival procedure; E. fuel for executing an approach and landing at the selected destination alternate aerodrome; and F. For helicopters operating to or from aerodrome located in a hostile environment, 10% of 1.c.ii.A. to E.		
iii. final reserve fuel; A. For VFR flights navigating by day with reference to visual landmarks, 20 minutes fuel at best range speed; or B. For IFR flights or when flying VFR and navigating by means other than by reference to visual landmarks or at night, fuel to fly for 30 minutes at holding speed at 1 500 ft (450 m) above the destination aerodrome in standard conditions calculated with the estimated mass on arrival above the alternate aerodrome, or the destination aerodrome, when no alternate aerodrome is required; and		

A: Rule	B: Summary of comments	C: Reason for change, remarks
iv. additional fuel, if required by the type of operation (e.g. isolated aerodromes); and		
d. Extra fuel if required by the pilot-in-command.		
2. Isolated aerodrome IFR procedure:		
If an operator plans flying IFR to an isolated aerodrome, or when flying Visual Flight Rules (VFR) and navigating by means other than by reference to visual landmarks, for which a destination alternate does not exist, the amount of fuel at departure should include: a. taxi fuel; b. trip fuel; c. contingency fuel calculated in accordance with 1.c.i.; d. additional fuel to fly for two hours at holding speed including final reserve fuel; and e. extra fuel, if required by the pilot-in-command.		
3. Sufficient fuel should be carried at all times to ensure that following the failure of a power unit which occurs at the most critical point along the route, the helicopter is able to: a. descend as necessary and proceed to an adequate aerodrome; b. hold there for 15 minutes at 1 500 ft (450 m) above aerodrome elevation in standard conditions; and		

A: Rule	B: Summary of comments	C: Reason for change, remarks
c. make an approach and landing.		
AMC4 OPS.CAT.205.A Fuel and oil supply	1 MS; No A. and H. subdivision in IR	Not accepted. The IR is now CAT.OP.145.A Fuel policy.
FUEL PLANNING OTHER THAN COMPLEX MOTOR-POWERED AEROPLANES		
The pre-flight calculation of usable fuel required for a flight with other than complex motor-powered aircraft should include:		
1. taxi fuel (fuel consumed before take-off), if significant;		
2. trip fuel (fuel to reach the destination);		
3. reserve fuel, consisting of a. contingency fuel that is not less than 5% of the planned trip fuel or, in the event of in-flight re-planning, 5% of the trip fuel for the remainder of the flight; and b. final reserve fuel to fly for an additional period of 45 minutes;		
4. alternate fuel (fuel to reach the destination alternate aerodrome via the destination), if a destination alternate is required; and		
5. extra fuel (fuel that the pilot-in-command may require in addition to that above).		

A: Rule	B: Summary of comments	C: Reason for change, remarks
AMC5 OPS.CAT.205.H Fuel and oil supply		
FUEL PLANNING OPERATIONS BY DAY AND OVER ROUTES NAVIGATED BY REFERENCE TO VISUAL LANDMARKS WITH HELICOPTERS HAVING A MAXIMUM PASSENGER SEATING CONFIGURATION OF NINE OR LESS ENGAGED IN-FLIGHT OPERATIONS CONDUCTED WITHIN A LOCAL AREA OR OTHER THAN COMPLEX MOTOR-POWERED HELICOPTERS		
1. On completion of a flight, the fuel remaining should not be less than an amount sufficient for 30 minutes flying time at normal cruising speed. This may be reduced to 20 minutes when operating within an area providing continuous and suitable precautionary landing sites. Final reserve fuel should be specified in the operations manual to enable compliance with OPS.CAT.215(b).		
2. Local area operations encompass usually an area within a distance of 20-25 nm.		
GM1 OPS.CAT.205 Fuel and oil supply	1 IA: Delete because contingency fuel is required for unexpected conditions;	Not accepted. The EU-OPS provision for statistical methods for calculating contingency fuel is in use in some MS, and produces operating conditions of equivalent safety to prescriptive rules.
CONTINGENCY FUEL STATISTICAL METHOD		

