



European Union Aviation Safety Agency
Comment-Response Document 2016-06 (A)

RELATED NPA 2016-06 (A) — RMT.0573 — 12.10.2020

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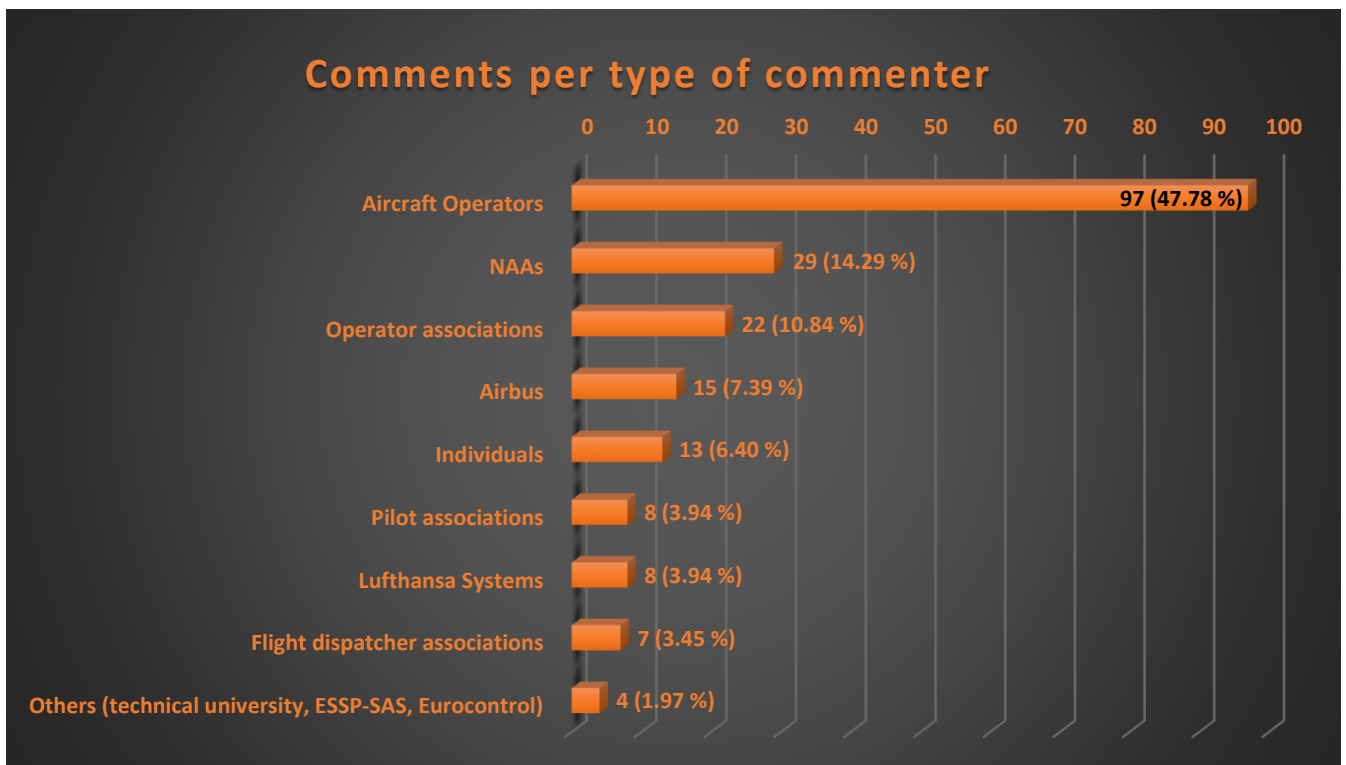
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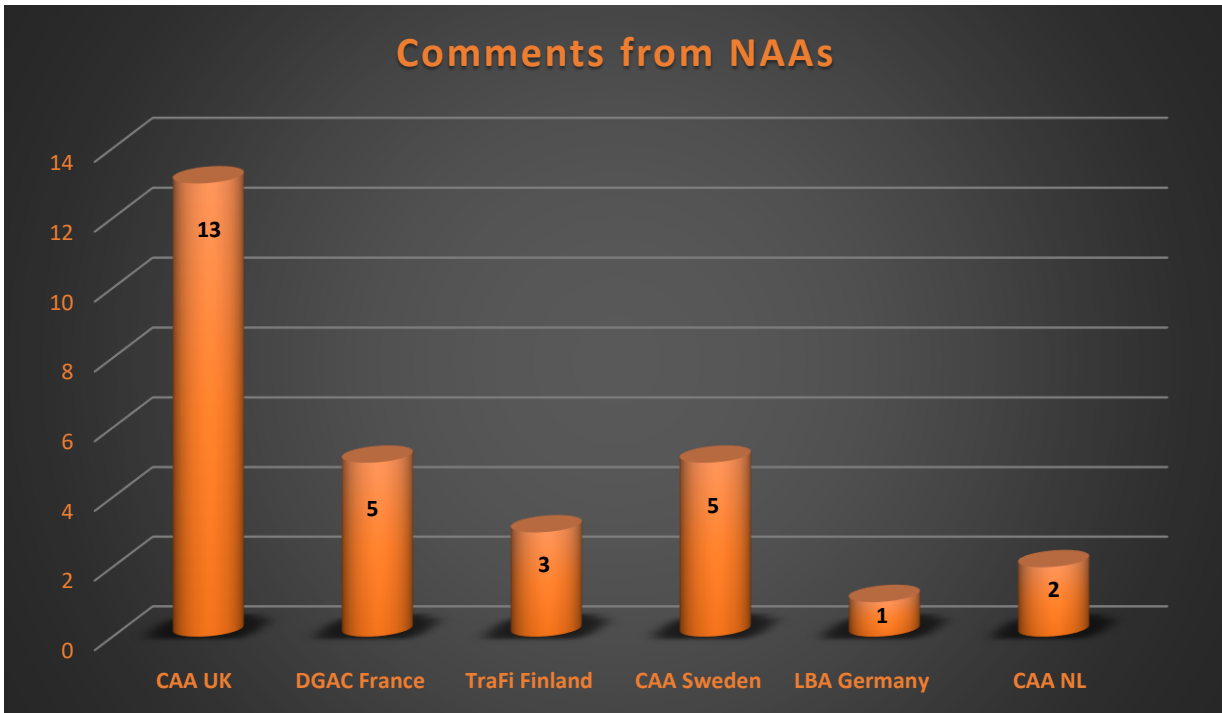
1. Summary of the outcome of the consultation

[NPA 2016-06 \(A\)](#) on changes to Annex II (Part-ARO), Annex III (Part-ORO), and Annex IV (Part-CAT) (aeroplanes) to Regulation (EU) No 965/2012 (the ‘Air OPS Regulation’) received 203 comments from 27 commenters.

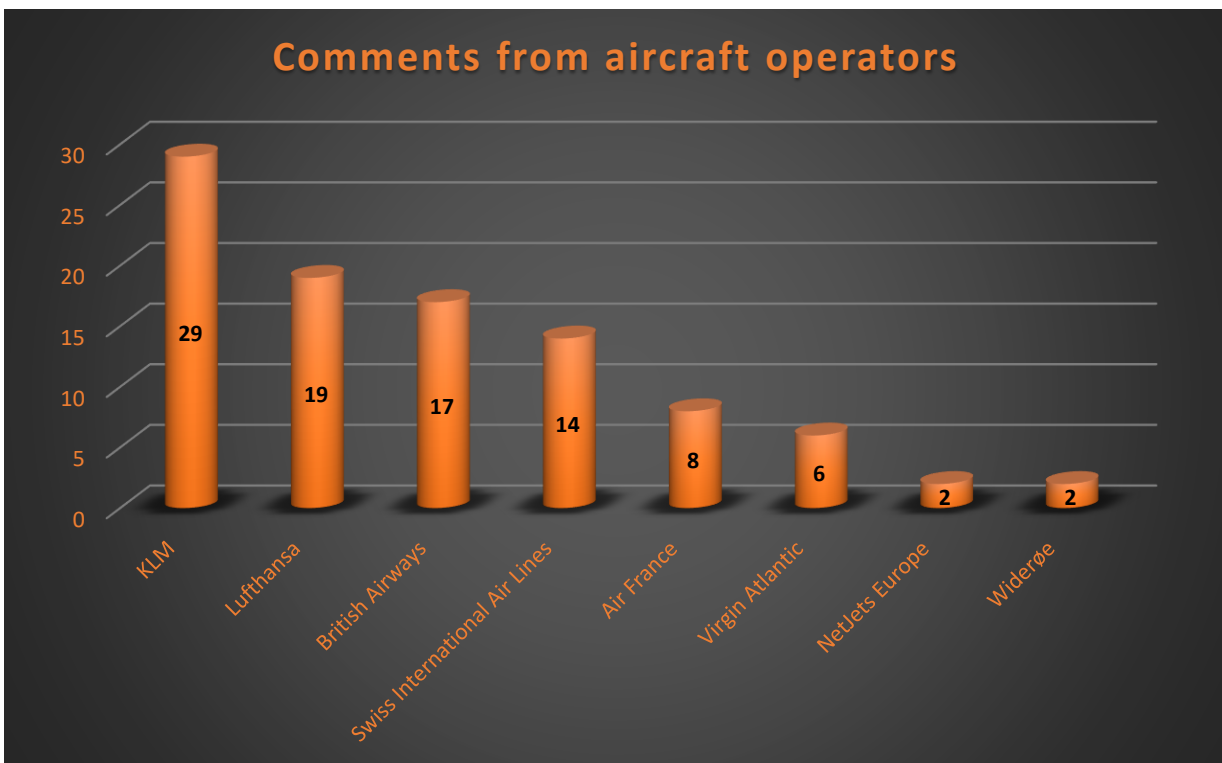
29 comments were submitted by 6 national aviation authorities (NAAs); 97 comments by 8 operators; 22 comments by 2 operator associations; 7 comments by 2 flight dispatcher associations; 8 comments by a pilot association; 8 comments by Lufthansa Systems, 15 comments by Airbus; 13 comments by individuals, and 4 comments by others: Technical University of Munich, Eurocontrol, an approved training organisation (ATO), and a satellite navigation service provider, as shown in the bar chart below:



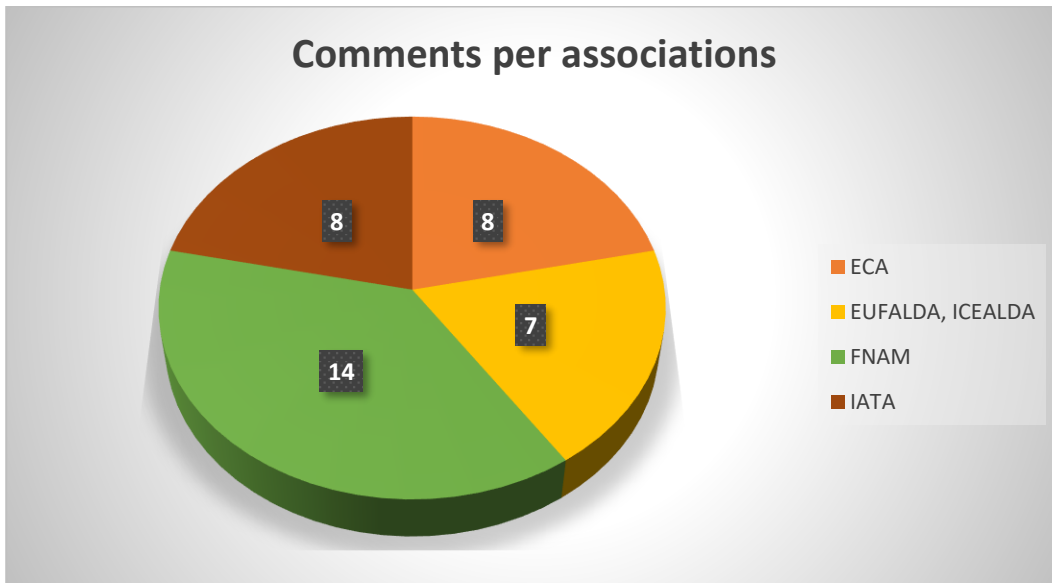
6 competent authorities (CAs) submitted 29 comments, representing approximately 14.3 % of the total number of comments received, as shown in the bar chart below:



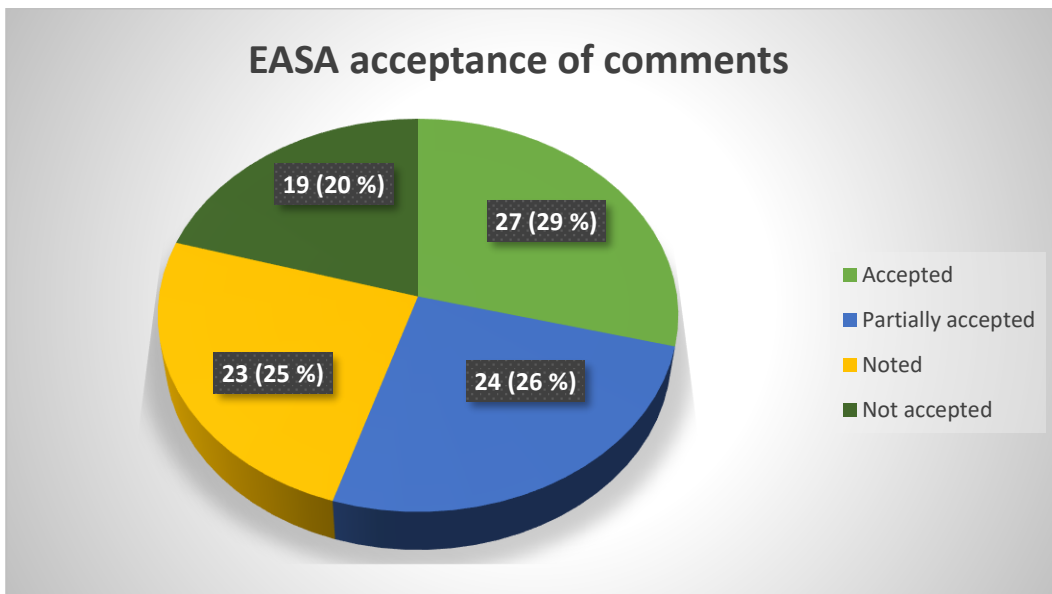
The majority of comments (97), representing 47.8 % of the total number of comments, were submitted from the following air operators, as shown in the bar chart below:



Various associations (pilot associations, operator associations, flight dispatcher associations) submitted in total 37 comments, representing approximately 18.2 % of the total number of comments, as shown in the pie chart below:



The pie chart below shows the statistics on comment acceptance by the European Union Aviation Safety Agency (EASA):



To reply to the comments received, EASA followed a systematic approach, classifying comments into three categories:

- (a) high controversy — high technical difficulty;
- (b) medium controversy — medium technical difficulty; and
- (c) low controversy — low technical difficulty.

EASA consulted the Review Group (RG) for Rulemaking Task (RMT).0573 to draft the responses to all category-1 comments received (high controversy — high technical difficulty), as well as the related amendments to the rules.

RG RMT.0573 and EASA shared the responsibility for drafting the responses to all category-2 comments received (medium controversy — medium technical difficulty) as well as the related amendments to the rules.

EASA was in charge of drafting the responses to all category-3 comments (low controversy — low technical difficulty), and presented its work to RG RMT.0573 before publication.

The most commented items of [NPA 2016-06 \(A\)](#) were the following:

- **Definitions:** most of the comments were classified as medium (category 2). EASA and RG RMT.0573 increased the number of definitions that are contained in Annex 1 (Definitions for terms used in Annexes II to VIII) to the Air OPS Regulation and of the related guidance material (GM). In addition, several definitions that had been proposed as GM in the NPA were moved to the implementing rules (IRs) of Annex 1. The main changes compared to the NPA are the following:
 - the International Civil Aviation Organization (ICAO) definitions of ‘flight following’, ‘flight monitoring’, and ‘flight watch’ were moved to the IRs of Annex 1;
 - Small changes made to the definition of ‘alternate aerodrome’ that includes ‘take-off alternate aerodrome’, ‘destination alternate aerodrome’, and ‘en-route alternate aerodrome’; also a ‘fuel/energy en route alternate (fuel/energy ERA) aerodrome’ definition was included in Annex 1 under the same definition; and
 - a new GM that describes the term ‘relevant safety information’, which is used in the definitions of ‘flight monitoring’ and ‘flight watch’.
- **New point CAT.OP.MPA.180:** the comments focused on the related acceptable means of compliance (AMC) rather than the IR. EASA classified the comments as medium (category 2) and high (category 1). The comments also triggered RG RMT.0573 and EASA to draft new related GM as well as the commitment to creating an EASA fuel manual.
- **New point CAT.OP.MPA.181:** the comments focused on rules at all levels (IRs, AMC, and GM). Most of the comments were classified as low (category 3) except for one that was classified as medium (category 2). The changes aimed at improving the GM proposed in the NPA and were made to the following elements:
 - **Minimum reserve fuel:** further explanations were provided including examples on the use of the ‘minimum fuel’ call.
 - **Final reserve fuel (FRF):** further explanations were provided.
 - **Elements to consider in flight planning:** EASA and RG RMT.0573 created several GM to further explain point CAT.OP.MPA.181 (b): ‘The operator shall ensure that the fuel/energy planning of flights includes (...)’.
 - **Introduction of alleviations for Performance Class B aeroplanes and European light aircraft (ELA):** a new AMC was created to allow for a more practical calculation method of fuel planning for small aircraft. Such alleviation was allowed under the existing point CAT.OP.MPA.151. By introducing this AMC, light aircraft can also benefit from fuel schemes. This also allows for a single approach to fuel

- planning, using a performance-based IR for all aircraft, and different AMC depending on the complexity of the aircraft and the operations to be carried out.
- Renumbering of the related GM: as a consequence of the changes described above, renumbering of all the fuel planning-related GM was necessary.
 - New point CAT.OP.MPA.182: the number of comments received on the aerodrome selection policy were less than the comments on points CAT.OP.MPA.180 and 181. EASA classified the comments into all three categories (low, medium, and high). Although the number of comments was smaller, it triggered significant changes to the whole structure of the aerodrome selection policy, including new AMC that contain a new variation. At the same time, EASA decided to adopt the new ICAO classification of approaches (type A and type B), following the ICAO performance-based operating minima. Therefore, the aerodrome selection policy was extensively amended, and a new supplement to the regulatory impact assessment (RIA) was drafted to evaluate such a change. The fundamental changes were:
 - Aerodrome selection policy within the basic fuel scheme: alignment of the planning minima with extended-range twin operations (ETOPS).
 - New variation under AMC2 CAT.OP.MPA.182: a new planning-minima table was introduced, which allows lower for minima compared to the AMC1 CAT.OP.MPA.182 table. The variation was based on the Transport Canada Civil Aviation (TCCA) provisions for planinig minima.
 - Renumbering of the aerodrome selection policy IRs: although the NPA included the aerodrome selection policy in point CAT.OP.MPA.183, EASA decided to perform a complete renumbering of the fuel IRs in [Opinion No 02-2020](#), to better integrate the helicopter IRs into the new structure. This change impacted the aerodrome selection IRs, which were included under the new point CAT.OP.MPA.182.
 - New point CAT.OP.MPA.185: the comments focused on rules at all levels (IRs, AMC, and GM). EASA classified the comments into all three categories (low, medium, and high). EASA and RG RMT.0573 focused their work on the AMC and GM, as the changes made to the IRs were editorial. The changes can be summarised as follows:
 - A new AMC2 CAT.OP.MPA.185 was created to provide further guidance on in-flight fuel management when using the variations of an isolated aerodrome or the reduced-contingency-fuel procedure.
 - Some of the comments highlighted the commander's difficulty in determining when to should use the 'MINIMUM FUEL' or the 'MAYDAY MAYDAY MAYDAY FUEL' call. For that reason, EASA provided more examples of the use of the 'MINIMUM FUEL' call in addition to the existing examples of ICAO Doc 9976 'Flight Planning and Fuel Management (PPFM) Manual' (1st edition, 2015).
 - Another significant change from [NPA 2016-06 \(A\)](#) was introduced in [Opinion No 02-2020](#): the term 'fuel' in the IRs was replaced, wherever appropriate, with the term 'fuel/energy', to enable aircraft operators that use other sources of energy for propulsion than fuel to apply the new fuel rules. The term 'fuel' is kept in the draft AMC and GM to allow such operators to apply alternative means of compliance (AltMoC), if necessary. This change was triggered by a comment received to [NPA 2016-06 \(C\)](#), which is dedicated to non-commercial operations (Annex VI (Part-NCC), Annex VII (Part-NCO), and Annex VIII (Part-SPO) to the Air OPS Regulation). EASA extended the applicability of the new concepts to all aircraft, irrespective of

their size and type of operations (whether commercial or non-commercial), thus proposing rules that are resilient to fast-paced technological advancements.



2. Individual comments and responses

In responding to comments, a standard terminology has been applied to attest EASA's position. This terminology is as follows:

1. **Accepted** — EASA agrees with the comment and any proposed amendment is wholly transferred to the revised text.
2. **Partially accepted** — EASA either agrees partially with the comment, or agrees with it but the proposed amendment is only partially transferred to the revised text.
3. **Noted** — EASA acknowledges the comment but no change to the existing text is considered necessary.
4. **Not accepted** — The comment or proposed amendment is not shared by EASA.

(General Comments)

comment	<p>38</p> <p style="text-align: right;">comment by: <i>Bristol Groundschool International Ltd</i></p> <p>We note that there are no provisions in the NPA for crediting of theoretical knowledge for students who have previously completed KSA100 training on another approved course. We recommend that such provisions should be included.</p>
response	<p>Noted.</p> <p>This comment is addressed to NPA 2016-03 (RMT.0595) and was dealt with in the related CRD 2016-03.</p>
comment	<p>54</p> <p style="text-align: right;">comment by: <i>British Airways Flight Operations</i></p> <p>General comment: Please remove any reference to 'precision approach' The new version of EASA Ops, valid from 25 Aug 16, now refers to 2D and 3D approaches.</p>
response	<p>Partially accepted.</p> <p>The new Type A and Type B instrument approach types were introduced in accordance with the related ICAO amendments. The definitions of these new instrument approaches types will be fully developed and introduced in the Air OPS rules through RMT.0379 — All-weather operations.</p>



comment	56	comment by: <i>British Airways Flight Operations</i>
	British Airways warmly welcomes the changes which are proposed by this NPA, and thanks the Rulemaking Group for its excellent work. In particular, the possibility of using performance-based fuel schemes is particularly appropriate, and puts the responsibility for safe operation exactly where it ought to be: in the hands of an operator, in collaboration with its own NAA.	
response	Noted.	

comment	57	comment by: <i>EUROCONTROL</i>
	The EUROCONTROL Agency does not have comments on NPA 2016-06 (A).	
response	Noted.	

comment	118	comment by: <i>Luftfahrt-Bundesamt</i>
	The LBA has no comments on NPA 2016-06 (A).	
response	Noted.	

comment	164	comment by: <i>European Cockpit Association</i>
	<p>General ECA Comments on NPA 2016-06 (A) Aeroplanes:</p> <ol style="list-style-type: none"> 1. The Pilot In Command (PIC) (and the passenger) are the main stakeholders and should be confident of the fuel policy in general. 2. Notwithstanding the above, The PIC shall retain final and absolute authority on the fuel carried for a specific flight. 3. ECA supports the performance based approach as indicated by the regulatory package: <ul style="list-style-type: none"> ○ <i>implementing rules (IRs) where the safety objective is defined; and</i> ○ <i>acceptable means of compliance (AMC) that provide two different ways to meet the safety objective: a basic scheme and an individual scheme; the basic scheme provides a similar approach to the current prescriptive environment while the individual fuel scheme allows an increased efficiency and flexibility depending on the maturity of the operator and of the CA.</i> 4. However, to cater for unforeseen circumstances or events where the risk assessment is not valid, a basic minimum should be specified in the performance based fuel scheme. 	

	<p>5. ECA stipulates the possible risk if a NAA does not perform a correct assessment of the operator's capability to implement the PBR on fuel management, there is a risk that the occurrences related to fuel management may increase.</p> <p>6. ECA supports the integration of EASA regulations with ICAO Annex 6 SARPS (Operation of Aircraft) and ICAO doc. 9976 (Flight Planning and Fuel Management Manual)</p> <p>7. ECA supports the inclusion of "Minimum Fuel" in EASA regulations.</p> <p>8. ECA supports the introduction of the term "Safe Landing" as an adequate lading and safe with regard to the fuel status.</p> <p>9. In flight re-planning has the same status as pre-flight planning and should as proposed be located in CAT.OP.MPA.181 'fuel planning and in-flight re-planning policy'.</p>
response	<p>Ppartially accepted.</p> <p>1-3. Noted</p> <p>4. Noted. Point CAT.OP.MPA.180 requires the operator to establish a baseline safety performance with key safety indicators that are agreed with the competent authority (CA). If the operator does not meet the agreed targets, then the CA can withdraw the privileges established by complying with point CAT.OP.MPA.180 and and using AMC3 CAT.OP.MPA.180 as an acceptable means of compliance.</p> <p>5. Accepted. EASA will initiate a safety promotion task (SPT), including several meetings with the RG RMT.0573, to provide safety promotion material to support the implementation of this RMT and the related oversight. The new rules provide for a set of criteria to be met by the competent authority when approving individual fuel schemes. Moreover, EASA will monitor the effective implementation of the new rules through the standardisation process.</p> <p>6-9. Noted.</p>

comment	<p>188 comment by: <i>FNAM</i></p> <p>The FNAM (Fédération Nationale de l'Aviation Marchande) is the French Aviation Industry Federation / Trade Association for Air Transport, gathering the following members:</p> <ul style="list-style-type: none"> • CSTA: French Airlines Professional Union (incl. Air France) • SNEH: French Helicopters Operators Professional Union • CSAE: French Handling Operators Professional Union • GIPAG: French General Aviation Operators Professional Union • GPMA: French Ground Operations Operators Professional Union • EBAA France: French Business Airlines Professional Union <p>And the following associated members:</p>
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	<ul style="list-style-type: none"> • FPDC: French Drone Professional Union • UAF: French Airports Professional Union <p><u>Introduction:</u></p> <p>The comments hereafter shall be considered as an identification of some of the major issues the French industry asks EASA to discuss with third-parties before any publication of the proposed regulation. In consequence, the following comments shall not be considered:</p> <ul style="list-style-type: none"> - As a recognition of the third-parties consultation process carried out by the European Parliament and of the Council; - As an acceptance or an acknowledgement of the proposed regulation, as a whole or of any part of it; - As exhaustive: the fact that some articles (or any part of them) are not commented does not mean FNAM has (or may have) no comments about them, neither FNAM accepts or acknowledges them. All the following comments are thus limited to our understanding of the effectively published proposed regulation, notwithstanding their consistency with any other pieces of regulation.
response	Noted.

comment	<p>209 comment by: <i>Finnish Transport Safety Agency</i></p> <p>Finland supports the NPA 2016-06 and the introduction of the fuel scheme. We have placed few comments in the document.</p>
response	Noted.

Notice of Proposed Amendment 2016-06 (A) — Sub-NPA (A) ‘Aeroplanes — Annex I (Definitions), Part-ARO, Part-CAT’ — General comments p. 1-3

comment	<p>75 comment by: <i>ICEALDA</i></p> <p>Operational control:</p> <p>The exercise of authority over the initiation, continuation, diversion or termination of a flight in the interest of safety of the aircraft and the regularity and efficiency of the flight.</p> <p>An operator or a designated representative shall have responsibility for operational control.</p>
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Responsibility for operational control shall be delegated only to the pilot-in-command and to a flight operations officer/flight dispatcher an operator's approved method of control and supervision of flight operations MUST/SHALL use of flight operations officer/ flight dispatcher personnel or whichever the operators call call of method of flight planning or do flight plan for cockpit crew that MUST/SHALL be trained qualified Flight operations officer / Flight Dispatcher.

That is will guarantee that this will cut all diversion and will cut cost for the operator's and will protect more slots on the airports.

That is NO TECHNOLOGIE that can overtake human factor which can support the crew regarding take action for fuel and safety of the flight.

If EASA think differently than EASA is reduce safety of the flight and need to answer for that.

All this avove will

response

Not accepted.

Please see the response to comment 74.

comment

76 comment by: *Swedish Transport Agency, Civil Aviation Department (Transportstyrelsen, Luftfartsavdelningen)*

In general The Swedish Transport Agency supports the proposals in EASA NPA 2016-06 but have some comments which are inserted under each paragraph.

response

Noted.

comment

138 comment by: *Carl Norgren, Swiss Int Air Lines*

LX welcomes the new 'fuel scheme' concept as a whole. On a detailed level some changes are required for improved consistency and understanding.

LX cannot completely support the flight planning concept as it contains inconsistencies. The NPA contains elements of both the current flight planning concept of EASA and ICAO.

EASA CAT.OP.MPA.140 requires flight planning to consider a maximum time to an 'adequate aerodrome'. Pre-flight the requirements for 'adequate aerodromes' have to be fulfilled.

ICAO Annex 6 requires flight planning to consider 'en-route alternate aerodromes'. Pre-flight the requirements for 'en-route alternate aerodromes' have to be fulfilled.

Using these two different definitions in parallel causes confusion throughout NPA 2016-06.



response	<p>Accepted.</p> <p>The new definition of the ‘fuel ERA aerodrome’ covers the critical fuel scenario and refers to the new point CAT.OP.MPA.181 (c)(6), which describes the additional fuel at the planning stage.</p> <p>EASA introduced the additional fuel requirements into the definition of the fuel en route alternate (ERA) aerodrome to limit the need for increased planning minima for the normal ERA aerodrome. From now on, increased planning minima are only required for the fuel ERA aerodrome; all other ERA aerodromes need to fulfil only the requirements for an adequate aerodrome.</p> <p>The new GM1 CAT.OP.MPA.107 was introduced to clarify the difference between ‘adequate aerodrome’ and ‘weather-permissible aerodrome’. The two concepts are complementary:</p> <ul style="list-style-type: none"> — ‘adequate aerodrome’: see point CAT.OP.MPA.107; and — ‘weather-permissible aerodrome’ means adequate plus weather-permissible aerodrome. <p>As a reminder, a definition of ‘weather-permissible aerodrome’ is included in Annex I (Definitions) to the Air OPS Regulation:</p> <p>‘Weather-permissible aerodrome’ means an adequate aerodrome where, for the anticipated time of use, weather reports, or forecasts, or any combination thereof, indicate that the weather conditions will be at or above the required aerodrome operating minima, and the runway surface condition reports indicate that a safe landing will be possible.’</p>
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2. Explanatory Note

p. 6

comment	<p>77</p> <p>comment by: <i>Swedish Transport Agency, Civil Aviation Department (Transportstyrelsen, Luftfartsavdelningen)</i></p> <p>In the explanatory note to part A of this NPA it is explained that the proposed provisions is only applicable to aeroplanes. When reading the proposal to ARO.OPS.225 compared to CAT.OP.MPA.180 it is not entirely clear that the provisions is only applicable to aeroplanes. The word “aircraft” is also used in several places. E.g. in AMC1 ARO.OPS.225 (d) (5),(7) and CAT.OP.MPA.181 (B)(1)(i). It is recommended that a consistency check is done in the proposed provisions in Part-A of the NPA to make it clear that it is only applicable to aeroplanes.</p>
response	<p>Accepted.</p> <p>AMC1 ARO.OPS.225 and point CAT.OP.MPA.181 contain the term ‘aeroplane’ in the title, therefore, it should be clear that they are applicable only to aeroplanes in CAT operations. The term ‘aircraft’ was preserved in certain parts of the rules (where there was no risk of confusion between aeroplane and helicopter) due to established terminology (for example, ‘aircraft-specific data’ rather than ‘aeroplane-specific data’).</p>



comment	100	comment by: UK CAA
	<p>Page No: 6</p> <p>Paragraph No: Explanatory note</p> <p>Comment: The UK CAA appreciates the considerable amount of effort that has obviously gone into providing such a comprehensive explanatory note. This helped considerably in understanding the rational and principles intended with the proposed changes.</p>	
response	Noted.	

2. Explanatory Note — 2.1. Overview of the issues to be addressed

p. 6-8

comment	65	comment by: J.Woehrlin/DLH
	<p>Several internal safety investigations showed, that there are multiple reasons for fuel related incidents with interdependence to each other.</p> <p>As a result of investigated incidents DLH implemented the Inflight decision making model.</p> <p>Since it became obvious, that fuel related incidents always had been caused by deficiencies in a combination of pre-planning, inflight fuel management and timely decision for an suitable alternate, DLH strongly supports EASA's integrated approach.</p> <p>By grouping the relevant rules together under one "Scheme" it becomes clear for the users/pilots that these requirements depend on each other.</p> <p>Based on the Results of internal safety investigation LHP implemented the Inflight decision making model.</p> <p>This model follows a similar approach as EASA and ICAO do, enabling the FC with a standardized model to manage inflight fuel and alternate selection.</p> <p>LHP supports the system of applying safety issues by IR setup and defining the different approaches (prescriptive way and individual fuel scheme) in the AMC.</p>	
response	Noted.	



2. Explanatory Note — 2.2. Objectives

p. 8-9

comment	<p>165 comment by: <i>European Cockpit Association</i></p>
	<p>Add to the <i>specific objectives</i> of this proposal in point (a), additional paragraph:</p> <p>The specific objectives of this proposal are, therefore, to:</p> <p>(a) maintain the high aviation safety level by:</p> <p>(1) addressing Safety Recommendation (SR) FRAN-2012-026;</p> <p>(2) transposing the content of SIB No 2013-12 to the applicable rules of the Air OPS Regulation; and</p> <p>(3) transposing the content of SIB No 2014-16 to the applicable rules of the Air OPS Regulation;</p> <p>ECA suggests addition of a point:</p> <p><u>(4) and foremost by ensuring a stringent fuel policy and oversight to individual fuel and performance based schemes.</u></p>
response	<p>Noted.</p> <p>The objectives of RMT.0573 are stated in the related Terms of Reference (ToR) RMT.0573, Issue 1. To amend these objectives, a new issue of the ToR needs to be published. However, EASA believes that the new rules do ensure a robust fuel scheme, while allowing for a performance-based approach.</p>

2. Explanatory Note — 2.3. Summary of the RIA

p. 9

comment	<p>70 comment by: <i>ICEALDA</i></p>
	<p>That is most important thing is that Operators stabilise training for OCC personnel regarding fuel planning and support the crew and have sufficient alternate and sufficient route etc.</p> <p>The operators can not only rely on that the management take decision regarding the fuel, this have to come from qualified/licensed Flight Dispatcher with in OCC and PIC.</p>
response	<p>Partially accepted.</p> <p>Point ORO.GEN.110 (c) requires the operator to '(...) ensure a system for exercising operational control over any flight operated under the terms of its certificate (...)', while point ORO.GEN.110 (e) contains an overarching requirement on personnel proficiency and instruction.</p>



Additionally, a training programme for flight operations officers (FOOs) that are involved in an individual fuel scheme was added as a means of compliance in the new AMC1 ORO.GEN.110(c)&(e).

See also the response to comment 74 (identical comment: 71, similar comments: 72, 74, 75, 125, 155).

comment	218	comment by: <i>Wideroe Flyveselskap AS</i>
	Widerøe Airline is supporting option 2.	
response	Noted.	

2. Explanatory Note — 2.4. Overview of the proposed amendments

p. 9-30

comment	19	comment by: <i>KLM</i>
	<p>page 13 GM</p> <p>GM1.CAT.OP.MPA.107</p> <p>the creation of weather permissible aerodrome starts the discussion of adequate and suitable alive again.</p> <p>To make clear which use of aerodromes are to become weather permissible should be specified in the definition.</p> <p>added to this definition should be:</p> <ul style="list-style-type: none"> - to comply with flight planning requirements destination aerodromes, take off alternate aerodrome, fuel ERA's destination alternate aerodromes and isolated destination aerodromes are weather permissible aerodromes. <p>the term weather permissible fuel era and weather permissible destination etc. should be used consequently and the weather requirements shall not be specified in AMC1 CAT.OP.MPA.183(d&(e) selection of aerodromes policy, as these requirements are specified in GM2 CAT.OP.MPA.185 Planning minima for IFR flights – aeroplanes</p>	
response	<p>Partially accepted.</p> <p>The text of GM1 CAT.OP.MPA.107 was modified to clarify that for an adequate aerodrome, it is not mandatory to take into account the weather conditions.</p>	



comment	<p>30</p> <p>Pagina 23 As per (b), at the planning stage of a flight, two aerodromes must be available for a safe landing at the estimated arrival time at the destination or destination alternate. Two aerodrome: should be 'two landing options' instead.</p>	comment by: <i>KLM</i>
response	<p>Accepted.</p> <p>This comment was addressed to an entry in the Explanatory Note to the NPA, relating to the text of point CAT.OP.MPA.183 (the new point CAT.OP.MPA.182 in Opinion No 02-2020). The correction was included in the (Explanatory Note to) Opinion No 02-2020.</p>	
comment	<p>31</p> <p>Flight planning system performance and flight dispatchers familiarization and competency on its use, could be critical for a safe planning. Therefore individual fuel schemes approval should be granted based on the use of a specific flight planning tool. Eventual changes on this tool should be submitted to the CA for approval. Furthermore, a minimum experience in the implementation or use of the flight planning system should be required to the flight dispatchers for specific demanding fuel schemes.</p> <p>Our past experience shows mistakes due to unfamiliarization with the flight plan system that could have led to an underfuel situation, such as:</p> <ul style="list-style-type: none"> • Erroneous DOW inserted • Average wind used for fuel calculation instead of actual wind • Incorrect routing due to bad tuning of the system, etc. <p>As conclusion, depending on how complex a flight plan system is, it could be necessary to perform a human-machine interface assessment by the operator.</p>	comment by: <i>Gabriel Arroyo</i>
response	<p>Partially accepted.</p> <p>The training for FOOs/flight dispatchers (FDs) should include the changes made to the software that is used to support the flight monitoring/flight watch system of the operator.</p> <p>These elements were included in AMC1 ORO.GEN.110(c)&(e) and in new points (g) and (h) of AMC1 CAT.OP.MPA.175(a).</p>	
comment	<p>32</p> <p>Regarding the enroute meteorological information, a point is if the significant weather charts provided by WAFC London and Washington are enough to allow an accurate route planning. First of all, it is not unusual to find important prediction differences between them. On the second hand</p>	comment by: <i>Gabriel Arroyo</i>

	<p>there is no general criteria about what should be the minimum safe distance that the aircraft should keep to a potential dangerous weather area. If there is no clear statements from the company, depending on how conservative is a captain/flight dispatcher, the route planned could be quite different and so the fuel computed. Clear procedures should be developed by the operator regarding planning policy.</p>
response	<p>Not accepted.</p> <p>EASA is progressing towards a performance-based approach to drafting new rules. This allows for an efficient use of the resources of an operator and of a competent authority. At the same time, the new rules are developed with a view to ensuring safe operations, while allowing for efficiency.</p> <p>For more information, please consult the document entitled 'A Harmonised European Approach to a Performance Based Environment'.</p>
comment	<p>33 comment by: <i>Gabriel Arroyo</i></p> <p>Our vote is for including the in-flight re-planning item (CAT.OP.MPA.181(d)) into In-flight management, CAT.OP.MPA.185. It seems more logical.</p>
response	<p>Not accepted.</p>
comment	<p>34 comment by: <i>Gabriel Arroyo</i></p> <p>Regarding the potential discrepancies that could occur between the ZFW used for fuel planning calculation and the actual ZFW, we suggest to require an explicit statement in operators PIC procedures asking to compare ZFW of flight plan against last ZFW provided in weight and balance documentation. This is specially relevant for operators whose procedures contemplate receiving the load sheet after closing airplane doors or even during taxiing.</p> <p>Although it should be already included in the operator procedures, because of its critical impact it could be convenient to highlight it.</p>
response	<p>Not accepted.</p> <p>The new GM1 CAT.OP.MPA.181 '<i>Basic fuel scheme — anticipated masses — last-minute changes (CAT.OP.MPA.181(b)(2))</i>' — see paragraph (d)) already provides for this possibility. The decision to insert this text into a GM was taken to ensure proportionality across CAT operators. Elevating this GM to AMC level could be too burdensome for operators that use less complex aircraft.</p>
comment	<p>35 comment by: <i>Gabriel Arroyo</i></p> <p>One potential source of mistakes leading to an underfuel planning calculation are discrepancies between operational and ATC flight plan. In congested traffic situations, last minute changes in the</p>

route ATC flight plan could be submitted by the operator in order to avoid delays for regulations. In such occasions it is not strange to forget to update accordingly the flight plan. Once airborne, PIC could find that ATC force him to fly a route quite longer than planned, with no fuel enough on board. Operators' procedures should take into account how to avoid this possibility.

response

Not accepted.