A: Rule	B: Summary of comments	C: Reason for change, remarks
1. As an example, the following values of statistical coverage of the deviation from the planned to the actual trip fuel provide appropriate statistical coverage:		
a. 99% coverage plus 3% of the trip fuel, if the calculated flight time is less than two hours, or more than two hours and no suitable ERA aerodrome is available;		
b. 99% coverage if the calculated flight time is more than two hours and a suitable ERA aerodrome is available;		
c. 90% coverage if: i. The calculated flight time is more than two hours; and ii. A suitable ERA aerodrome is available; and iii. At the destination aerodrome two separate runways are available and usable,one of which is equipped with an ILS/MLS, and the weather conditions are incompliance with OPS.CAT.A.156(b)(1)(ii); or the ILS/MLS is operational to CatII/III operating minima and the weather conditions are at or above 500 ft/2500 m.		
2. The fuel consumption database used in conjunction with these values should be based on fuel consumption monitoring for each route/aeroplane combination over a rolling two-year period.		

A: Rule	B: Summary of comments	C: Reason for change, remarks
GM2 OPS.CAT.205 Fuel and oil supply		
CONTINGENCY FUEL - HELICOPTERS		
At the planning stage, not all factors which could have an influence on the fuel consumption to the destination aerodrome can be foreseen. Therefore, contingency fuel is carried to compensate for items, such as: 1. deviations of an individual helicopter from the expected fuel consumption data; 2. deviations from forecast meteorological conditions; and 3. deviations from planned routings and/or cruising levels/altitudes.		
AMC1 OPS.CAT.215 In-flight fuel checks		
IN-FLIGHT FUEL MANAGEMENT – MOTOR-POWERED AIRCRAFT		
Except for VFR day flights of other than complex motor-powered aeroplanes, and operations by day and over routes navigated by reference to visual landmarks with helicopters with a maximum passenger seating configuration of nine or less engaged in-flight operations conducted within a local area and other than complex motor-powered helicopters, in-flight fuel management should be carried out according to the following criteria:		

A: Rule	B: Summary of comments	C: Reason for change, remarks
In-flight fuel checks:	1 IA: Request to add "distribution of remaining fuel in the tanks" for safety reasons;	Accepted. Text changed for safety enhancement.
1. Fuel checks should be carried out in-flight at regular intervals. The usable remaining fuel should be recorded and evaluated to: a. compare actual consumption with planned consumption; b. check that the usable remaining fuel is sufficient to complete the flight; and c. determine the expected usable fuel remaining on arrival at the destination aerodrome.		
2. The relevant fuel data should be recorded.		
AMC2 OPS.CAT.215.A In-flight fuel checks	1 MS: Guidelines requested referring to the intervals of fuel checks;	Not accepted. This will depend on the type and area of operation, and is best determined by the operator.
IN-FLIGHT FUEL MANAGEMENT – AEROPLANES		
Except for VFR day flights of other than complex motor-powered aeroplanes, in-flight fuel management should be carried out according to the following criteria:		
1. The expected usable fuel remaining on arrival at the destination aerodrome should not be less than:		

A: Rule	B: Summary of comments	C: Reason for change, remarks
a. the required alternate fuel plus final reserve fuel, or b. the final reserve fuel, if no alternate aerodrome is required.		
2. If, as a result of an in-flight fuel check, the expected usable fuel remaining on arrival at the destination aerodrome is less than: a. the required alternate fuel plus final reserve fuel, the pilot-in-command should take into account the traffic and the operational conditions prevailing at the destination aerodrome, at the destination alternate aerodrome and at any other adequate aerodrome, in deciding whether to proceed to the destination aerodrome or to divert so as to perform a safe landing with not less than final reserve fuel; or b. the final reserve fuel if no alternate aerodrome is required, the pilot-in-command should take appropriate action and proceed to an adequate aerodrome so as to perform a safe landing with not less than final reserve fuel.		
3. On a flight using the RCF procedure, in order to proceed to the destination 1 aerodrome, the usable fuel remaining at the decision point should be at least the total of: a. trip fuel from the decision point to the destination 1 aerodrome; b. contingency fuel equal to 5% of trip fuel from the decision point to the destination 1 aerodrome;		