The Air OPS rules follow a total-system approach; therefore, they should not be read in isolation. Hence, there are several rules that mitigate this issue.

For example, anticipated delays are covered by point CAT.OP.MPA.181 (b)(2), while point CAT.OP.MPA.185, along with point (b) of AMC1 CAT.OP.MPA.185(a), ensure proper in-flight fuel management (e.g. the commander decides to divert to an ERA aerodrome rather than continue to the destination).

comment

61

comment by: *Gabriel Arroyo*

Regarding the NPA request to submit our comments about if a GM related AMC3 CAT.OP.MPA.180 in order to explain what would be a reasonable number of data, perhaps the point is not the total number of the company flights but the number of flights for any particular route. The most critical route from the consumption fuel point of view could be the less often flown. We suggest to establish a reference number in a route by route basis. That should be taken into account for every new route the operator intend to introduce.

response

Partially accepted.

RG RMT.0573 discussed at length the issue of relevant statistical data. After elaborating on the pros and cons of the several examples discussed, RG RMT.0573 concluded that certain data that are collected over a period of 2 years may be relevant for some categories of operators, but not for others. Likewise, a certain type of data could be relevant for regional or local operators, while the same type of data may remain irrelevant for operators that make many long-haul flights.

At the same time, the number of flights should be relevant for the size and complexity of operation of a particular operator. Point (b)(1)(ii) of AMC3 CAT.OP.MPA.180 already specifies that the operator should establish the number of flights relevant to the intended deviation, and that this number is agreed with the competent authority upon submission of the fuel scheme for approval.

RG RMT.0573 agreed that the exemplification of such relevant statistical data will be included in the safety promotion material that will be prepared by EASA in cooperation with them, to support the implementation of the new rules. The safety promotion material will be published on the EASA website.



comment	<p>62 comment by: <i>Gabriel Arroyo</i></p> <p>Regarding CAT.OP.MPA.182, we agree to transform it in an AMC.</p>
response	<p>Accepted.</p> <p>The new AMC1 '<i>Basic fuel scheme — criteria for the pre-flight calculation of usable fuel for performance class B aeroplanes</i>', paragraphs (b) and (c), will be applicable only to performance class B aeroplanes.</p>
comment	<p>71 comment by: <i>ICEALDA</i></p> <p>That is most important thing is that Operators stabilise training for OCC personnel regarding fuel planning and support the crew and have sufficient alternate and sufficient route etc.</p> <p>The operators can not only rely on that the management take decision regarding the fuel, this have to come from qualified/licensed Flight Dispatcher with in OCC and PIC.</p>
response	<p>Partially accepted.</p> <p>See also the response to comment 70 (similar comments: 72, 125, 155).</p>
comment	<p>80 comment by: <i>Swedish Transport Agency, Civil Aviation Department (Transportstyrelsen, Luftfartsavdelningen)</i></p> <p><u>Question from EASA about additional GM in the overview of the proposed amendments in Part-A (page 14)</u></p> <p>The Swedish Transport Agency supports the EASA proposal to develop additional guidance on a minimum number of flights within the 2-year period.</p>
response	<p>Partially accepted.</p> <p>RG RMT.0573 agreed that the data collected should be statistically relevant for the operator's aircraft type, as well as its complexity and specificity of operation. Moreover, AMC2 ARO.OPS.225(c) '<i>Approval of fuel/energy schemes APPROVAL OF INDIVIDUAL FUEL SCHEMES — APPLICATION OF INDIVIDUAL FUEL SCHEMES — GUIDANCE TO STAFF</i>', as well as GM2 CAT.OP.MPA.180 180 '<i>Fuel/energy scheme — aeroplanes INDIVIDUAL FUEL SCHEMES — BASELINE SAFETY PERFORMANCE INDICATORS (SPIs) AND EQUIVALENT LEVEL OF SAFETY</i>' could also be useful for a relevant statistical analysis.</p> <p>While RG RMT.0573 agreed that relevant fuel data to be collected could vary from one operator to another, the GM could not include all possible examples, particularly considering that relevance largely depends on the type of operation, routes, frequency, fleet, etc. Therefore, as part of EASA's support for the implementation of the future fuel schemes, a new manual on fuel planning and</p>

management ('EASA Fuel manual') will be created in the context of safety promotion activities. This new EASA Fuel manual will include examples and best practices on the types of data that operators may consider necessary to collect for their type of operation and that are statistically relevant.

See also the response to comment 61.

comment

81

comment by: *J.Woehrlin/DLH*

AMC 1 ARO.OPS.225(c)(8)

"This informal knowledge is normally acquired through personal experience,..."

LHP: Does the AMC define criteria for "personal experience", which would be required in addition to informal learning?

response

Partially accepted.

The correct reference in the comment should be point (d)(9) of AMC1 ARO.OPS.225.

The Explanatory Note to [Opinion No 02-2020](#) was amended to explain the rationale behind point (d)(9) of AMC1 ARO.OPS.225.

comment

82

comment by: *J.Woehrlin/DLH*

CAT.OP.MPA.180

LHP promotes the general approach to enable NAA and Operators with well defined and multiple AMCs and GMs to establish standardized individual solution instead of using the well known way of CS.

response

Noted.

comment

83

comment by: *J.Woehrlin/DLH*

AMC 3 CAT.OP.MPA 180

LHP assumes that there will not be a single way describing a solid data base with a minimum of flights, fitting to all operators. Moreover it individually depends on the mature of operation (size, structure, experience..).

Therefore an additional GM is not helpful, instead application of individual requirements shall be set according to AMC/GM.

response

Accepted.

RG RMT.0573 discussed at length the development of a new GM to explain what should be understood by 2 years of data collection for statistical purposes.

RG RMT.0573 agreed that the data collected should be statistically relevant for the operator's aircraft type, as well as its complexity and specificity of operation. Moreover, AMC2 ARO.OPS.225(c) 'Approval of fuel/energy schemes APPROVAL OF INDIVIDUAL FUEL SCHEMES — APPLICATION OF INDIVIDUAL FUEL SCHEMES — GUIDANCE TO STAFF', as well as GM2 CAT.OP.MPA.180 180 'Fuel/energy scheme — aeroplanes INDIVIDUAL FUEL SCHEMES — BASELINE SAFETY PERFORMANCE INDICATORS (SPIs) AND EQUIVALENT LEVEL OF SAFETY' could also be useful for a relevant statistical analysis.

While RG RMT.0573 agreed that relevant fuel data to be collected could vary from one operator to another, the GM could not include all possible examples, particularly considering that relevance is largely depends on the type of operation, routes, frequency, fleet, etc. Therefore, as part of EASA's support for the implementation of the future fuel schemes, a new EASA Fuel manual on fuel planning and management will be created in the context of safety promotion activities. This new EASA Fuel manual will include examples and best practices on the types of data that operators may consider necessary to collect for their type of operation and that are statistically relevant.

See also the response to comment 61.

comment

84

comment by: *J.Woehrlin/DLH*

GM 1 CAT.OP.MPA.181(b)(2)(iii)

LHP highly welcomes the approach of enabling the FC with more precise and actual WX information via online media inflight.

Therefore LHP is asking for a standardized, flexible and timely way to acquire necessary approval for IT in ACs.

response

Noted.

This objective does not fall within the scope of RMT.0573.

comment

85

comment by: *J.Woehrlin/DLH*

GM 1 CAT.OP.MPA 181(c)(1)

NOTE

LHP: Might it be helpful for FCs to have that guidance for re-analysis and adjustment implemented in EASA OPS in the same way like an integrated approach?



response Not accepted.

A new GM that describes taxi fuel local conditions was introduced. Additionally, point CAT.OP.MPA.185 and related AMC and GM provide clarification on the issue, which is also referred to in ICAO Doc 9976.

comment 86 comment by: J.Woehrlin/DLH

GM1 CAT.OP.MPA 183 (b)

LHP: sees the definitions 1h - reaching destination as explicit enough. no further AMC req

response Partially accepted.

Based on the changes made to the entire text of the new CAT.OP.MPA.182 on aerodrome selection policy (CAT.OP.MPA.183 in the NPA) and to the related AMC and GM, the content of GM1 CAT.OP.MPA.183(b), published in [NPA 2016-06 \(A\)](#), was changed and differentiated per type of fuel scheme adopted. This was considered necessary, to maintain a high level of safety during a type of operation that has a higher risk level: i.e. in the context of individual fuel schemes, where it is allowed to plan a flight without having a destination alternate aerodrome.

comment 87 comment by: J.Woehrlin/DLH

CAT.OP.MPA.183:

LHP: welcomes definition "safe landing" and "reaching DEST" per GM as governing.

response Noted.

comment 125 comment by: European Federation of Airline Dispatcher's Associations

To AMC1 ARO.OPS.225(c)(8)

Flight dispatchers play a key role in any individual fuel scheme. Preflight fuel calculations, selection of aerodromes and alternate airports, as well as inflight assistance, entrust flight dispatchers a position with a high degree of responsibilities. Pilots have to trust flight dispatchers with the preparation and advice provided. A properly trained flight dispatcher is an essential part of airline operations, however, a common training standard of these functions is missing in Europe. For decades the European Federation of Airline Dispatcher's Associations - EUFALDA has been urging European authorities to set up training standards for Flight Dispatchers. But even the non-compliance with ICAO standards was constantly ignored by European authorities. The lack of these training standards causes shareholders, who see the need for properly trained personnel, to send their dispatchers to US training schools where students learn all about FARs, but miss the

	educational details that are unique to European Aviation. This practice does not touch on subjects like the EU-OPS and others that are typical to European procedures and are not taught at any training programs under FAA control.
response	<p>Accepted.</p> <p>Point ORO.GEN.110 (e) contains an overarching requirement on personnel proficiency and instruction.</p> <p>Additionally, new training guidelines were added to ensure that operators have to train their FOOs in the area of operational control. The new AMC1 ORO.GEN.110(c)&(e) provides a training programme for FOOs of operators that apply an individual fuel scheme.</p> <p>See also the responses to comments 74 and 155.</p>

3. Proposed amendments — 3.1. Draft Regulation (draft EASA Opinion) — Definitions

p. 31-32

comment	<p>39</p> <p>comment by: <i>British Airways Flight Operations</i></p> <p>In the definition of 'fuel ERA aerodrome', it is not clear what 'which is used for the additional fuel' means. Please clarify the explanation</p>
response	<p>Accepted.</p> <p>The definition in Annex I (Definitions) was modified.</p> <p>See also the responses to comments 119 and 150.</p>
comment	<p>103</p> <p>comment by: <i>UK CAA</i></p> <p>Page No: 31</p> <p>Paragraph No: 3.1 / 1. Definitions - Safe Landing</p> <p>Comment: It is recommended that the definition of 'safe landing' is amended as shown to improve readability and consistency with similar examples in NPA 2016-06 Part (B) and (C).</p> <p>Justification: Clarity</p> <p>Proposed Text:</p> <p>'safe landing' means a safe landing in the context of the fuel policy/fuel scheme, a landing at an adequate aerodrome or operating site or, for helicopters, at a precautionary landing site, with no less than the final reserve fuel and in compliance with the applicable operational procedures and aerodrome operating minima.</p>

response Accepted.
The proposal was accepted, but the word 'means' is preserved to ensure consistency with the rest of the definitions in Annex I (Definitions).

comment 119 comment by: AIR FRANCE

Definitions for terms used in Annexes II to VIII

— 'fuel ERA aerodrome': an ERA aerodrome required at the planning stage:

for the purpose of reducing contingency fuel; or

~~which is used for the additional fuel, and which should permit the aeroplane to proceed from the most critical point along the route to a fuel en route alternate aerodrome (fuel ERA) in the relevant aircraft configuration, hold there for 15 min at 1 500 ft (450 m) above aerodrome elevation in standard conditions, make an approach and land~~[GC(DC-A1)];

which is used to determine if additional fuel is required (or not) at the critical point along the route.

other proposal:

to comply with the "additional fuel" requirement (as per AMC1 Cat.OP.MPA.181 fuel policy (a) (6) (i))

[GC(DC-A1)]NPA wording not clear enough and Additional fuel is defined elsewhere. Here we define the second type of Fuel ERA. This definition needs to be very clear because it is a new Fuel ERA introduced by the RMT and it will have a direct impact on operations. Operators want to clearly know for which ERA they need to verify planning minima.

response Accepted.
The definition of 'fuel ERA aerodrome' in Annex I (Definitions) was changed and a new GM was introduced to explain in which cases a fuel ERA aerodrome can be used.
See also the responses to comments 39 and 150 (identical comment: 156).

comment 140 comment by: Carl Norgren, Swiss Int Air Lines

Definition of 'alternate aerodrome'

1.It needs to be clarified that the definition of 'alternate aerodrome' only applies to aerodromes 'selected at the planning stage'.

2.The wording 'may proceed' is not defined. An explicit link to performance requirements (CAT.POL) needs to be added.



	<p>3.The wording ‘where aircraft performance requirements can be met’ needs an explicit link to CAT.POL.</p> <p>4.The wording ‘may include the following’ raises the question which other ‘alternate aerodromes’ exist which are not listed.</p> <p>Suggested wording: ‘alternate aerodrome’ means an adequate aerodrome <u>selected at the planning stage</u> to which an aircraft may proceed <u>taking into account OEI or loss of pressurization, whichever is more restrictive</u>, when it becomes either impossible or inadvisable to proceed to or land at the aerodrome of intended landing where the necessary services and facilities are available, where aircraft performance requirements can be met <u>at the expected landing mass</u> and which is operational at the expected time of use. Alternate aerodromes <u>are</u> the following:’</p>
response	<p>Partially accepted.</p> <p>The definition stems from ICAO Annex 6, Part I and cannot be changed. However, <i>alternate aerodromes may be the following</i> was replaced by <i>‘alternate aerodrome’ includes the following</i>.</p> <p>The proposal to include a reference to Subpart SUBPART C — AIRCRAFT PERFORMANCE AND OPERATING LIMITATIONS (CAT.POL) of Part-CAT was not accepted as CAT.POL is clear in that respect, and operators must comply with the entire regulation, i.e. the rules must not be read in isolation.</p> <p>The en route ERA aerodrome definition was harmonised with the one from ICAO.</p>
comment	<p>150 comment by: <i>Carl Norgren, Swiss Int Air Lines</i></p> <p>Definition of <u>‘fuel ERA aerodrome’</u></p> <p>Wording ‘which is used for the additional fuel’ is unclear.</p> <p>In addition, the critical fuel scenario should be defined separately.</p> <p>Suggested wording:</p> <p>‘fuel ERA aerodrome’: an ERA aerodrome required at the planning stage <u>which is used for</u>:</p> <ul style="list-style-type: none"> - the purpose of reducing contingency fuel; - the critical fuel scenario, if required
response	<p>Accepted.</p> <p>The definition of ‘fuel ERA aerodrome’ in Annex I (Definitions) was modified and a new GM was introduced to explain in which cases a fuel ERA aerodrome can be used.</p> <p>See also the responses to comments 119 and 156.</p>

comment	151 comment by: Carl Norgren, Swiss Int Air Lines
	<p>Definition of '<u>en route alternate (ERA) aerodrome</u>'</p> <p>1. The wording 'adequate' is already included in the definition of 'alternate aerodrome' and should be deleted to avoid confusion.</p> <p>2. An 'en route alternate (ERA) aerodrome' has multiple purposes and is selected at the planning stage. It can also be used for planning with isolated destination. Therefore any mention of abnormal or emergency conditions should be removed.</p> <p>Suggestion: Use ICAO wording: 'An alternate aerodrome at which an aircraft would be able to land in the event that a diversion becomes necessary while en route.'</p>
response	<p>Both points are accepted.</p> <p>The ICAO definition was introduced in the text.</p>

comment	156 comment by: IATA
	<p>Comment 1</p> <p>Definitions for terms used in Annexes II to VIII</p> <p>— 'fuel ERA aerodrome': an ERA aerodrome required at the planning stage: for the purpose of reducing contingency fuel; or which is used for the additional fuel, and which should permit the aeroplane to proceed from the most critical point along the route to a fuel en route alternate aerodrome (fuel ERA) in the relevant aircraft configuration, hold there for 15 min at 1 500 ft (450 m) above aerodrome elevation in standard conditions, make an approach and land; [IATA Comment]</p> <p>which is used to determine if additional fuel is required (or not) at the critical point along the route.</p> <p><i>other proposal:</i></p> <p><i>to comply with the "additional fuel" requirement (as per AMC1 Cat.OP.MPA.181 fuel policy (a) (6) (i))</i></p> <p>[IATA Comment]: NPA wording not clear enough and Additional fuel is defined elsewhere. Here it is defined the second type of Fuel ERA. This definition needs to be very clear because it is a new Fuel ERA introduced by the RMT and it will have a direct impact on operations. Operators want to clearly know for which ERA they need to verify planning minima.</p>
response	<p>Accepted.</p> <p>The definition in Annex I (Definitions) was modified.</p> <p>See also the responses to comments 39 and 150 (identical comment: 119).</p>

comment

170

comment by: Airbus

Page 31 / Paragraph 3.1 – Sub paragraph 1. – Definitions for terms used in annexes II to VIII / Definition of Fuel En-Route Alternate (ERA) Aerodrome

PROPOSED TEXT / COMMENT:

Written as is, this new type of alternates could be mixed up with ETOPS alternates.

RATIONALE / REASON / JUSTIFICATION:

Proposed update for clarity reasons.

response

Accepted.

The definition of ‘fuel ERA aerodrome’ in Annex I (Definitions) was changed.

comment

189

comment by: FNAM

Definitions for terms used in Annex II to VIII

The FNAM wonders how relevant adding the term “adequate” in the definition of the alternate aerodrome is since the EASA chose to take up word for word the ICAO definition except for the “fuel ERA aerodrome” part.

Also an aerodrome on which the aircraft can be operated, taking into account the applicable performance requirements and runway characteristics is already defined as “adequate aerodrome”.

Besides the FNAM thinks the wording used to describe the “Fuel ERA aerodrome” is not clear enough. Indeed, the notion of Additional fuel is defined elsewhere. Here the aim is only to define the second type of Fuel ERA. This definition needs to be unequivocal because it is a new Fuel ERA introduced by the RMT and it will have a direct impact on operations for airlines. Operators want to clearly know for which ERA they need to verify planning minima. Therefore the FNAM suggests to use one of the following definitions of “Fuel ERA aerodrome”:

- ‘fuel ERA aerodrome’: an ERA aerodrome required at the planning stage:

for the purpose of reducing contingency fuel; or

which is used to determine if additional fuel is required (or not) at the critical point along the route.

or :

- ‘fuel ERA aerodrome’: an ERA aerodrome required at the planning stage:

for the purpose of reducing contingency fuel; or

to comply with the “additional fuel” requirement (as per AMC1 CAT.OP.MPA.181 fuel policy (a) (6) (i))



response Partially accepted.

The definition of 'fuel ERA aerodrome' in Annex I (Definitions) was changed and a new GM was introduced to explain in which cases a fuel ERA aerodrome can be used.

RG RMT.0573 decided to not include the word 'adequate' in the definition of 'fuel ERA aerodrome' to avoid the uncertainty about whether the fuel ERA requires weather planning minima or not. The fuel ERA aerodrome requires planning minima, whereas the adequate aerodrome does not.

3. Proposed amendments — 3.2. Draft AMC/GM (draft EASA Decision) — Definitions

p. 32

comment 40 comment by: *British Airways Flight Operations*

This information is welcome. However, the definition of 'Flight' as being the time from when the aircraft first moves under its own power, would benefit from being in the definitions section *per se*, rather than a GM. Please consider upgrading.

response Accepted.

The new definition of 'flight time' is an adaptation of the existing definition of flight time limitations and rest requirements in point ORO.FTL.105.

comment 58 comment by: *CAA-NL*

We suspect that the title of this new GM relating it to Annex I definitions is correct but the heading number 1 has the wrong reference to NCO.

response Accepted.

The heading was corrected to read 'GM to Annex I'.

comment 72 comment by: *ICEALDA*

That is most important thing is that Operators stabilise training for OCC personnel regarding fuel planning and support the crew and have sufficient alternate and sufficient route etc.

The operators can not only rely on that the management take decision regarding the fuel, this have to come from qualified/licensed Flight Dispatcher with in OCC and PIC.

That is important that EASA set a minimum qualification regarding knowledge with in OCC regarding flight planning and training, this is due to many operators just put untrained personnel



	<p>to do the flight plan which do not know many things regarding weather and to put more fuel etc. to the flight due to weather or slot issue etc.</p> <p>many operators do not safe fuel due to they do not have qualified personnel with in OCC.</p>
response	<p>Partially accepted.</p> <p>Point ORO.GEN.110 (c) requires the operator to '(...) ensure a system for exercising operational control over any flight operated under the terms of its certificate (...)', while point ORO.GEN.110 (e) contains an overarching requirement on personnel proficiency and instruction.</p> <p>Additionally, a training programme for FOOs that are involved in an individual fuel scheme was added as a means of compliance in the new AMC1 ORO.GEN.110(c)&(e).</p> <p>See also the responses to comments 74 and 155 (similar comments: 70, 71, 74, 75, 125, 155).</p>
comment	<p>73 comment by: ICEALDA</p> <p>That is most important for EASA to stabilize flight watch within Europe as this will save slot and diversion of the flight due to fuel shortage.</p> <p>That is too much diversion due to lack of flight watch from the operators as this will in the end cost the operators too much money and cost, which will in the end to into the flight ticket or operators will be bankrupt and that will cost the tax community too much.</p> <p>That is most important that EASA stabilize that OCC personnel which do the flight plan for the crew will and can take action to protect the safety of the flight and add fuel due to slots or what is most important regarding weather which is most reason why aircraft is diverting based on latest statistic which EASA can look up.</p> <p>That is a fact.</p>
response	<p>Partially accepted.</p> <p>In the new rules, flight monitoring and flight watch are required for operators that implement an individual fuel scheme and a basic fuel scheme with variations (when applying some variations). Operators that do not have flight watch as part of their operational control system will have to comply with the requirements of the basic fuel scheme, which are more prescriptive.</p>
comment	<p>74 comment by: ICEALDA</p> <p>Operational control:</p> <p>The exercise of authority over the initiation, continuation, diversion or termination of a flight in the interest of safety of the aircraft and the regularity and efficiency of the flight.</p> <p>An operator or a designated representative shall have responsibility for operational control.</p>

Responsibility for operational control shall be delegated **only** to the pilot-in-command and to a **flight operations officer/flight dispatcher** an operator's approved method of control and supervision of flight operations **MUST/SHALL** use of flight operations officer/ flight dispatcher personnel or which ever the operators call call of method of flight planning or do flight plan for cockpit crew that MUST/SHALL be trained qualified Flight operations officer / Flight Dispatcher.

That is will guarantee that this will cut all diversion and will cut cost for the operators and will protect more slots on the airports.

response

Not accepted.

It is outside the scope of RMT.0573 to extend the responsibility for operational control to FOOs/FDs. As a complex task, which requires public consultation and suitable expertise, this proposal should be addressed in a separate RMT. Proposals for new RMTs can be submitted to EASA via the following link: <https://www.easa.europa.eu/document-library/rulemaking-programmes/rulemaking-proposal-on-the-EASA-website>.

The new AMC is in line with the safety objective of point ORO.GEN.110 (e). However, this does not imply that the FOOs will share responsibility for a flight's operational control with the pilots, nor that a licence is required.

The ICAO requirement for FOOs/FDs (Annex 6, Part I) is applied differently in the European rules, compared to the Federal Aviation Administration (FAA) rules. Whereas FAA requires a licence for FDs, the European rules do not require that FDs are licensed. However, this does not contradict the point ORO.GEN.110 (e) requirement, according to which such personnel must have adequate training and competencies.

Nonetheless, EASA acknowledges that FOOs/FDs represent a safetyrelevant profession for which an adequate regulatory framework should be developed. As a first step in this direction, EASA introduced through RMT.0573 new requirements on a training programme for FDs that have extended responsibilities in the operational control, when working for operators that use flight monitoring and flight watch. A new training programme was added in AMC1 ORO.GEN.110(c)&(e) to that effect.

Identical comment: 75.

comment

104

comment by: UK CAA

Page No: 32

Paragraph No: 3.2 / 1, GM13 NCO.OP.125(b)

Comment: Header should refer to Annex 1 not Part-NCO.

Justification: Suspected editorial error.



response

Accepted.

The heading has been corrected to read “GM to Annex I”.

comment

141

comment by: *Carl Norgren, Swiss Int Air Lines*

GM13 Annex I Definitions

Definition of 'suitably qualified operational control personnel' missing.

Suggestion: Add definition or use same wording as for 'flight following': 'operational control personnel' (delete suitably qualified as personnel performing 'flight following' also have to be 'suitably qualified').

response

Not accepted.

The reference to personnel in the definitions of ‘flight following’, ‘flight monitoring’, and ‘flight watch’ stems unmodified from ICAO Doc 9976 ‘Flight Planning and Fuel Management (FPPM) Manual’ (1st Edition, 2015), without modifications.

Additionally, the new AMC1 ORO.GEN.110(c)&(e) details a training programme for FOOs, which contains the necessary elements of training for such positions.

The operator should define the tasks of the operations control centre (OCC) personnel and ensure their competency for those tasks.

comment

171

comment by: *Airbus*

Page 32 / Paragraph 3.2 – Sub paragraph 1. – New GM13 NCO.OP.125(b) / GM13 Annex I Definitions

PROPOSED TEXT / COMMENT:

Suggestion to delete “Flight monitoring – (a)” as is it exactly the same as “Flight watch”, or delete “Flight watch” and keep only “Flight monitoring – (a)”

RATIONALE / REASON / JUSTIFICATION:

“Flight monitoring - (a)” is exactly the same definition/requirement as “flight watch”. Wording duplication is not necessary and for simplification purpose it should be chosen to keep one of the 2.

response

Not accepted.

The definitions stem unmodified from ICAO Doc 9976, as it is important to preserve them as in the reference document. If the definition of flight monitoring were deleted, then the definition of flight watch would be incomplete.



Moreover, flight watch differs from flight monitoring in the following:

- it incorporates the activities specific to flight following; and
- the active tracking of a flight means that the responsible personnel ensure that the flight is following its prescribed route and has no unplanned deviation, diversion or delay.

The three definitions actually complement each other. However, for individual fuel schemes, the requirements may be more demanding than for the basic fuel scheme, therefore, flight watch is not required for the latter.

3. Proposed amendments — 3.3. Draft Regulation (draft EASA Opinion) — Part-ARO

p. 32-33

comment 23 comment by: *KLM*

page 33

ARO.OPS.225 1 (b)

The competent authority shall jointly etc.

Explain the meaning of jointly. (who)

response Accepted.
The word 'jointly' refers to the operator's set of policies and procedures that are listed in that point.
The text was revised accordingly. A new GM1 ARO.OPS.225 was created to explain the intent.

comment 41 comment by: *British Airways Flight Operations*

Semantic point: 'if they demonstrate ...'; suggest 'if the operator demonstrates...'. The pronoun they is somewhat confusing here.

response Accepted.
The wording was improved.

comment 63 comment by: *Gabriel Arroyo*

ARO.OPS.225 (b) talks about "flight planning" when perhaps it should read "fuel planning".



response

Accepted.

The term 'flight' was replaced with 'fuel'.

comment

134

comment by: *DGAC France*

ARO.OPS.225 Approval of fuel schemes, DGAC France believes there is a missing information on the transition from former approved fuel schemes to these new requirements. Are NAAs deemed to re-approve every fuel schemes, after being made compliant with new requirements as proposed by this NPA?

response

Accepted.

More information about the transition period is for approval of the new fuel schemes is included in the draft Cover Regulation amending Commission Regulation (EU) No 965/2012 on air operations, which is published as Annex 1a to [Opinion No 02-2020](#) of this RMT.

comment

172

comment by: *Airbus*

Page 33 / Paragraph 3.3 – Sub paragraph 1. – ARO.OPS.225 / ARO.OPS.225 Approval

PROPOSED TEXT / COMMENT:

a. Suggestion to add “fuel schemes” in the title of this paragraph: Approval of fuel schemes, in line with new AMC1 ARO.OPS.225 (see page 33 / paragraph 3.4 of NPA 2016-06 (A)).

b. Suggestion to delete (d) of ARO.OPS.225 as selection of aerodromes for the intended fuel schemes is already mentioned in (b) of this paragraph.

RATIONALE / REASON / JUSTIFICATION:

Above suggestions are proposed to improve clarity and simplify wordings as much as possible.

response

Not accepted.

(a) Noted.

The phrase 'of fuel/energy schemes' is already in the title of point ARO.OPS.225.

(b) Not accepted.

Point ARO.OPS.225 (d) refers to the fact that this list requires prior approval, while point ARO.OPS.225 (b) refers to a different process, that of assessment and oversight of all the policies as a whole.



3. Proposed amendments — 3.4. Draft AMC/GM (draft EASA Decision) — Part-ARO

p. 33-36

comment	173 comment by: Airbus
	<p>Page 33 / Paragraph 3.4 – Sub paragraph 1. – AMC1 ARO.OPS.225 / ARO.OPS.225 Approval of fuel schemes</p> <p>PROPOSED TEXT / COMMENT:</p> <p>Proposal to add in the list of elements/records requested to operators, if any:</p> <ul style="list-style-type: none"> - Low fuel events (including emergency fuel conditions) - Reliability issues related to fuel system / fuel quantity <p>RATIONALE / REASON / JUSTIFICATION:</p> <p>The elements proposed to be added in the list of elements requested to operators aim at allowing Civil Aviation Authorities to be confident in the reliability of the operators in applying its fuel schemes.</p> <p>Furthermore, the information is proposed to be added in an AMC, not as a firm ARO requirement.</p>
response	<p>Accepted.</p> <p>The proposed elements were added in point (b) of AMC1 ARO.OPS.225. Safety performance indicators (SPIs) and related matters are addressed in GM1 CAT.OP.MPA.180.</p> <p>Moreover, examples of relevant data to be recorded were introduced in GM1 CAT.OP.MPA.185, to facilitate the use of AMC1 CAT.OP.MPA.185(a) for compliance with CAT.OP.MPA.185.</p>

comment	190 comment by: FNAM
	<p>AMC1 ARO.OPS.225</p> <p>For a better understanding and to avoid any confusion, the FNAM suggests to add, at the end of the 3 first paragraphs of the AMC1 ARO.OPS.225, the following sentence “Or other means implemented to satisfy the corresponding IR”, which best reflects the philosophy IR/AMC:</p> <p>“(a) When approving a basic fuel scheme, the competent authority should be satisfied that the operator fulfils the applicable criteria of AMC1 CAT.OP.MPA.180 <i>or other means implemented to satisfy the corresponding IR</i></p> <p>(b) When approving a fuel scheme with variations, the competent authority should be satisfied that the operator fulfils the applicable criteria of AMC2 CAT.OP.MPA.180 <i>or other means implemented to satisfy the corresponding IR</i></p>

(c) When approving individual fuel schemes which deviate, fully or in part, from the basic fuel schemes, the competent authority should be satisfied that the operator fulfils the criteria of AMC3 CAT.OP.MPA.180 *or other means implemented to satisfy the corresponding IR*”

response

Not accepted.

When operators wish to deviate from the basic fuel scheme, they may choose a basic fuel scheme with variations. No alternative means of compliance (AltMoC) are needed as the basic fuel scheme is covered by three new AMC (AMC6 CAT.OP.MPA.181, AMC7 CAT.OP.MPA.181, and AMC8 CAT.OP.MPA.181).

A fuel scheme, which differs from the basic fuel scheme and from the basic fuel scheme with variations, is considered to be an individual fuel scheme, which has to be approved by the competent authority.

3. Proposed amendments — 3.6. Draft Regulation (draft EASA Opinion) — Part-CAT

p. 37-43

comment

02

comment by: KLM

page 49 and page 50 point 7.

the points 7 and 8 have to be combined. it is unnecessary complexing the situation if extra and discretionary fuel are split up.

Only extra fuel to be mentioned which can be to cover anticipated delays, for economical reasons, as requested by the commander or any other reason.

point 8 to be deleted.

the wording is not used consequently as on page 40 point 6.(B)(v) extra fuel, if specified by the commander is used contrary to the other notations.

this same notation of discretionary fuel has to be deleted from pages:

page 51.point 8. (2)(viii)

page 39 point 5. (c) (8)

page 60 point 28. (1)(B)(viii) and also (2)(B)(vi)

response

Not accepted.

A new GM was added to enhance the intent of point (8) on discretionary fuel.

Discretionary fuel was introduced to be harmonised with the related ICAO Annex 6, Part I requirement.



Consistency of formulation is ensured for both types of fuel (extra and discretionary) throughout the new rules.

comment 03 comment by: KLM

page 40 point 7.(b)

is said ... one or more aerodromes so that two options for a safe landing....

when only one aerodrome may be selected there will not be two options. The sentence is wrong and it is unclear what the intention is. It is allowed to plan without an alternate when complying with the requirements of less than 6 hours etc. so this statement is not correct at all.

(b) has to be deleted in total as it does not mean anything

response Not accepted.

A new GM was introduced to explain the 'two safe-landing options'.

Secondly, the entire IR, now renumbered as point CAT.OP.MPA.182 on aerodrome selection policy (previous point CAT.OP.MPA.183 in [NPA 2016-06 \(A\)](#)), was redrafted to follow a more logical sequence.

comment 04 comment by: KLM

page 40 point 7. (c) (CAT.OP.MPA.183(c))

what is intended here?

To operate to an isolated aerodrome requires an approval or is an approval required for each individual flight to an isolated aerodrome.

or is an approval required for continuation of a flight to an isolated aerodrome beyond the point of no return.

it probably has to be split out, but how a flight should be conducted should not be in a section with the requirement for an approval.

response Accepted.

GM1 ARO.OPS.225 was amended to explain that the approval is granted to each operator for an aerodrome for a specific aircraft type, and not for each individual flight.



comment	05	comment by: <i>KLM</i>
	<p>page 40 point 7. (d) (CAT.OP.MPA.183(d))</p> <p>A valid forecast has to be available for the flight planning and margins are set by the regulations of plus and minus one hour of the expected landing time.</p> <p>What more has to be added to these already restrictive requirements.</p>	
response	Noted.	

comment	06	comment by: <i>KLM</i>
	<p>page 40 point 7.(e)</p> <p>the operator can not ensure that sufficient means are available, but has to check that sufficient means are available in accordance with the information that is provided by means of AIP and notams etc.</p> <p>planning an IFR flight has already requirements for sufficient means to navigate so this wording should be:</p> <p>the operator has to check that sufficient means are serviceable.</p>	
response	<p>Not accepted.</p> <p>Operators have the responsibility to ensure that such means exist and, if not, that such means are provided. It is part of their overall responsibility that is stated in points ORO.GEN.110 (d) and ORO.GEN.200 (a)(1).</p>	

comment	17	comment by: <i>KLM</i>
	<p>page 41 point 8(c)</p> <p>MAYDAY call is standardised by ICAO and no different call to be mentioned here.</p>	
response	<p>Noted.</p> <p>The comment refers to the new point CAT.OP.MPA.185 (c) (point CAT.OP.MPA.185 (d) in Opinion No 02-2020). The rule text is identical with the standardised ICAO text.</p>	

comment	<p>20</p> <p>CAT OP MPA 180: pg 37</p> <p>Three options of route scheme are applicable</p> <p>Basic fuel scheme</p> <p>Or</p> <p>Fuel scheme with variation</p> <p>Or</p> <p>Individual Fuel scheme (= basic fuel scheme with additional requirements)</p> <p>This has to be made clear from the beginning on but is shown cluttered. The whole set up of the document is very unclear and has to be changed to a organised listing.</p> <p>the individual fuel scheme is totally unrealistic and no air operator will start this ever.</p> <p>What RNAV capability to do with fuel scheme; these requirements have to be made realistic.</p>	comment by: <i>KLM</i>
response	<p>Fisrt part of the comment: partially accepted.</p> <p>‘fuel scheme with variations’ was corrected to read ‘basic fuel scheme with variations’ throughout the entire set of new rules.</p> <p>Opinion No 02-2020 clarifies the purpose of points (e)(4) as well as (e)(5) of AMC3 CAT.OP.MPA.180.</p> <p>Second part of the comment: not accepted.</p> <p>The performance-based navigation (PBN) rules were recently amended, and required navigation performance (RNP) approaches (APCHs) are no longer a pre-approved item (except for RNP authorisation required (AR) APCH). In the coming years, RNP APCHs are expected to be extensively used. It is important to increase the operators’ capabilities if operators decide to use individual fuel schemes. Also in case of abnormal procedures, the pilot may proceed to aerodromes that are not previously planned; therefore, the rule wasdrafted in a way to provide as many landing options as possible.</p> <p>Similar comments: 8 and 47.</p>	
comment	<p>24</p> <p>page 41 point 8</p> <p>CAT.OP.MPA.185 (a) (3)</p> <p>Delay information is obtained from ATC. Etc.</p> <p>ATC is not the only source of obtaining delay and therefore the words from ATC can be deleted.</p>	comment by: <i>KLM</i>

response Accepted.