A: Rule	B: Summary of comments	C: Reason for change, remarks
c. destination 1 aerodrome alternate fuel, if a destination 1 alternate aerodrome is required; and d. final reserve fuel.		
4. On a flight using the PDP procedure in order to proceed to the destination aerodrome, the usable fuel remaining at the PDP should be at least the total of: a. trip fuel from the PDP to the destination aerodrome; b. contingency fuel from the PDP to the destination aerodrome calculated in accordance with AMC2 A CAT OPS.GEN.205 1.c.i.; and c. fuel required according to AMC2 A CAT OPS.GEN.205 3.b.iv.	1 IA: Consider in-flight operations and the fact that the flight crew can be supported by the ground with all available means;	Text not changed to stay aligned with EU-OPS. This may be considered as a future rulemaking task.
5. Prior to a flight with one destination alternate aerodrome and one 3% ERA aerodrome in accordance with OPS.CAT.A.155(b), the final point of diversion to the 3% ERA aerodrome so as to land with final-reserve fuel remaining should be determined. When approaching this point, the pilot-in-command should assess the expected usable fuel remaining, the weather conditions, the traffic and operational conditions prevailing at destination, destination alternate, and 3% ERA aerodrome. The pilot-in-command should divert to the ERA or the destination alternate aerodrome if the destination aerodrome is below operational minima or if no meteorological information is available for the destination aerodrome.		

A: Rule	B: Summary of comments	C: Reason for change, remarks
AMC3 OPS.CAT.215.H In-flight fuel checks		
IN-FLIGHT FUEL MANAGEMENT – HELICOPTERS		
Except for operations by day and over routes navigated by reference to visual landmarks with helicopters having a maximum passenger seating configuration of nine or less engaged in-flight operations conducted within a local area or other than complex motor-powered helicopters, in-flight fuel management should be carried out according to the following criteria:		
1. If, as a result of an in-flight fuel check, the expected usable fuel remaining on arrival at the destination is less than the required alternate fuel plus final reserve fuel, the pilot-in-command should: a. divert; or b. re-plan the flight in accordance with OPS.CAT.H.155(c),		
unless he/she considers it safer to continue to the destination, provided that at an on-shore destination, when two suitable, separate touch down and lift-off areas are available and the weather conditions at the destination comply with OPS.GEN.185, the pilot-in-command may use alternate fuel before landing at the destination;		
2. If, as a result of an in-flight fuel check on a flight to an isolated destination aerodrome, planned in accordance with AMC3 H CAT OPS.GEN.205 3., the expected fuel remaining at the point of last possible diversion is less than the sum of fuel to divert to		

A: Rule	B: Summary of comments	C: Reason for change, remarks
an aerodrome selected in accordance with OPS.CAT.H.156, contingency fuel and final reserve fuel, the pilot-in-command should:		
a. divert; or		
b. proceed to the destination, provided that at on-shore destinations, two suitable separate touch down and lift-off areas are available at the destination and the expected weather conditions at the destination comply with those specified for planning in OPS.GEN.185.		
AMC OPS.CAT.225.A Maximum distance from an adequate aerodrome for two-engined aeroplanes		
OPERATIONS MANUAL		
The following data, specific to each type or variant of aeroplane, should be included in the operations manual:	1 INDIV: Replace by a speed "selected by the operator";	Accepted. Text aligned with EU-OPS.
1. The OEI cruise speed and the method of calculation; and		
2. The maximum distance from an adequate aerodrome.		
AMC OPS.CAT.225.A(c) Maximum distance from an adequate aerodrome for two-engined aeroplanes	1 MS: For consistency, "one-engine inoperative" should be used instead of "single-engined operation";	Accepted.

A: Rule	B: Summary of comments	C: Reason for change, remarks
OPERATION OF TWIN TURBOJET AEROPLANES HAVING A MAXIMUM PASSENGER SEATING CONFIGURATION OF 19 OR LESS AND HAVING A MAXIMUM TAKE-OFF MASS OF LESS THAN 45 360 KG BETWEEN 120 AND 180 MINUTES FROM AN ADEQUATE AERODROME – OPERATIONAL CRITERIA FOR SMALL TWINS WITHOUT ETOPS CAPABILITY		
1. For operations between 120 and 180 minutes, due account should be taken of the aeroplane's design and capabilities (as outlined below) and an operator's experience related to such operations. Relevant information should be included in the operations manual and the operator's maintenance procedures. The term "the aeroplane's design" in this paragraph does not imply any additional type design approval requirements (beyond the applicable original Type Certification (TC) requirements).		
2. Systems capability - Aeroplanes should be certificated to CS-25 as appropriate or equivalent (e.g. JAR-25, FAR-25). With respect to the capability of the aeroplane systems, the objective is that the aeroplane is capable of a safe diversion from the maximum diversion distance with particular emphasis on operations with OEI or with degraded system capability. To this end, the operator should give consideration to the capability of the following systems to support such a diversion:		
a. Propulsion systems - The aeroplane engine should meet the applicable requirements prescribed in CS-25 and CS-E or equivalent (e.g. JAR-25, FAR-25, JAR-E, FAR-E),		

A: Rule	B: Summary of comments	C: Reason for change, remarks
concerning engine TC, installation and system operation. In addition to the performance standards established by the Agency or competent authority at the time of engine certification, the engines should comply with all subsequent mandatory safety standards specified by the Agency or competent authority, including those necessary to maintain an acceptable level of reliability. In addition, consideration should be given to the effects of extended duration single-engine operation (e.g. the effects of higher power demands such as bleed and electrical).		
b. Airframe systems - With respect to electrical power, three or more reliable (as defined by CS-25 or equivalent (e.g. JAR-25, FAR-25)) and independent electrical power sources should be available, each of which should be capable of providing power for all essential services which should at least include the following:		
i. Sufficient instruments for the flight crew providing, as a minimum, attitude, heading, air speed and altitude information;		
ii. Appropriate pitot heating;		
iii. Adequate navigation capability;		
iv. Adequate radio communication and intercommunication capability;		

A: Rule	B: Summary of comments	C: Reason for change, remarks
v. Adequate flight deck and instrument lighting and emergency lighting;		
vi. Adequate flight controls;		
vii. Adequate engine controls and restart capability with critical type fuel (from the stand-point of flame-out and restart capability) and with the aeroplane initially at the maximum relight altitude;		
viii. Adequate engine instrumentation;		
ix. Adequate fuel supply system capability including such fuel boost and fuel transfer functions that may be necessary for extended duration single or dual-engine operation;		
x. Such warnings, cautions and indications as are required for continued safe flight and landing;		
xi. Fire protection (engines and APU);		
xii. Adequate ice protection including windshield de-icing;		
xiii. Adequate control of the flight deck and cabin environment including heating and pressurisation.		
The equipment (including avionics) necessary for extended diversion times should have the ability to operate acceptably following failures in the cooling		

A: Rule	B: Summary of comments	C: Reason for change, remarks
system or electrical power systems.		
For single-engine operations, the remaining power (electrical, hydraulic, pneumatic) should continue to be available at levels necessary to permit continued safe flight and landing, and to provide those services necessary for the overall safety of the passengers and crew. As a minimum, following the failure of any two of the three electrical power sources, the remaining source should be capable of providing power for all of the items necessary for the duration of any diversion. If one or more of the required electrical power sources are provided by an APU, hydraulic system or Air Driven Generator/Ram Air Turbine (ADG/RAT), the following criteria should apply as appropriate: A. To ensure hydraulic power (Hydraulic Motor Generator) reliability, it may be necessary to provide two or more independent energy sources. B. The ADG/RAT, if fitted, should not require engine dependent power for deployment. C. The APU should meet the criteria in AMC OPS.CAT.A.220(c) c.		
c. APU - The APU, if required for extended range operations, should be certificated as an essential APU and should meet the applicable CS-25 and CS-APU provisions or equivalent (e.g. JAR-25, JAR-APU, FAR-25).		