The new CAT.OP.MPA.185 point (b) no longer refers to air traffic control (ATC) as the only source of information for delays; instead, it mentions 'a reliable source'. Although that IR point deviates from ICAO Annex 6, Part I, SARP 4.3.7.2.1, point (b)(2)(i) of AMC1 CAT.OP.MPA.185(a) advises to contact ATC.

By accepting other sources of information than ATC, the IR becomes more performance-based and allows for the use of future technologies, whereby the pilot may obtain information about possible delays from reliable sources other than ATC.

comment 26 comment by: *KLM*

page 37

In the text it is insufficiently make clear that the difference between 'Basic scheme' and 'Basic scheme with Variations' in fuel planning is only about Taxi and Contingency Fuel.

2 separate AMC's deal with this, suggesting that these are separate schemes, while one only is about taxi and contingency fuel; the additional text is pointing in that direction as well.

Inconsequent and not completely worked out.

too many cross references making the story unreadable.

response Partially accepted.

For clarity, point (b) of AMC1 CAT.OP.MPA.181 was deleted. AMC2 CAT.OP.MPA.181 was renamed as 'Basic fuel scheme with variations' to distinguish its scope from that of AMC1 CAT.OP.MPA.181, while AMC3 CAT.OP.MPA.181 (on individual fuel schemes) was expanded accordingly.

The three AMC were further amended to clarify the purpose and coverage of the three fuel schemes based on operator performance.

See also the response to comment 46.

comment 42 comment by: *British Airways Flight Operations*

As I read the NPA, the existing text in CAT.OP.MPA.150 is retained. If that is the case, there seems to be confusion between the existing text in that Rule, and the text in the new CAT.OP.MPA.180 / 181.

Moreover, CAT.OP.MPA.150, and its associated AMC, have more description about, for example, the fuel required for diversion to a Destination Alternate. As I read the new 181, that detail is not included.

Please consider rationalising all of the material relating to fuel policy / schemes into one location.

response Partially accepted.

Point CAT.OP.MPA.150 was deleted, and its content was moved to the new point CAT.OP.MPA.181 and related AMC.

The current AMC1 CAT.OP.MPA.150(b) is transferred to the new AMC1 CAT.OP.MPA.181, and partly to point CAT.OP.MPA.181.

comment 43 comment by: *British Airways Flight Operations*

Relating to the new CAT.OP.MPA.185 (a) (1): 'continuous' validation of the assumptions is not possible! The Oxford English Dictionary defines 'continuous' as: forming an unbroken whole without interruption. I don't think that is the intention of the drafting group. Even the word 'continual' would be problematic in this context, because it presupposes frequent reoccurrence. I suggest simply removing the word 'continuous' would suffice.

response Partially accepted.

The term 'continuous' was replaced by the term 'continual' to enhance the requirement for a regular comparison of the fuel plan with the actual flight.

comment 44 comment by: *British Airways Flight Operations*

New CAT.OP.MPA.196: from where does this material originate? And, in particular, why may passengers not embark, disembark or be on board while the process is occurring? If it's not safe for people to be on board, it's surely not safe for flight and cabin crew either!

response Partially accepted.

The risk of fire is still considerable, given the combination of low probability and high severity. Currently, there is no regulation available. However, EASA published on 23 May 2014 [Safety Information Bulletin \(SIB\) 2014-16](#) — Aeroplane Refuelling with One Engine Running.

The IR was changed to clarify in which cases refuelling with an engine running could be justified.

comment 78 comment by: *Swedish Transport Agency, Civil Aviation Department
(Transportstyrelsen, Luftfartsavdelningen)*

CAT.OP.MPA.181 (c)(8) refers to **discretionary fuel**, if required by the commander and CAT.OP.MPA.182 (a)(v) refers to **extra fuel**, if specified by the commander. In CAT.OP.MPA.181 (c)(7) extra fuel has a specific meaning which is different from CAT.OP.MPA.182 (a)(v).

response	<p>For consistency reasons it is suggested that the same wording discretionary fuel is used.</p> <p>Accepted.</p> <p>Point CAT.OP.MPA.182 was reworded to be consistent with points CAT.OP.MPA.181 (c)(7) and (c)(8):</p> <p>‘Extra fuel/energy to take into account anticipated delays or specific operational constraints’, and ‘discretionary fuel/energy, if required by the commander’.</p> <p>The text of point CAT.OP.MPA.182 on performance class B aeroplanes, as proposed in NPA 2016-06 (A), was moved to the new AMC1 CAT.OP.MPA.181.</p> <p>Similar comments: 194, 123, 107, 160.</p>
comment	<p>88 comment by: J.Woehrlin/DLH</p> <p>CAT.OP.MPA.182</p> <p>LHP: Assumes the integrated approach as an solid safety baseline to stick to nominal well proofed fuel figures i.e. FRF for turbine engined ACs to fly 30 min</p>
response	<p>Noted.</p>
comment	<p>105 comment by: UK CAA</p> <p>Page No: 39</p> <p>Paragraph No: 3.6 / 6, CAT.OP.MPA182</p> <p>Comment: It is recommended that the section header is amended as shown to indicate the relevance to Performance Class B aeroplanes.</p> <p>Justification: Clarity</p> <p>Proposed Text:</p> <p>CAT.OP.MPA.182 Fuel schemes - fuel planning and in-flight replanning policy <i>performance class B aeroplanes</i></p> <p>FUEL SCHEME WITH VARIATIONS — PERFORMANCE CLASS B AEROPLANES</p>
response	<p>Partially accepted.</p> <p>The text of point CAT.OP.MPA.182 on performance class B aeroplanes, as proposed in NPA 2016-06 (A), was moved to the new AMC1 CAT.OP.MPA.181.</p>

comment

107

comment by: UK CAA

Page No: 39**Paragraph No:** 3.6 / 6, CAT.OP.MPA182 (a)

Comment: The proposed text does not align with CAT.OP.MPA.181 and it is recommended that the amendment proposed below is used. In particular the use of 'reserve fuel' is not appropriate and 'additional', 'extra' and 'discretionary' fuel are not mentioned or at variance. It is further recommended that suitable AMC/GM is provided for this section.

Justification: Consistency of terms

Proposed Text: Amend to read as follows:

CAT.OP.MPA.182 Fuel schemes — fuel planning and in-flight replanning policy *performance class B aeroplanes*

(a) Notwithstanding CAT.OP.MPA.181(b) to (d), for operations of Performance Class B aeroplanes, the operator shall ensure that the preflight calculation of usable fuel required for a flight includes:

(i) taxi fuel, ~~if significant~~; **which shall not be less than the amount expected to be used prior to take-off;**

(ii) trip fuel;

~~(iii) reserve fuel, consisting of:~~

~~(A)(iii)~~ contingency fuel that is not less than 5 % of the planned trip fuel or, in the event of in-flight replanning, 5 % of the trip fuel for the remainder of the flight; and

(iv) **Destination** alternate fuel, ~~to reach the destination alternate aerodrome via the destination if a destination alternate aerodrome is required;~~

~~(B) (v)~~ final reserve fuel ~~to fly for an additional period of 45 min for reciprocating engines or 30 min for turbine engines;~~ **which shall not be less than:**

(A) for aeroplanes with reciprocating engines, the fuel to fly for 45 minutes; or

(B) for turbine-engined aeroplanes, the fuel to fly for 30 minutes at holding speed at 1 500 ft (450 m) above the aerodrome elevation in standard conditions, calculated according to the estimated mass on arrival at the destination alternate aerodrome or the destination aerodrome when no destination alternate aerodrome is required;

(vi) additional fuel, if required by the type of operation;

~~(v)-(vii)~~ extra fuel, ~~if specified by the commander.~~ **to take into account anticipated delays or specific operational constraints; and**

(viii) discretionary fuel, if required by the commander.

response

Partially accepted.



The amended text of point CAT.OP.MPA.182 in the NPA was moved to the new AMC1 CAT.OP.MPA.181. The terms 'extra fuel' and 'discretionary fuel' were also reviewed for consistency throughout the entire rule text.

comment

108

comment by: UK CAA

Page No: 41**Paragraph No:** 3.6 / 8, CAT.OP.MPA.185 (c)

Comment: The proposed text correctly reflects that provided in ICAO Annex 6. However, due to the new proposed definition of 'safe landing,' which means you shall land with 'no less than final reserves, the statement no longer makes sense. Recommended amended text proposed below.

Justification: Clarity of intent and purpose

Proposed Text:

(c) The commander shall declare a situation of fuel emergency by broadcasting MAYDAY MAYDAY MAYDAY FUEL when the fuel predicted to be available upon landing at the nearest aerodrome ~~where a safe landing can be made~~ is less than the planned final reserve fuel.

response

Not accepted.

The ICAO definition in Annex 6, Part I, SARP 4.3.7.2.3 reads:

'The pilot-in-command shall declare a situation of fuel emergency by broadcasting MAYDAY MAYDAY MAYDAY FUEL, when the calculated usable fuel predicted to be available upon landing at the nearest aerodrome where a safe landing can be made is less than the planned final reserve fuel.'

This definition was copied in the new point CAT.OP.MPA.185 (d) with some refinements.

It is important that the term 'safe landing' is preserved because the pilot's first option should always be to attempt to make a safe landing. When the pilot can no longer make a safe landing with more than the final reserve fuel (FRF), 'MAYDAY MAYDAY MAYDAY FUEL' must be declared.

Only after declaring 'MAYDAY MAYDAY MAYDAY FUEL' in those circumstances, the pilot can explore any other landing options.

If 'safe landing' were deleted from point CAT.OP.MPA.185 (d), the pilot would not be required to declare 'MAYDAY MAYDAY MAYDAY FUEL', if the pilot decided to replan and follow a non-safe landing option, e.g. a military airport or an unprepared runway, which is closer than the original safe landing option.

Example:

FRF is 1 000 kg.

Actual fuel on board is 1 500 kg.



To reach a safe landing option, the required trip fuel is 600 kg.

To reach an unprepared runway, the required trip fuel is 300 kg.

The pilot must declare 'MAYDAY MAYDAY MAYDAY FUEL' as per the new IR:

$1500 - 600 = 900$ kg, which is less than the FRF.

If 'safe landing' is removed from the requirement, the pilot no longer needs to declare 'MAYDAY MAYDAY MAYDAY FUEL' because the remaining fuel on reaching the unprepared runway will be more than the final reserve:

$1500 - 300 = 1200$ kg, which is less than the FRF.

The objective of this requirement is to avoid the second option, which is less safe; therefore, 'safe landing' should be preserved.

Point (e) of GM1 CAT.OP.MPA.185 on the protection of the FRF was reworded to clarify its intent.

comment 120

comment by: AIR FRANCE

This comment is in relation with the previous one

CAT.OP.MPA.181 Fuel scheme — fuel planning and in-flight replanning policy

(c) (6) additional fuel, if required by the type of operation, which shall be the amount of fuel to allow the aeroplane to land at ~~perform a safe landing to~~ [GC(DC-A1)] an en-route alternate aerodrome (fuel ERA) in the event of an engine failure or loss of pressurization, whichever requires a greater amount of fuel, based on the assumption that such a failure occurs at the most critical point along the route; this additional fuel is only required if the minimum amount of fuel calculated in accordance with (c)(2) to (c)(5) above is not sufficient for such an event;

[GC(DC-A1)] Safe landing is defined with Final reserve fuel but the critical scenario only requires 15 min.

response

Accepted.

See also the response to comment 157.

comment 121

comment by: AIR FRANCE

CAT.OP.MPA.181 Fuel scheme — fuel planning and in-flight replanning policy

(b) The operator shall ensure that the fuel planning of flights is based upon at least:

(1) procedures ...



(2) the operating conditions under which the flight is to be conducted including:

- (i) aircraft fuel consumption data;
- (ii) anticipated masses;
- (iii) expected meteorological conditions;
- (iv) the effects of deferred maintenance items and/or configuration deviations; and**
- (v) anticipated delays.[GC(DC-A1]**

(c) The operator shall ensure that the preflight calculation of usable fuel required for a flight includes:

- (1) taxi fuel, ...
- (2) trip fuel, which shall be the amount of fuel required to enable the aeroplane to fly from take-off, or from the point of in-flight replanning, until landing at the destination aerodrome, taking into account the operating conditions of (b) above **except (v);[GC(DC-A2]**
- ...
- (7) extra fuel, to take into account anticipated delays or specific operational constraints; and

[GC(DC-A1]Switch (iv) and (v) in order to allow the modification necessary in (c)
[GC(DC-A2]This is necessary because fuel for anticipated delays goes into EXTRA FUEL.

response Partially accepted.
 Points (b) and (c) of CAT.OP.MPA.181 were redrafted, taking into account this comment.
 Similar comments: 158 and 193.

comment 122 comment by: AIR FRANCE

CAT.OP.MPA.181 Fuel scheme — fuel planning and in-flight replanning policy

(d) The operator shall ensure that in-flight replanning procedures for calculating usable fuel required when a flight ~~has to~~ proceeds**[GC(DC-A1]** along a route or to a destination aerodrome other than originally planned includes: (c)(2) to (c)(8) above.

[GC(DC-A1] “has to” is in contradiction with “voluntarily changing”
 GM1 CAT.OP.MPA.181(d)
 Fuel scheme — fuel planning and in-flight replanning policy
 IN-FLIGHT REPLANNING



	In-flight replanning means voluntarily changing the final destination aerodrome or any alternate aerodrome or the rest of the route to the destination aerodrome after the flight has commenced when the flight could be completed as originally planned.
response	Accepted. Similar comments: 146 and 159.

comment	123 comment by: AIR FRANCE
	<p>CAT.OP.MPA.182 Fuel schemes — fuel planning and in-flight replanning policy</p> <p>...</p> <p>(v) extra fuel, if specified by the commander to take into account anticipated delays or specific operational constraints; and</p> <p>(vi) discretionary fuel , if specified by the commander</p>
response	Accepted. See the responses to comments 107 and 160.

comment	126 comment by: AIR FRANCE
	<p>CAT.OP.MPA.246 Meteorological conditions — aeroplanes</p> <p>In addition to CAT.OP.MPA.245, on IFR flights with aeroplanes, the commander shall only continue beyond:</p> <p>(a) the decision point when using the reduced contingency fuel (RCF) procedure; or</p> <p>(b) the pre-determined point when using the pre-determined point (PDP[CG1]) procedure or the point of no return when using the isolated-aerodrome procedure,</p> <p>AMC2 CAT.OP.MPA.181 Fuel scheme — fuel planning and in-flight replanning policy</p> <p>FUEL SCHEME WITH VARIATIONS — TAXI FUEL— AEROPLANES</p> <p>Taxi fuel: the operator may use statistical taxi fuel.</p> <p>FUEL SCHEME WITH VARIATIONS — CONTINGENCY FUEL— AEROPLANES</p> <p>...</p> <p><u>(e) Predetermined point (PDP) procedure[GC(DC-A2)]</u></p> <p>If the operator’s fuel policy includes planning to a destination alternate aerodrome where the distance between the destination aerodrome and the destination alternate aerodrome is such that</p>

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 (c)(1) or (c)(2):

(1) The sum of:

(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 (a)(3);

(iv) additional fuel if required, but not less than:

(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 2 hours, whichever is less; or

(B) for aeroplanes with turbine engines, fuel to fly for 2 hours at normal cruise

consumption above the destination aerodrome, this should not be less than final reserve fuel; and

(v) extra fuel

(vi) discretionary fuel if required by the commander.

(2) 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 (a)(3);

(iv) additional fuel if required, but not less than:

(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 2 hours, whichever is less; 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, this should not be less than final reserve fuel; and

(v) extra fuel

(vi) discretionary fuel if required by the commander.

AMC1 CAT.OP.MPA.185(a) Fuel scheme — in-flight fuel management policy — aeroplanes

...

(3) Additional conditions for specific procedures

(i) On a flight using the reduced contingency fuel (RCF) procedure to proceed to the destination 1 aerodrome, the commander should ensure that the usable fuel remaining at the decision point is at least the total of:

	<p>(A) trip fuel from the decision point to the destination 1 aerodrome;</p> <p>(B) contingency fuel equal to 5 % of trip fuel from the decision point to the destination 1 aerodrome;</p> <p>(C) destination 1 aerodrome alternate fuel if a destination 1 alternate aerodrome is required; and</p> <p>(D) final reserve fuel.</p> <p>(ii) On a flight using the predetermined point (PDP) procedure to proceed to the destination aerodrome, the commander should ensure that the usable fuel remaining at the PDP is at least the total of:</p> <p>(A) trip fuel from the PDP to the destination aerodrome;</p> <p>(B) contingency fuel from the PDP to the destination aerodrome; and</p> <p>(C) additional fuel if required, but not less than:</p> <p>(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 2 hours, whichever is less; or</p> <p>(B) for aeroplanes with turbine engines, fuel to fly for 2 hours at normal cruise consumption above the destination aerodrome, this should not be less than final reserve fuel.</p>
	<p><u>[CG1]</u>PDP is still present in in flight fuel management. But half of the procedure is missing!!!!</p> <p>I think PDP should be described in “Fuel scheme with variation” because it is a procedure which exists for long time and the isolated aerodrome is just a specific way of using it.</p> <p><u>[GC(DC-A2)]</u></p>
response	<p>Accepted.</p> <p>The pre-determined point (PDP) is not a variation and was deleted.</p> <p>Identical comment: 161.</p>

comment

142

comment by: Carl Norgren, Swiss Int Air Lines

CAT.OP.MPA.181(c)(6)

Critical fuel scenario not consistently and clearly defined

1.A ‘safe landing’ requires that final reserve fuel be on board at landing. This requirement is not contained in the definition of a fuel ERA aerodrome.



response	<p>2.The correct nomenclature is: ‘fuel ERA aerodrome’.</p> <p>Suggested wording:</p> <p>...additional fuel, as required by the critical fuel scenario.</p> <p>Define critical fuel scenario in separate implementing rule (IR).</p> <p>Partially accepted.</p> <p>Point 1: accepted.</p> <p>Safe landing was deleted.</p> <p>Point 2: not accepted.</p> <p>The wording of the rule is correct.</p>
comment	<p>143 comment by: <i>Carl Norgren, Swiss Int Air Lines</i></p> <p>CAT.OP.MPA.181(c)(6)</p> <p>Critical fuel scenario</p> <p>Explanation of critical fuel scenario. The concept is partly contained in the definition of ‘additional fuel’ in CAT.OP.MPA.181(c)(6) and partly contained in the definition of fuel ERA. This is a very important concept underlying the fuel scheme and should be explained in detail.</p> <p>Suggestion: Add implementing rule (IR) detailing the concept of the critical fuel scenario.</p> <p>response</p> <p>Not accepted.</p> <p>Point (a)(6) of the new AMC1 CAT.OP.MPA.181 defines the criteria of the critical fuel scenario. The IR should remain performance-based and only state the safety objective to allow for variations and individual fuel schemes.</p>
comment	<p>146 comment by: <i>Carl Norgren, Swiss Int Air Lines</i></p> <p>CAT.OP.MPA.181(d)</p> <p>Voluntary in-flight re-planning vs. 'has to'</p> <p>GM 1 CAT.OP.MPA.181(d)</p> <p>Fuel scheme — fuel planning and in-flight replanning policy</p> <p>In-flight Replanning</p> <p>In-flight replanning means <u>voluntarily</u> changing the final destination aerodrome or any alternate aerodrome or the rest of the route to the destination aerodrome after the flight has commenced</p>

when the flight could be completed as originally planned. In-flight replanning allows the operator, after flight commencement, to modify the filed flight plan. However, the modified flight plan should fulfil all requirements of a new flight plan. In-flight replanning may be used for commercial or other reasons. It also allows an advanced use of en route alternate (ERA) aerodromes in order to save fuel. In-flight replanning does not apply when the aircraft no longer continue to the intended destination via the flight plan route for reasons that could not be anticipated. In such cases, the in-flight fuel management policy dictates the commander’s course of action.