A: Rule	B: Summary of comments	C: Reason for change, remarks
d. Fuel supply system - Consideration should include the capability of the fuel supply system to provide sufficient fuel for the entire diversion taking account of aspects such as fuel boost and fuel transfer.		
3. Powerplant events and corrective action:		
a. All powerplant events and operating hours should be reported by the operator to the airframe and engine Supplementalry (S)TC holders as well as to the competent authority.	1 INDIV: clarify the wording "STC";	Not accepted. STC is defined in Part-21.
b. These events should be evaluated by the operator in consultation with the competent authority and with the engine and airframe (S)TC holders. The competent authority may consult the Agency to ensure that world wide data is evaluated.		
c. Where statistical assessment alone is not applicable (e.g. where the fleet size or accumulated flight hours are small) individual powerplant events should be reviewed on a case by case basis.		
d. The evaluation or statistical assessment, when available, may result in corrective action or the application of operational restrictions.		
e. Powerplant events could include engine shut downs, both on ground and in-flight, (excluding normal training events) including flameout, occurrences where the		

A: Rule	B: Summary of comments	C: Reason for change, remarks
intended thrust level was not achieved or where crew action was taken to reduce thrust below the normal level for whatever reason, and unscheduled removals.		
f. Arrangements to ensure that all corrective actions required by the Agency are implemented.		
4. Maintenance:		
The maintenance programme in accordance with Part-M should be based upon reliability programmes including the following elements but not limited to:		
a. engine oil consumption programmes - Such programmes are intended to support engine condition trend monitoring; and		
b. engine condition monitoring programme - A programme for each powerplant that monitors engine performance parameters and trends of degradation that provides for maintenance actions to be undertaken prior to significant performance loss or mechanical failure.		
5. Flight Crew Training:		
Flight crew training for this type of operation should include, in addition to the requirements of Part MS, particular emphasis on the following:		
a. Fuel management - Verifying required fuel on board prior		

A: Rule	B: Summary of comments	C: Reason for change, remarks
to departure and monitoring fuel on board en-route including calculation of fuel remaining. Procedures should provide for an independent cross-check of fuel quantity indicators (e.g. fuel flow used to calculate fuel burned compared to indicate fuel remaining). Confirmation that the fuel remaining is sufficient to satisfy the critical fuel reserves;		
b. Procedures for single and multiple failures in-flight that may give rise to go/no-go and diversion decisions - Policy and guidelines to aid the flight crew in the diversion decision making process and the need for constant awareness of the closest suitable alternate aerodrome in terms of time;		
c. OEI performance data - Drift down procedures and OEI service ceiling data;		
d. Weather reports and flight requirements - METAR and TAF reports and obtaining in-flight weather updates on the ERA, destination and destination alternate aerodromes. Consideration should also be given to forecast winds (including the accuracy of the forecast compared to actual wind experienced during flight) and meteorological conditions along the expected flight path at the OEI cruising altitude and throughout the approach and landing.		
6. Pre-departure check:		

A: Rule	B: Summary of comments	C: Reason for change, remarks
A pre-departure check, additional to the pre-flight inspection required by Part-M should be reflected in the operations manual. Flight crew members who are responsible for the pre-departure check of an aeroplane should be fully trained and competent to do so. The training programme required should cover all relevant tasks with particular emphasis on checking required fluid levels.		
7. MEL:		
The MEL should take into account all items specified by the manufacturer relevant to operations in accordance with this AMC.		
8. Dispatch/flight planning requirements:		
The operator's dispatch requirements should address the following:		
a. Fuel and oil supply - An aeroplane should not be dispatched on an extended range flight unless it carries sufficient fuel and oil to comply with the applicable operational requirements and any additional reserves determined in accordance with the following:		
i. Critical fuel scenario - The critical point is the furthest point from an alternate aerodrome assuming a simultaneous failure of an engine and the pressurisation system. For those aeroplanes that are type certificated to operate above Flight Level 450,		

A: Rule	B: Summary of comments	C: Reason for change, remarks
the critical point is the furthest point from an alternate aerodrome assuming an engine failure. The operator should carry additional fuel for the worst case fuel burn condition (one engine vs. two engines operating), if this is greater than the additional fuel calculated in accordance with Part-OPS fuel requirements, as follows:		
A. Fly from the critical point to an alternate aerodrome:		
1. At 10 000ft; or		
2. At 25 000ft or the single-engine ceiling, whichever is lower, provided that all occupants can be supplied with and use oxygen for the time required to fly from the critical point to an alternate aerodrome; or		
3. At the single-engine ceiling, provided that the aeroplane is type certificated to operate above Flight Level 450;		
B. Descend and hold at 1 500 ft for 15 minutes in ISA conditions;		
C. Descend to the applicable MDA/DH followed by a missed approach (taking into account the complete missed approach procedure); followed by		