Contradiction with CAT.OP.MPA.181(d):

Wording 'has to proceed' suggests involuntary action. Wording in GM explicitly defines in-flight replanning as a voluntary course of action.

Suggestion: Delete wording ‘has to’.

response

Accepted.

Similar comments: 122, 159, 193.

comment

153

comment by: *Technical University of Munich*

I propose to increase the final reserve fuel for 30 min to 45 min for aircraft with jet engines, because the current 30 min of final reserve fuel do not provide enough time for an averagely performing flight crew to handle a complex aircraft system failure.

No aircraft should land with less than 45 min remaining flight time, as required by the FAA in the US, except after having encountered a technical problem during the final stage of a flight. The EASA-defined 15 min (in addition to the 30 min of *Final Reserve Fuel*) should be reserved for technical malfunctions and should fundamentally not be used to cover unexpected arrival delays. Therefore, the *Final Reserve Fuel* should be increased to 45 min. However, a fuel emergency should continue to be declared as it is today, when the remaining flight time upon landing is expected to be less than 30 min. Landings with less than 45 min should require a minimum fuel advisory to be submitted to ATC and a mandatory report to the authorities in order to allow EASA to assess the actual fuel starvation risk within Europe.

The planned arrival fuel for any destination should be 45 min of *Final Reserve Fuel* plus alternate fuel or at least 15 min (plus *Extra Fuel* to account for the traffic situation at the destination airport) when operating without an alternate airport. This means that the minimum arrival fuel should be at least 1 hour (plus *Extra Fuel*) at any destination.

One hour of standard arrival fuel gives an averagely performing flight crew the chance to solve a complex technical problem. Nevertheless, if high traffic is expected and/or the weather forecast is critical, more *Extra Fuel* is required.

The actual minimum fuel requirements defined by ICAO/EASA may be sufficient if the present accident rate is accepted. However, as the attached study shows, the current fuel policy is not sufficient to guarantee the long term safety target for Europe. Furthermore, a significant increase



in the accident rate is expected if the new EASA fuel strategy is adopted by a large share of European airlines. The very competitive situation in the airline market incentivizes the use of creative interpretation and circumnavigation of existing requirements in order to achieve small cost reductions by decreasing the fuel uplift. Therefore, it is reasonable to assume that airlines under high cost pressure will use strategies to reduce the arrival fuel below 45 min, if legally permissible. For example, regularly using the alternate fuel to cover *expected* delays during the flight is not desirable, but is also not illegal under current legislation. Today, fuel emergencies already occur particularly often when air traffic is affected by external disturbances, such as thunderstorms or unexpected traffic congestion.

Realistic time requirements – in terms of the average flight crew performance – should be taken into consideration when fuel limitations are defined. May the 45 min of *Final Reserve Fuel* be justified considering economic and ecological needs? Between July 2015 and June 2016, the percentage of flights landing with between 30 min and 45 min of fuel remaining was only 0.02 percent within the considered airline within the attached study. This illustrates that the proposed mitigation strategy fulfils the ICAO requirements for corrective actions, e.g. practicality and effectiveness, and can be implemented today.

Please find attached a study that supports my argument.

response

Not accepted.

The ICAO Annex 6 standard provides for 30-minute FRF for turbine-engined aircraft, and the European rules follow this standard. This limit is uniformly implemented across the world. A change of standard would imply changes at ICAO level in the first place.

The FAA fuel requirements are different from the European fuel rules, and the 45-minute FRF cannot be generalised for all US operators. The main differences with the FAA 45-minute reserve fuel requirement are the following:

- the requirement is applicable to domestic flights only;
- the 45-minute fuel is not FRF *per se*, as it includes the contingency fuel;
- the 45-min fuel requirement is calculated at average cruise burn, rather than the more restrictive 1 500 ft fuel burn;
- no destination alternate aerodrome is required when visual conditions are ensured; however, there is no requirement to have two separate runways; and
- the dispatch system in the US is different from the European one in Europe; in the US, it is a shared responsibility.

There is not enough safety data in Europe to support an increase of the FRF from 30 to 45 minutes.

During the drafting phase of the NPA ([NPA 2016-06 \(A\)](#), Section 4.1.6), [Opinion No 02-2020](#), and the CRD, Rulemaking Group (RMG) RMT.0573 and RG.RMT.0573 studied the safety cases available in the Internal Occurrence Reporting System (IORS) database. The conclusion was that proper in-flight fuel management is a critical factor in a successful outcome of the scenario that is described in the study (closure of a large airport for 60 minutes), which was provided with this comment. For



this reason, RMT.0573 provides detailed criteria for developing a robust in-flight fuel management policy, which is subject to prior approval by the competent authority.

Adequate support that is provided by ATC and the OCC to the flight crew contributes to mitigating the risks identified in the study. Therefore, the RMT.0573 addresses in-flight fuel management by providing a business case for flight watch and flight monitoring capabilities and by moving the 30-minute FRF from AMC to IR level.

Another issue that was mentioned in the study was the poor management of the failures when the crew was facing unexpected time-critical scenarios. In this regard, EASA published Opinion No 08-2019, which addresses the issue of evidence-based training (EBT).

EASA believes that an increase of the FRF to 45 minutes does not address the root cause that led to landing with less than the minimum reserve fuel. The data that were collected by RMG RMT.0573 indicated that in almost all fuel emergency cases reviewed, the pilots used extra fuel, which did not prevent fuel emergency. Therefore, an increase of fuel by 15 minutes at the planning stage may not change that outcome.

The probability for a fuel exhaustion accident following a complex failure, which was presented in the study, is an overestimate. It assumes that the fuel on board every flight upon landing is only 30 minutes, whereas in reality, the statistical distribution of fuel on board upon landing shows higher values. For example, the majority of landings are made at the intended destination, when the aircraft still carries some or all of the alternate fuel in addition to the FRF. The study also assumes that crews that believed that they had 60 minutes of fuel on board at the beginning of the simulation behaved in the same way, as would crews with only 30 minutes of fuel on board. Therefore, EASA does not accept the study as evidence of the need to increase FRF from 30 to 45 minutes to reach an acceptable level of safety performance.

The new rules (point (a)(3) of the new AMC1 CAT.OP.MPA.185 and point (b) of the new GM1 CAT.OP.MPA.185) require operators to record the fuel figures upon landing. This will allow competent authorities to oversee the actual statistical distribution of fuel on board at the end of a flight. This allows for a level-playing field among all operators.

The overall objective of RMT.0573 was to maintaining and/or improve the level of safety, while improving both commercial and environmental efficiency. EASA believes that this recommendation does not achieve that objective.

EASA will continue to assess any evidence that is relevant to this matter (e.g. new incidents, research studies, new statistics, etc.). Further to the publication of the new rules, EASA will initiate a series of safety promotion activities, which will cover in-flight fuel management.

comment

155

comment by: *Nigel Johnstone*

1.0 Introduction

The amendments listed in the NPA have been formulated in accordance with a ‘performance based’¹ approach to rule making with “safety as the main driver”, following air safety incidents in



Basle (see annex 1) and Valencia. The rule making group (RMG RMT.0573) included the Association of European Airlines, the European Low Fares Airlines Association and European Air Sports, amongst its members.

Comments on this MPA are invited by EASA via the Comment Response Tool (online) and the deadline for submission of a response is the 15th November 2016.

The NPA seeks to remove the previous prescriptive and compliance based fuel requirement rules as per;

- a) CAT.OP.MPA.150 Fuel Policy
 - b) CAT.OP.MPA.180 Selection of Aerodromes
 - c) CAT.OP.MPA.185 Planning Minima
 - d) CAT.OP.MPA.280 Inflight Fuel Policy
- And replace these with a new set of rules
- e) CAT.OP.MPA.180 Fuel Schemes General
 - f) CAT.OP.MPA.181 Fuel Planning
 - g) CAT.OP.MPA.183 Selection of Aerodromes
 - h) CAT.OP.MPA.185 Inflight Fuel Management

The amendments or changes in this NPA are significant though not new or controversial but they are flawed for the want of a robust 'turnkey' system of operational control and supervision that should overarch the whole fuel scheme, as described.

In brief the current fuel policy will be replaced with a fuel scheme. The fuel scheme will incorporate fuel planning, selection of aerodromes and inflight fuel management into the scheme as a whole whereas currently they are dealt with as separate and individual requirements.

¹Advance Notice of Proposed Amendment 2014-12 European Commission policy initiative on aviation safety and a possible revision of Regulation (EC) No 216/2008 RMT.0613 — 23.5.2014

This concept is based on ICAO SARPS 4.3.4.4 & 4.3.6.6 Annex 6 and DOC 9976 'Flight Planning and Fuel Management' and a study by the RMG which concluded

"The outcome of the study on in-flight fuel management can be summarised as follows:

·the consequences of a poor fuel planning and/or a poor selection of aerodromes will be borne during flight where the situation will need to be handled accordingly applying the in-flight fuel management policy;

·a good flight planning alone does not guarantee a safe outcome unless there is also a proper in-flight fuel management; the same principle applies to the selection of aerodromes;

·the combination of a good fuel planning policy and poor in-flight fuel management policy may develop to an unsafe fuel situation (e.g. fuel emergency, minimum fuel or similar);

·conversely, a poor flight planning will probably have a safe outcome when proper in-flight fuel management is applied (e.g. early diversion to an alternate aerodrome to refuel)."



This conclusion is a cause for concern since it concedes that the support of flying operations in the strategic and tactical phases, i.e. the rules, additional means of compliance and guidance material, of flight are inadequate.

Future rules included in NPA 2016-06(A) offers scope for significant reductions in fuel requirements which will add complexities to the management and control of these schemes, on the ground (strategic or planning) and in the air (tactical). An operator's competence to administrate flying operations with fuel schemes that permit reduced fuel reserves, confusingly described as aggressive in the NPA, will be assessed by an NAA (National Aviation Authority) or CA (Competent Authority). Those deemed competent will be allowed the advantages on offer.

This is an imperfect philosophy since it confirms the acceptance of the creation of a two tier level of compliance with the 'haves' and the 'have nots' or those with better operational control and supervision systems than others. This will make oversight of fuel schemes difficult for competent authority inspectors.

A far safer approach to operational control and supervision (from the ground and in the air) would be a prerequisite that all Part CAT operators must achieve identical levels of compliance and safety standards especially where a fuel scheme will permit flight with a fuel quantity consisting of the trip fuel plus 45 minutes reserves, only.

Comments in this document will focus entirely on 'Operational Control and Supervision', recommending a full flight dispatch system utilising licenced and qualified personnel. This is a proven system that has been safely overseeing flying operations for decades in North America and for a time, used to be required in some European states.

2.0 Operational Control and Supervision

The differences proposed in this NPA, when compared with current fuel requirements described in CAT.OP.MPA.150 (Fuel Policy) offer a scope for considerable reductions in the carriage of fuel.

In NPA 2016-06(A) appendix 1 (6.1) Paris to Madrid the fuel required is approximately 7% less and in appendix 2 (6.2) London to Buenos Aires 4% less under the new performance based regulation scheme, than current requirements. This will be welcomed by operators as this NPA potentially offers significant savings in DOCs for operators approved to incorporate such schemes into their operations.

This is nothing new as fuel schemes like this have been published in ICAO documents for decades and operators in other parts of the world have been safely benefitting from lower operating costs or increased payload/range for a similar period of time. But, what differentiates EASA proposals from similar schemes offered by foreign aviation regulators is operational control and supervision, the operational administration of their fuel schemes, the calibre and capabilities required of the personnel that oversee them.

The supervision of operations for Part.CAT operators is vital and its methodologies are a key component of continued air safety with regards to the assistance it provides to pilots. However, with flying operations performed in compliance with fuel schemes described in this NPA, it is critical.



This NPA fails to provide guidance and supplementary additional means of compliance information to operators, in this regard. This is unsatisfactory as are the scant to non-existent requirements for the supervision of flying operations, as described or not described in the 'Basic Regulation' EU216-2008

2.0.1 Flight Dispatch Systems Licenced Flight Dispatchers

ICAO Annex 6 paragraph 4.2.1.4 states

"The issue of an AOC by the state of the operator shall be dependent upon the operator demonstrating an adequate organization, method of operational control and supervision of flight operations, training programme" and paragraph 4.6.1 states

"A flight dispatcher, in conjunction with a method of control and supervision of flight operations, in accordance with 4.2.1.4 shall:

- a) Assist the pilot-in-command in flight preparation and provide the relevant information;*
- b) Assist the pilot-in-command in preparing the operational and ATS flight plans, sign when applicable and file the ATS flight plan with the appropriate ATS unit; and*
- c) Furnish the pilot-in-command while in flight, by appropriate means, with information which may be necessary for the safe conduct of the flight.*

4.6.2 In the event of an emergency, a flight operations officer/flight dispatcher shall:

- a) initiate such procedures as outlined in the operations manual while avoiding taking any action that would conflict with ATC procedures; and*
- b) Convey safety-related information to the pilot-in-command that may be necessary for the safe conduct of the flight, including information related to any amendments to the flight plan that become necessary in the course of the flight.*

Note — it is equally important that the pilot-in-command also convey similar information to the flight operations officer/flight dispatcher during the course of the flight, particularly in the context of emergency situations.

2.0.2 Qualifications of Personnel Involved with Operational Control and Supervision

I seek to encourage EASA rule makers to accept that those involved in the support of flying operations i.e. operational control and supervision (ORO.GEN.100) should be trained in accordance with standards that ought to be described under 'Regulation Air Crew' implementing rules, for example Part FD where FD stands for Flight Dispatch.

To adequately support the opportunities and potential for safety enhancements that this NPA offers, EASA should accept that a full flight dispatch system is a fundamental requirement. As previously mentioned fuel schemes described in NPA 2016-06(A) have been functional in the USA for decades because they have been administered and supported by compliance with regulations that are promulgated in 14th CFR sub-chapters D, F and G and a similar or identical system should be adopted in Europe (as it has been in the past in some European countries). Non flying personnel responsible for strategic planning (flight planning including re-clearance PDP or DPP) and tactical support (flight watch) must be trained to minimum academic standards identical to pilots (with

some minor exceptions) and defined by the regulator (EASA), achievement of which is proved by the issue of a licence of basic competency, issued by the regulator. Tier one basic standards should at least include the following subjects:

Principles of flight

Aircraft performance

Navigation

Meteorology

Aircraft general knowledge

Communications

Mass and balance

Human performance (CRM DRM)

Air law

Tier two training standards should be set by the operator and should include, at least:

Aircraft type specific knowledge

Operational procedures / SOPs

Operational IT support systems

Recurrent training including observation in the flight deck

A flight dispatcher may not undertake operational duties without a valid licence, tier two training and satisfactory training records. Currently there is no such requirement in Europe for flight dispatchers or operations officers to have undertaken recognised and approved basic training to a syllabus required and devised by the regulator.

A lack of fundamental education can create errors that are shouldered by pilots, which increases their workload, stress levels and fatigue. If NPA 2016-06(A) is to become law this must be recognised as the operational support of it will involve the determination and dissemination of safety critical information upon which safety critical decisions are made. Pilots have a right to expect that such information comes from qualified and trusted sources, underpinned by the safety regulator and overseen by a competent authority.

2.0.3 Flight Following

This NPA recognises that current operational control and supervision requirements must be improved, to support pilots that will be required to fly with fuel reserves that will be significantly less than that which they are currently used to. As such the monitoring of air movements, by personnel on the ground, will be a necessary component of a fuel scheme administration, for which approval from a competent authority is sought.

This is clearly uncharted territory for EASA as the definitions of 'Flight Following', 'Flight Monitoring' and 'Flight Watch' are poor and fail to adequately delineate the purpose and objective of a functional flight following system.



*GM13 Annex I Definitions**FUEL SCHEMES*

‘Flight following’ means the recording in real time of departure and arrival messages by operational personnel to ensure that a flight is operating and has arrived at the destination aerodrome.

‘Flight monitoring’, in addition to the requirements defined for flight following, flight monitoring includes the:

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

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

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

‘Flight watch’: in addition to all of the elements defined for flight following and flight monitoring, flight watch includes the active tracking of a flight by suitably qualified operational control personnel throughout all phases of the flight to ensure that the flight is following its prescribed route, without unplanned deviation, diversion or delay.

Definitions related to fuel schemes are provided in ICAO Doc 9976 — Flight Planning and Fuel Management (FPFM) Manual (1st Edition, 2015).

‘Current fuel scheme’: means the approved fuel scheme currently used by the operator. In the context of individual fuel schemes, ‘current fuel scheme’ means the fuel scheme in use just before applying for the approval of the individual fuel scheme. Note: fuel scheme is defined in CAT.OP.MPA.180.

‘Flight’: in the context of fuel schemes, is when the aircraft first moves under its own power.

Note “*suitably qualified*” was does this mean as there are no descriptions of what qualifications are required? This NPA is weak on training standards for personnel required to support flying operations where the carriage of fuel is compliant with approved fuel schemes.

2.0.3.1 Flight Monitoring

‘Flight Following’ also referred to as ‘Flight Watch’ is a function of operational control, overseen and supervised by personnel on the ground as a means of orchestrating network flying operations. A functioning flight watch system is usually managed by a ‘Systems Operations Control’ (SOC) centre or an ‘Operations Control’ centre (OCC) and its primary function is to maintain operational continuity by avoiding or minimising disruption. It also augments safety through the surveillance of fatigue risk management systems and minimising the impact on flight crews. The terms ‘Flight Following’ and ‘Flight Watch’ are identical; both are titles of the same function.

Flight monitoring as partially described above, is component of either flight watch or flight following, as well as a function in its own right. What this NPA omits from its description of ‘flight monitoring’ is ‘fuel monitoring’ which should be a compulsory requirement for any flight that has

been released with reserves that are less than the basic fuel formula (TF+DIV+CONT+FRES). Flight monitoring can therefore, only be supervised and run by qualified personnel, for example licenced flight dispatchers, and not 'suitably qualified' personnel – this is inadequate. The reason for this is that some types of release like a re-release or DPP flight plan should incorporate procedures that will be applicable if the fuel quantity at the decision point or reclearance point is less than the flight plan requirements. The original flight release will only be to the en-route alternate and not the desired destination, though the ATC IFR flight plan will be to the desired destination. What happens in this situation will be a mutual coordination between the aircraft commander and a qualified person, the aim of which will be to either divert the flight to the en-route alternate or recalculate the flight plan from the reclearance point to the destination so that the flight can be re-cleared and re-released to the destination, if a safe and legal landing can be achieved. If the aircraft commander concurs with the revised plan then a qualified person or a licenced flight dispatcher will provide the authority to continue with a new flight release to the destination. If he does not then the flight must divert to the ERA. The flight dispatcher will inform the SOC or OCC staff supervising the flight watch systems.

As far as this NPA is concerned the emphasis should be placed on flight monitoring by qualified people, whereas Part CAT should be amended so that flight watch is a compulsory requirement as a part of operational control and supervision for all Part CAT flying operations.

The NPA fails to adequately describe the high tactical importance of a system of flight monitoring of flights, operating with less than the basic fuel formula reserves, as a component of operational control and supervision for all part CAT flying operations. The objectives, deliverables and outcomes of flight monitoring are not clearly described or the motives for them. For clarity on this subject, these are my thoughts.

Personnel responsible for flight monitoring must maintain continual surveillance and communications with the flight, throughout the flight of:

Fuel consumption

LNAV VNAV deviations

Weather Enroute Destination and nominated diversion airfields

NOTAMS

With regards to weather and NOTAMS, only pertinent information should be communicated to the aircrew

2.0.4 Flight Release

Any flight planned in accordance with this NPA or flights released in accordance with Part CAT, should be formally released by way of a flight release. The flight release should be a legal authority to fly, generated by a person deemed qualified to perform such a duty by the regulatory and approving authority and the operator (employer). It should be a précised description of the flight detailing:

the airworthiness of the aircraft (MEL);

performance restrictions;



the date and time validity;

The flight number;

The minimum fuel supply

Reclearance information as applicable;

Enroute and destination diversions if applicable;

And, if accepted will be signed by the aircraft commander.

The flight release may be appended to the flight plan. The release will also determine the flight watch and flight monitoring methodology.

A flight should only be release by a qualified or licenced person or in other words a flight may not depart unless it has been legally released by a qualified person and that this has been accepted by the aircraft commander.

3.0 Conclusion

Current requirements for operational control and supervision of Part CAT flying operations are inadequate.

Proposed fuel schemes must be administered by qualified personnel i.e. Flight Dispatchers, as described in ICAO Annex 6 chapter 4.6.1 and Chapter 10. EASA must undertake rule making tasks for the requirement for the initiation of a flight dispatch system in Europe, similar or identical to that which operates in the USA in accordance with CFR Part 65, 91, 121.

No flight can depart without a flight release authorised by a qualified and licenced flight dispatcher.

Flight monitoring, as a component of flight watch, must be overseen by qualified and licenced personnel not 'suitably qualified' personnel.

Flight watch should be a requirement of all Part CAT flying operations.

ANNEXES

Annex 1 Low Fuel Incidents/Accidents Final Reports

The hyperlinks listed below are pertinent to NPA 2016-06(A) and all demonstrate poor levels of control and supervision.

Avianca B707-321 Fuel Exhaustion New York 1990

<http://www.nts.gov/investigations/AccidentReports/Reports/AAR9104.pdf>

Hapag Lloyd A310 Fuel Exhaustion Vienna 2000

http://versa.bmvit.gv.at/uploads/media/A310_GZ_85007_vom_12._Juli_2000_2_03.pdf

Ryanair B737-800 Valencia 2010 http://www.fomento.gob.es/nr/rdonlyres/5b31c35a-eed0-4abf-860b-d4bd396f5b04/118469/2010_010_in_final_eng.pdf

Lufthansa A319 Milan 2010 <http://www.ansv.it/cgi-bin/ita/Rapporto%20D-AKNH.pdf>



response

Partially accepted.

This comment refers to the operational control system and the implication for flight monitoring and flight watch in fuel planning and management on the one hand, and on the other hand, to the importance of proper qualification and licensing of the FOOs/FDs that are involved in fuel planning and management.

These topics were addressed and significantly improved in [Opinion No 02-2020](#) and the related draft AMC and GM, taking on board numerous comments and suggestions from the commenters.

Point ORO.GEN.110 (c) requires the operator to ‘ensure a system for exercising operational control over any flight operated under the terms of its certificate’, while point ORO.GEN.110 (e) contains an overarching requirement on personnel proficiency and instruction.

The new AMC1 ORO.GEN.110(c)&(e), which contains a training programme for FOOs/FDs, was added for operators that apply a basic fuel scheme with variations or an individual fuel scheme.

The new AMC is in line with the safety objective of point ORO.GEN.110 (e). However, this does not imply that the FOOs will share responsibility for a flight’s operational control with the pilots, nor that a licence is required.

The ICAO requirement for FOOs/FDs, which is quoted in the comment (Annex 6, Part I, Chapter. 4.6.1), is applied differently in the European rules, compared to the FAA rules. Whereas FAA requires a licence for FDs, the European rules do not require that FDs are licensed. This does not contradict the point ORO.GEN.110 (e) requirement, according to which such personnel must have adequate training and competencies.

As for the suggestion that flight watch should be mandatory for all CAT operators, this requirement would be disproportionate to less complex CAT operators, and was therefore not accepted. The flight-watch capability is mandatory only for operators that apply an individual fuel scheme or a basic fuel scheme with variations in some cases. If operators do not have flight monitoring or flight watch capabilities in their operational control system, they have to apply a basic fuel scheme, which is more prescriptive than the other two types of fuel schemes.

Part-ARO includes now new guidelines for competent authorities, to support them in assessing individual fuel schemes. EASA plans to launch more safety promotion activities in the next 2 years, to continue supporting competent authorities in various forms — from extended guidance material to focused consultations.

Extending the scope of RMT.0573 to develop requirements for licensed flight dispatch personnel in Europe is not intended at this stage, and therefore, this part of the comment is not accepted.

However, the new training programme that is published in AMC1 ORO.GEN.110(c)&(e) could be the first step towards developing new regulatory material in this direction. If the issue of an FD license is considered ripe for a new RMT (with a full regulatory impact assessment (RIA)), a proposal can be submitted to EASA at this link: <https://www.easa.europa.eu/document-library/rulemaking-programmes/rulemaking-proposal>.

The definitions of ‘flight monitoring’ and ‘flight watch’ are identical with the ones published in ICAO Doc 9976 ‘Flight Planning and Fuel Management (FPM) Manual’ (1st Edition, 2015).



Additional AMC and GM to Annex I (Definitions) on the relevant safety information that is required in the definition of ‘flight monitoring’ were developed to enable FOOs/FDs to filter the information that they need to pass on to the pilots during flight.

The draft rules proposed in the NPA were significantly improved following the comments received, also by enhancing the FDs’ responsibilities, training, and involvement in the safe development of the more performance-based fuel schemes.

Lastly, the Explanatory Note to [Opinion No 02-2020](#) rightly emphasises the relevance of the advanced flight management systems, such as flight monitoring and flight watch, for fuel planning and management for operators with enhanced capabilities.

Related or similar topic: comments 70, 71, 72, 73, 74, 75, 125.

comment

157

comment by: IATA

Comment 2 (in relation with comment 1)

CAT.OP.MPA.181 Fuel scheme — fuel planning and in-flight replanning policy

(c) (6) additional fuel, if required by the type of operation, which shall be the amount of fuel to allow the aeroplane to land at ~~perform a safe landing to~~ **[IATA Comment]** an en-route alternate aerodrome (fuel ERA) in the event of an engine failure or loss of pressurization, whichever requires a greater amount of fuel, based on the assumption that such a failure occurs at the most critical point along the route; this additional fuel is only required if the minimum amount of fuel calculated in accordance with (c)(2) to (c)(5) above is not sufficient for such an event;

[IATA Comment] Safe landing is defined with Final reserve fuel but the critical scenario only requires 15 min.

response

Accepted.

See the response to comment 120.

comment

158

comment by: IATA

Comment 3

CAT.OP.MPA.181 Fuel scheme — fuel planning and in-flight replanning policy

(b) The operator shall ensure that the fuel planning of flights is based upon at least:

(1) procedures ...

(2) the operating conditions under which the flight is to be conducted including:

(i) aircraft fuel consumption data;



(ii) anticipated masses;
 (iii) expected meteorological conditions;
(iv) the effects of deferred maintenance items and/or configuration deviations; and
 (v) anticipated delays.

[IATA Comment] Switch (iv) and (v) in order to allow the modification necessary in (c)

(c) The operator shall ensure that the preflight calculation of usable fuel required for a flight includes:

(1) taxi fuel, ...

(2) trip fuel, which shall be the amount of fuel required to enable the aeroplane to fly from take-off, or from the point of in-flight replanning, until landing at the destination aerodrome, taking into account the operating conditions of (b) above except (v);

[IATA Comment] This is necessary because fuel for anticipated delays goes into EXTRA FUEL.
 ...

(7) extra fuel, to take into account anticipated delays or specific operational constraints; and

response Partially accepted.

See also the response to comment 121.

comment 159

comment by: IATA

Comment 4

CAT.OP.MPA.181 Fuel scheme — fuel planning and in-flight replanning policy

(d) The operator shall ensure that in-flight replanning procedures for calculating usable fuel required when a flight ~~has to~~ proceeds along a route or to a destination aerodrome other than originally planned includes: (c)(2) to (c)(8) above.

[IATA Comment] « has to » is in contradiction with “voluntarily changing”

GM1 CAT.OP.MPA.181(d)

Fuel scheme — fuel planning and in-flight replanning policy

IN-FLIGHT REPLANNING

In-flight replanning means voluntarily changing the final destination aerodrome or any alternate aerodrome or the rest of the route to the destination aerodrome after the flight has commenced when the flight could be completed as originally planned.



response

Accepted.

Similar comments: 122, 146, 193.

comment

160

comment by: IATA

Comment 5**CAT.OP.MPA.182 Fuel schemes — fuel planning and in-flight replanning policy**

...

(v) extra fuel, if specified by the commander to take into account anticipated delays or specific operational constraints; and

(vi) discretionary fuel, if specified by the commander

IATA Comment: add the term discretionary fuel

response

Accepted.

See also response to comment 123.

comment

161

comment by: IATA

Comment 6**CAT.OP.MPA.246 Meteorological conditions — aeroplanes**

In addition to CAT.OP.MPA.245, on IFR flights with aeroplanes, the commander shall only continue beyond:

(a) the decision point when using the reduced contingency fuel (RCF) procedure; or

(b) the pre-determined point when using the pre-determined point (PDP) procedure or the point of no return when using the isolated-aerodrome procedure,

[IATA Comment] PDP is still present in in flight fuel management. But half of the procedure is missing.

We believe PDP should be described in “Fuel scheme with variation” because it is a procedure which exists for long time and the isolated aerodrome is just a specific way of using it.

AMC2 CAT.OP.MPA.181 Fuel scheme — fuel planning and in-flight replanning policy**FUEL SCHEME WITH VARIATIONS — TAXI FUEL— AEROPLANES**

Taxi fuel: the operator may use statistical taxi fuel.

FUEL SCHEME WITH VARIATIONS — CONTINGENCY FUEL— AEROPLANES

...

(e) Predetermined point (PDP) procedure

If the operator's fuel policy includes planning 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 (c)(1) or (c)(2):

(1) The sum of:

(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 (a)(3);

(iv) additional fuel if required, but not less than:

(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 2 hours, whichever is less; or

(B) for aeroplanes with turbine engines, fuel to fly for 2 hours at normal cruise

consumption above the destination aerodrome, this should not be less than final reserve fuel; and

(v) extra fuel

(vi) discretionary fuel if required by the commander.

(2) 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 (a)(3);

(iv) additional fuel if required, but not less than:

(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 2 hours, whichever is less; 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, this should not be less than final reserve fuel; and

(v) extra fuel

(vi) discretionary fuel if required by the commander.

AMC1 CAT.OP.MPA.185(a) Fuel scheme — in-flight fuel management policy — aeroplanes

...

(3) Additional conditions for specific procedures



(i) On a flight using the reduced contingency fuel (RCF) procedure to proceed to the destination 1 aerodrome, the commander should ensure that the usable fuel remaining at the decision point is 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;

(C) destination 1 aerodrome alternate fuel if a destination 1 alternate aerodrome is required; and

(D) final reserve fuel.

(ii) On a flight using the predetermined point (PDP) procedure to proceed to the destination aerodrome, the commander should ensure that the usable fuel remaining at the PDP is 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; and

(C) additional fuel if required, but not less than:

(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 2 hours, whichever is less; or

(B) for aeroplanes with turbine engines, fuel to fly for 2 hours at normal cruise consumption above the destination aerodrome, this should not be less than final reserve fuel.

response

Accepted.

The PDP is not a variation and it was deleted.

Identical comment: 126.

comment

166

comment by: *European Cockpit Association*

ECA Comment on CAT.OP.MPA.181:

New CAT.OP.MPA.181 is introduced as follows:

CAT.OP.MPA.181 Fuel scheme — fuel planning and in-flight replanning policy

(a) The operator shall establish as part of the fuel scheme a fuel planning and in-flight replanning policy to ensure that every aeroplane carries a sufficient amount of usable fuel to complete the planned flight safely and to allow for deviations from the planned operation.



- (b) The operator shall ensure that the fuel planning of flights is based upon at least:
- (1) procedures contained in the operations manual and:
- (i) current aircraft-specific data derived from a fuel consumption monitoring system; or, if not available;
- (ii) data provided by the aircraft manufacturer; and
- (2) the operating conditions under which the flight is to be conducted including:
- (i) aircraft fuel consumption data;
- (ii) anticipated masses;
- (iii) expected meteorological conditions;
- (iv) anticipated delays; and
- (v) the effects of deferred maintenance items and/or configuration deviations.

ECA suggests addition of a point:

(vi) anticipated departure and arrival routes and runways;

ECA comment: As mentioned before, pre-flight and in-flight replanning should be treated equally.

Continued: CAT.OP.MPA.181 Fuel scheme

(c) The operator shall ensure that the pre-flight calculation of usable fuel required for a flight includes:

(1) taxi fuel, which shall not be less than the amount expected to be used prior to take-off;

ECA agrees with this addition. However we recommend addition: to take into account runway usage, anticipated delays and departure taxi routes.

response

Partially accepted.

First part of the comment: accepted.

A new point CAT.OP.MPA.181 (b)(2)(v) that contains anticipated departure and arrival routings and runways was created.

Second part of the comment: not accepted.

The anticipated departure and arrival routings are addressed in the trip fuel, which must include arrival and departure routes and runways.

The IR and point (a) of the new GM1 CAT.OP.MPA.181 address taxi fuel.



comment	<p>167 comment by: <i>European Cockpit Association</i></p> <p>ECA Comment on CAT.OP.MPA.196:</p> <p>CAT.OP.MPA.196 - Refuelling with an engine running — aeroplanes, is introduced as follows:</p> <p>(a) Refuelling with an engine running shall only be conducted:</p> <p>1) in unforeseen and exceptional circumstances;</p> <p>...</p> <p>ECA Comment: it is acceptable if only in unforeseen and exceptional circumstances.</p>
response	<p>Partially accepted.</p> <p>EASA considered that words such as ‘unforeseen’ and ‘exceptional’ could be interpreted in different ways, unless clearly defined. Therefore, the rule text was changed to describe the cases in which such procedures would be justified.</p> <p>The rule was renumbered and included in the new point CAT.OP.MPA.187.</p>
comment	<p>174 comment by: <i>Airbus</i></p> <p>Page 37 / Paragraph 3.6 – Sub paragraph 1. – Deletion of CAT.OP.MPA.106 Use of isolated aerodromes</p> <p>PROPOSED TEXT / COMMENT:</p> <p>It is understood that requirements applicable to all types of aerodromes to be selected for fuel schemes are gathered at the same place, but splitting half of this requirement in 2 parts, with one sent to an AMC, i.e. with a different place and requirement level.</p> <p>CAT.OP.MPA.106 could be fully added as it is today in CAT.OP.MPA.183, including CAT.OP.MPA.106(b).</p> <p>RATIONALE / REASON / JUSTIFICATION:</p> <p>There is a risk for confusion, and loss of consideration of this requirement which aims at securing the fuel quantity required to reach an isolated aerodrome.</p>
response	<p>Not accepted.</p> <p>The objective of splitting point CAT.OP.MPA.106 to move a part to the new point CAT.OP.MPA.182 (point CAT.OP.MPA.183 in the NPA) and the rest to an AMC, which is related to ‘fuel scheme with variations’ (new AMC2 CAT.OP.MPA.182). This AMC is intended to provide an alleviation and the necessary flexibility to operate to an isolated aerodrome.</p>

This was also based on the general principle of including the safety objective in the IR, whereas the means of achieving the safety objective should be described in an AMC. This way, rules can be more flexible, allowing for a performance-based approach.

comment

176

comment by: Airbus

Page 39 / Paragraph 3.6 – Sub paragraph 5. – Deletion of CAT.OP.MPA.181 Fuel scheme – fuel planning and in-flight replanning policy

PROPOSED TEXT / COMMENT:

CAT.OP.MPA.181(c)(6) requires operators to consider as additional fuel the fuel quantity necessary to reach a fuel ERA, considering fuel consumption increase resulting in an engine failure, a cabin depressurization, which are required for ETOPS operations.

There may be other types of aircraft conditions (e.g. dispatch under MEL / CDL) resulting in fuel consumption increase. Current requirement will not account for those particular conditions, neither AMC to CAT.OP.MPA.181 which does not exist for paragraph (c)(6).

RATIONALE / REASON / JUSTIFICATION:

Anticipation of risk for insufficient fuel carriage for fuel ERA in specific conditions (special operations, flight under MEL/CDL...).

response

Partially accepted.

Point CAT.OP.MPA.181 (b)(2)(iv) was amended to reflect any increase in fuel consumption that is caused by the aircraft condition that applies during the whole flight.

comment

177

comment by: Airbus

Page 42 / Paragraph 3.6 – Sub paragraph 9. – Deletion of CAT.OP.MPA.196 Refuelling with an engine running – aeroplanes

PROPOSED TEXT / COMMENT:

CAT.OP.MPA 196(a)(3) only allows refueling with one engine running for aircraft using JET A or JET A1 fuel. Suggestion to extend the list of authorized fuels to more fuel types used by civil aircraft worldwide (e.g. TS-1) or to allow this procedure with all certified civil jet fuels.

RATIONALE / REASON / JUSTIFICATION:

Part CAT is used and applied by National Aviation Authorities worldwide, therefore limiting the number and references of jet fuel to be used may be too constraining for operators.

response Accepted.

The new point CAT.OP.MPA.187 (point CAT.OP.MPA.196 in the NPA) was revised to allow for other types of fuel that have a flash point above 38°C and are approved by the competent authority of the operator.

comment 178 comment by: Airbus

Page 42 / Paragraph 3.6 – Sub paragraph 10. –CAT.OP.MPA.245 Meteorological conditions – all aircraft

PROPOSED TEXT / COMMENT:

Requirement seems incomplete: (...) identified at the end of the requirement. Is it voluntarily made or a typo?

response Noted.

The ellipsis ‘(...)’ is not a typographic error, but an editorial convention, which is explained at the beginning of Chapter 3 of the NPA. An ellipsis is added at the end of a point to indicate that the rest of its text remains unchanged.

comment 179 comment by: Airbus

Page 42 / Paragraph 3.6 – Sub paragraph 12. – Deletion of CAT.OP.MPA.280

PROPOSED TEXT / COMMENT:

This requirement is transferred as an AMC (AMC1 to CAT.OP.MPA.185(a)), i.e. with a lower level/importance.

This paragraph could be integrated as is in CAT.OP.MPA.185 requirement.