A: Rule	B: Summary of comments	C: Reason for change, remarks
D. A normal approach and landing;		
ii. Ice protection - Additional fuel used when operating in icing conditions (e.g. operation of ice protection systems (engine/airframe as applicable)) and, when manufacturer's data is available, take account of ice accumulation on unprotected surfaces if icing conditions are likely to be encountered during a diversion;		
iii. APU operation - If an APU has to be used to provide additional electrical power, consideration should be given to the additional fuel required;		
b. Communication facilities - The availability of communications facilities in order to allow reliable two-way voice communications between the aeroplane and the appropriate air traffic control unit at OEI cruise altitudes;		
c. Aircraft Technical Log review to ensure proper MEL procedures, deferred items, and required maintenance checks completed;		
d. ERA aerodrome(s) - Ensuring that ERA aerodromes are available for the intended route, within 180 minutes based upon the OEI cruise speed which is a speed within the certificated limits of the aeroplane, selected by the operator, and confirmation that, based on the available meteorological information, the weather conditions at ERA aerodromes are at or above the applicable minima for the period of time during which the aerodrome(s) may be		

A: Rule	B: Summary of comments	C: Reason for change, remarks
used.		
Table 1 of AMC OPS.CAT.225.A(c) - Planning minima		
Approach Facility — Alternate Airfield Ceiling — Weather Minima Visibility/RVR		
Precision Approach procedure — Authorised DH/DA plus an increment of 200 ft — Authorised visibility plus an increment of 800 metres		
Non-Precision Approach or Circling Approach — Authorised MDA/H plus an increment of 400 ft — Authorised visibility plus an increment of 1 500 m		
AMC OPS.CAT.230.A Pushback and towing - Aeroplanes TOWBARLESS TOWING	1 INDIV: Text not relevant for day-to-day operation, request to delete; consider that some manufacturers publish their own instructions;	Accepted. AMC1-CAT.OP.205 4. includes appropriate text.
1. Towbarless towing should be based on the applicable SAE ARP (Aerospace Recommended Practices), i.e. 4852B/4853B/5283 (as amended).		
2. Pre- or post-taxi positioning of the aeroplane should only be executed by towbarless towing when: a. the aeroplane is protected by its own design from damage		

Nested table (within column A):

Approach Facility	Alternate Airfield Ceiling	Weather Minima Visibility/RVR
Precision Approach procedure	Authorised DH/DA plus an increment of 200 ft	Authorised visibility plus an increment of 800 metres
Non-Precision Approach or Circling Approach	Authorised MDA/H plus an increment of 400 ft	Authorised visibility plus an increment of 1 500 m

A: Rule	B: Summary of comments	C: Reason for change, remarks
to the nose wheel steering system due to towbarless towing operation; or b. a system/procedure is provided to alert the flight crew that such damage may have or has occurred; or c. the towbarless towing vehicle is designed to prevent damage to the aeroplane type.		
AMC OPS.CAT.235 Air Traffic Services - motor-powered aircraft	1 INDIV: Align with EU-OPS;	Accepted. Text changed to align with EU-OPS;
GENERAL		
1. In-flight operational instructions involving a change to the air traffic flight plan should be co-ordinated with the appropriate ATS unit.		
2. When unable to submit or to close the ATS flight plan due to lack of ATS facilities or any other means of communications to ATS, an operator should alert search and rescue services.	7 IS., 1 INDIV: change “alert”;	The text is aligned with AMC OPS 1.300
3. To ensure that each flight is located at all times, the operator should: a. have available the information required to be included in a VFR flight plan, and the location, date and estimated time for re-establishing communications; b. if an aeroplane is overdue or missing, provide for notification to the appropriate ATS or search and rescue		

A: Rule	B: Summary of comments	C: Reason for change, remarks
facility; and c. make provisions for the information to be retained at a designated place until completion of the flight.		
4. Local area operations encompass usually an area within a distance of 20 - 25 nm.	1 IS: move to CAT.GEN.010	'Local helicopter operation' is defined in Annex I – Definitions. The intention is to have 'local' defined in the operations manual.
5. For VFR day operations of single-engined aeroplanes by day, non-mandatory contact with ATS should be maintained to the extent appropriate to the nature of the operation.		