RATIONALE / REASON / JUSTIFICATION:

There is a risk for confusion, and loss of consideration of this requirement.

response Not accepted.

The safety objective that operators must fulfil is in point CAT.OP.MPA.185 (IR level), while the related AMC that contain various degrees of flexibility (AMC1 CAT.OP.MPA.185, AMC2 CAT.OP.MPA.185, and AMC3 CAT.OP.MPA.185) provide different means to fulfil that safety objective. Moving the text of point CAT.OP.MPA.280 on in-flight fuel management to the AMC ensures more flexibility in the means of compliance, while keeping those AMC linked to the higher-level safety objective of point CAT.OP.MPA.185.

Similar comment: 186.

comment	191	comment by: <i>FNAM</i>
response	<p>Accepted.</p> <p>The term 'policy' was taken over from the current fuel rules in the Air OPS Regulation. It is used to describe a general consistent approach with well-defined processes and procedures.</p> <p>The current fuel scheme is based on three pillars, i.e. the fuel planning policy, the selection of aerodrome policy, and the in-flight fuel management policy.</p> <p>The term 'policy' should apply to both aeroplanes and helicopters. However, the changes to the fuel policy for helicopters are fewer than the changes to the aeroplane fuel policies.</p> <p>A consistency check to the entire text was carried out, and adjustments were made, where necessary.</p>	

comment	193	comment by: <i>FNAM</i>
	<p>CAT.OP.MPA.181</p> <p>Regarding the paragraph CAT.OP.MPA.181, in order to ensure consistency between the ICAO requirements and the European ones, the FNAM suggests to rephrase the paragraph (b)(2)(iv) of the "anticipated delays" to comply with the one stated in the ICAO Annex 6 : "air traffic services procedures, restrictions and anticipated delays;"</p> <p>Besides, the FNAM thanks the EASA for adding the last item "the effects of deferred maintenance items and/or configuration deviations." This will allow a better consistency between the ICAO requirements and the European ones. Furthermore, regarding the definition of the "trip fuel" in the paragraph (c) (2), the FNAM suggests to replace this paragraph by the following in order to be consistent with the fact that the extra fuel is already taking into account the anticipated delays:</p> <p>"(c) The operator shall ensure that the preflight calculation of usable fuel required for a flight includes:</p> <p>(1) taxi fuel, taxi fuel, which shall not be less than the amount expected to be used prior to take-off;</p>	



(2) trip fuel, which shall be the amount of fuel required to enable the aeroplane to fly from take-off, or from the point of in-flight replanning, until landing at the destination aerodrome, taking into account the operating conditions of (b) above *except (iv)*;

[...]

(8) discretionary fuel, if required by the commander.”

In addition to the comments made here-above, the FNAM thinks it would be a good idea to suppress the words “has to” in the paragraph (d) which is in contradiction with the “voluntarily changing” concept at the heart of the “in-flight replanning” definition :

“(d) The operator shall ensure that in-flight replanning procedures for calculating usable fuel required when a flight *proceeds* along a route or to a destination aerodrome other than originally planned includes: (c)(2) to (c)(8) above.”

response

Partially accepted.

On anticipated delays: the term ‘anticipated delays’ that is used in point CAT.OP.MPA.181 includes ‘restrictions’ and ‘air traffic service procedures’. This is exemplified in the new point (j) of GM1 CAT.OP.MPA.181.

See also the response to comment 145.

On the definition of trip fuel: points CAT.OP.MPA.181 (b) and (c) were changed, taking into account this suggestion as well as those included in other comments.

Similar comment: 121.

On deleting ‘has to’ in point CAT.OP.MPA.181 (d): The suggestion was accepted.

Similar comments: 122, 146, 159.

comment

194

comment by: FNAM

CAT.OP.MPA.182

In order to ensure consistency, the FNAM suggests to add the following paragraph:

“(v) extra fuel, to take into account anticipated delays or specific operational constraints; and
(vi) discretionary fuel, if specified by the commander”

response

Accepted.

The NPA-proposed new text of point CAT.OP.MPA.182 was moved to AMC1 CAT.OP.MPA.181.

Similar comment: 78.



comment

195

comment by: FNAM

CAT.OP.MPA.185

Regarding the CAT.OP.MPA.185, the FNAM would like some standardization between the descriptions made for the declaration of the ‘minimum fuel’ state and the fuel emergency situation within the different parts of the 965/2012 regulation: CAT, NCC and SPO.

The FNAM was surprised to see the introduction of the phraseology “MINIMUM FUEL” and “MAYDAY MAYDAY MAYDAY FUEL” in the 965/2012 regulation without adding, at the same time, the corresponding requirements in the SERA and in the ATM/ANS regulations. Therefore, to ensure consistency between the several European regulations, the FNAM suggests to add in the SERA and in the ATM/ANS regulations the adequate corresponding requirements regarding the “MINIMUM FUEL” state and the declaration of a fuel emergency situation “MAYDAY MAYDAY MAYDAY FUEL”.

In the current regulation, the “MINIMUM FUEL” is not a declaration which confers any special treatment by ATC (it is not an emergency situation) but an information message. Controllers should bear in mind that an emergency situation is possible should any additional delay occur. Hence, controllers are not required to provide priority to pilots of aircraft that have indicated or suggested that they are becoming short of fuel or have used the phraseology “MINIMUM FUEL”. The term “MINIMUM FUEL” indicates that the pilot, intending to land at a specific aerodrome, calculates that any change to the existing clearance to that aerodrome might result in landing with less than the planned final reserve fuel.

Furthermore, the FNAM would like the EASA to add some clarifications regarding this IR: Pilots & controllers shall keep in mind that PAN remains a universally prescribed means of declaring any urgency situation which requires assistance including low fuel emergency. In such case the declaration, whatever its cause, shall require priority to be given. Controllers & pilots should also understand that a PAN or a MAYDAY declaration arising because of low fuel may not necessarily use the fuel-specific phraseology suggested in PANS-ATM - pilot may make a standard form declaration first and only once it has been acknowledged explain that the problem is low fuel and priority corresponding to the declaration made is required.

response

Partially accepted.

Regulation (EU) 2016/1185, amending Regulation (EU) No 923/2012, on common rules of the air (published on 21 July 2016), and EASA ED Decision 2016/023/R (published on 14 October 2016), amending the AMC and GM to the rules of the air, introduced the rules on the ‘MINIMUM FUEL’ declaration in the European regulatory system before the Air OPS rules. GM1 SERA.11012 ‘Minimum fuel and fuel emergency’ provides the following clarification:

The declaration of MINIMUM FUEL informs ATC that all planned aerodrome options have been reduced to a specific aerodrome of intended landing, and any change to the existing clearance may result in landing with less than planned final reserve fuel. This is not an emergency situation but an indication that an emergency situation is possible should any additional delay occur.



In addition, EASA ([SIB\) 2018-08](#) was published on 8 May 2018, which reminded air operators and ATC of the relevant requirements in ICAO Annex 6 and Doc 4444, as well as in Part-SERA. Moreover, SIB 2018-08 points to the detailed explanations and scenarios for the use of the 'MINIMUM FUEL' declaration, which are provided in ICAO Doc 9976 'Flight Planning and Fuel Management (FPFM) Manual'.

The new fuel rules introduce the requirements for the 'MINIMUM FUEL' and a 'MAYDAY MAYDAY MAYDAY FUEL' declarations in the Air OPS Regulation, as well as more examples of their use in the new GM1 CAT.OP.MPA.185.

The 'PAN' declaration is not a standard declaration for fuel, but for other urgencies.

Following publication of [Opinion No 02-2020](#), EASA will initiate safety promotion activities to increase the awareness and understanding of the differences between the various fuel-related messages amongst pilots and ATC personnel.

comment

196

comment by: FNAM

CAT.OP.MPA.196

The FNAM thinks introducing the new requirement CAT.OP.MPA.196 Refuelling with an engine running aeroplane, referring to the SIB 2014-16, is a good idea. Therefore, we would like to thank EASA for such an initiative.

response

Noted.

comment

197

comment by: FNAM

CAT.OP.MPA.246

PDP is still present in the "in flight fuel management". Hence, we suggest to replace the (b) of the CAT.OP.MPA.246 with the following:

"(b) the pre-determined point when using the pre-determined point (PDP) procedure or the point of no return when using the isolated-aerodrome procedure,"

response

Not accepted.

PDP was replaced with 'point of no return' in all related rules (IRs and AMC). The 'point of no return' is therefore also used in the new AMC2 CAT.OP.MPA.182. PDP can only be used in the context of isolated aerodromes, as a variation. Other uses of the PDP are not allowed.

The new rules, for the purpose of saving fuel, allow for other variations instead of PDP.



comment	<p>211 comment by: <i>Finnish Transport Safety Agency</i></p> <p>CAT.OP.MPA.181 point (b)(1)(ii)</p> <p>(b) The operator shall ensure that the fuel planning of flights is based upon at least:</p> <p>(1) procedures contained in the operations manual and:</p> <p>(i) current aircraft-specific data derived from a fuel consumption monitoring system; or, if not available;</p> <p>(ii) data provided by the aircraft manufacturer; and</p> <p>Data provided by the aircraft manufacturer is not accurate enough, therefore Finland suggests that the data could only be accepted for basic fuel scheme.</p> <p>GM1 CAT.OP.MPA.181(b)(1) addresses the problem, but the issue should be mentioned at a higher level than GM.</p>
response	<p>Not accepted.</p> <p>The IR states ‘if not available’, the intent of which is quite clear.</p> <p>To use AMC2 CAT.OP.MPA.181 (basic fuel scheme with variations) and AMC3 CAT.OP.MPA.181 (individual fuel schemes), a fuel monitoring programme is required, which means that the manufacturer data is available only for the basic fuel scheme, where other mitigations are available.</p>

3. Proposed amendments — 3.7. Draft AMC/GM (draft EASA Decision) — Part-CAT p. 44-64

comment	<p>01 comment by: <i>KLM</i></p> <p>page 59 point 27 table 1</p> <p>The table is too complex.</p> <p>the criteria used are not correct; the intention of planning minima is to create a margin in weather and not that a facility will break down.</p> <p>therefore an increment to the minima of the planned facility is a more simple and realistic way to plan a flight with.</p> <p>a better table would be:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Type of approach</td> <td style="width: 33%;">Ceiling</td> <td style="width: 33%;">visibility</td> </tr> </table>	Type of approach	Ceiling	visibility
Type of approach	Ceiling	visibility		



Precision approach procedures CAT I/ II/ III	Prescribed DH/DA plus 200 Ft	Prescribed visibility plus 400 mtrs
APV/LPV	Prescribed DH/DA plus 200 ft	Prescribed visibility plus 500 mtrs
Non Precision approach procedures	Prescribed MDH/MDA plus 200 ft	Prescribed visibility plus 600 mtrs
Circling	Circling	circling

No crosswind planning minima shall be specified here. Those are aircraft type related and are specified by the aircraft manufacturer in the FCOM and AFM. gusts are already included in GM2.CAT.OP.MPA.185 planning minima for IFR flights

APV is missing

no definition is given for category SA-CAT I

no definition is given for Type A instrument approach

an addition to circling minima is too much as these minima are already allowing a visual approach procedure

response

Partially accepted.

The table that contains the planning minima for the basic fuel scheme (in the new AMC1 CAT.OP.MPA.182) was changed, based on the ETOPS table. Another table was created for the basic fuel scheme with variations (in the new AMC2 CAT.OP.MPA.182), which proposes different values.

See also response to comment 214.

comment

07

comment by: KLM

page 44 point 1. adequate aerodrome

"An adequate aerodrome is an aerodrome where weather conditions are not considered."

this is illogical and will start the discussion again how to call an aerodrome with weather considered; a suitable aerodrome?

if the intention is to say that weather only has to be considered when required then the text should reflect that or specify a definition of an adequate aerodrome with weather considered.

This is going to create a lot of confusion.

better to add to the definition:

, unless the aerodrome is used for flight planning and with applicable weather minima.



response Not accepted.

GM1 CAT.OP.MPA.107 was modified to clarify that the adequate aerodrome does not require a weather check.

comment 08 comment by: KLM

Page 46 point 5. (e) (4)

Why should there be a requirement for RNP4 and RNAV1 specifically when an operator wants to make use of an individual fuel scheme. Maybe no operations in such airspace is applicable and then still the approval or capability should be there.

These demands have no direct influence on the capability to make use of an individual fuel scheme and therefore 4 and 5 have to be deleted.

response Not accepted.

The PBN rules were recently amended, and RNP APCHs are no longer a pre-approved item (except for an RNP AR APCH). In the coming years, RNP APCHs are expected to be extensively used. Therefore, it is important to increase the operators' capabilities if operators decide to use individual fuel schemes. Also in case of abnormal procedures, the pilot may proceed to aerodromes that are not previously planned; therefore, the rule was drafted in a way to provide as many landing options as possible.

Similar comments: 20 and 47.

comment 11 comment by: KLM

page 52 point 10.(b)

Delete HF as specific alternate means of communication and specify only that an alternative means should be available. This may be satcom or telephone or anything else that enables communications with the home base but not only HF.

The text should be generic requiring an alternative means.

No examples to be specified.

response Partially accepted.

GM (such as points (g), (h), and (i) of the new GM1 CAT.OP.MPA.180) may contain one or more examples of tools that enable compliance with the safety objective of the IR. GM only includes guidance and is not legally binding. Moreover, the list of examples in GM1 CAT.OP.MPA.180 is not exhaustive.

However, the text was redrafted to clarify that there have to be two independently available communications systems on board.

comment 12 comment by: KLM

page 54 point 17

Unforeseen factors such as...deviations of an individual aeroplane...

should be covered in the programme for each individual aeroplane in the high/low fuel consumption programme and consequent correction in the flight plan calculation. Not to be included in the contingency fuel as this has to be accounted for in the flight plan calculation of the trip fuel already.

The specified examples to be deleted and not to specify taxi times before take-off as this is not unforeseen.

response Partially accepted.
Point (g) of GM1 CAT.OP.MPA.181 was further revised for precision. The taxi time indicated refers to any extended taxi time compared to the one included in the flight plan.

comment 13 comment by: KLM

page 55 point 20

(a) and (c)(2) should say Fuel ERA instead of weather permissible ERA.

(c)(3) delete MLS as no longer in use at any aerodrome.

response Partially accepted.
First point: accepted.
In GM2 CAT.OP.MPA.181(c)(3), 'weather-permissible ERA aerodrome' was replaced with 'fuel ERA aerodrome'.
Second point: not accepted.
The microwave landing system (MLS) is in use in aerodromes outside Europe. However, to accommodate all requests, instrument landing system (ILS) and MLS occurrences were replaced with 'type B instrument approach operation', to be in line with the planning minima table and the new ICAO instrument approach operations.



comment	<p>14</p> <p>page 57 point 25 first alinea, last sentence.</p> <p>The text:</p> <p>it also allows an advanced use of en route alternate (ERA) aerodromes in order to save fuel.</p> <p>is unclear and has to be deleted.</p> <p>For in flight replanning, a point of replanning is used but nowhere in such planning is the use of en route alternate aerodromes defined. therefore unclear and to be deleted.</p>	comment by: <i>KLM</i>
response	<p>Partially accepted.</p> <p>This comment refers to the in-flight replanning of GM1 CAT.OP.MPA.181 in NPA 2016-06 (A), the last sentence of the first paragraph.</p> <p>The sentence was deleted and replaced with another one that explains the intention more clearly. At the same time, the entire paragraph was also improved for clarity, and is now included in the new point (I) of GM1 CAT.OP.MPA.181.</p>	
comment	<p>15</p> <p>page 58 point 27. (a) the weather has to be at or above landing minima 1 hour before and ending 1 hour after the estimated time of arrival.</p> <p>the 1 hour before is to be replaced by;</p> <p>the earliest time of arrival.</p> <p>an hour before the estimated arrival time is too much and not realistic as flights may arrive minutes before the scheduled arrival time but never an hour.</p> <p>same goes for (c) page 58</p>	comment by: <i>KLM</i>
response	<p>Not accepted.</p> <p>AMC1 CAT.OP.MPA.183(d)&(e) 'Basic fuel scheme — basic alternate aerodrome policy — aeroplanes BASIC FUEL SCHEMES — BASIC ALTERNATE AERODROME POLICY — AEROPLANES' was renumbered and redrafted as AMC1 CAT.OP.MPA.182 'Fuel/energy scheme — aerodrome selection policy — aeroplanes BASIC FUEL SCHEME — TAKE-OFF ALTERNATE AERODROME'.</p> <p>The proposal is not accepted because the 1 hour before the estimated time of arrival is possible and especially relevant for cargo operations, business flights, charter flights or in routes that are subject to ATC redirecting or to unpredicted strong tail winds.</p>	

comment	<p>16 comment by: KLM</p> <p>page 47 point 6.(c)(5) MAYDAY fuel declarations to be replaced by low fuel declarations. which is similar to minimum fuel declaration and can be deleted.</p>
response	<p>Not accepted.</p> <p>This comment is related to the new GM3 CAT.OP.MPA.180.</p> <p>The ‘MINIMUM FUEL’ declaration to the ATC and the ‘MAYDAY MAYDAY MAYDAY FUEL’ declaration are consistent with the ICAO terminology and phrasing (Doc 9976 ‘Fuel Planning and Fuel Management Manual’, 1st edition, 2015) as well as with the new Air OPS rules (see point CAT.OP.MPA.185 and related AMC and GM).</p> <p>The two declarations have different meanings and trigger different responses from the ATC; they may also require different actions from the commander.</p> <p>The phrasing of the new points (d)(6) and (7) of GM3 CAT.OP.MPA.180) remains as proposed in the NPA. Additional explanations were added (new GM1 CAT.OP.MPA.185 Fuel/energy scheme — in-flight fuel/energy management policy — aeroplanes BASIC FUEL SCHEME) with examples of scenarios in which the ‘MINIMUM FUEL’ declarations should be used.</p>
comment	<p>18 comment by: KLM</p> <p>page 58 point 27.(b)(2) or (2) two destination alternate aerodromes are selected. should be replaced by: or when not complying to these required minima two destination alternates are selected that comply with the required alternate planning weather minima.</p>
response	<p>Partially accepted.</p> <p>This comment refers to AMC1 CAT.OP.MPA.183(d)&(e) of NPA 2016-06 (A) (the new AMC1 CAT.OP.MPA.182).</p> <p>The entire point CAT.OP.MPA.183 was restructured and rearranged (as the new CAT.OP.MPA.182), based on a more logical approach, and moving the conditions to the last two points of that IR ((l) and (f)). Consequently, the related AMC and GM were also renumbered and redrafted accordingly.</p>

Point (b)(2) of AMC1 CAT.OP.MPA.183(d)&(e) of the NPA was redrafted as the new AMC1 CAT.OP.MPA.182. It addresses the 'destination alternate aerodromes' cases (points (c), (d), and (e)), and contains the requirements for safety margins for meteorological conditions for the basic fuel scheme (see also points (g) and (h) of AMC1 CAT.OP.MPA.182), and the basic fuel scheme with variations (see also AMC2 CAT.OP.MPA.182).

comment

21

comment by: *KLM*

AMC2 CAT.OP.MPA.180: page 45

Bullet (b) is not relevant

A definition has to make clear what is meant but shall not say what it is not.

delete this (b)

response

Accepted.

comment

22

comment by: *KLM*

page 48

AMC1.CAT.OP.MPA.181 Unclearness as two different methods makes the regulation complex.

Basic fuel scheme has a basic fuel planning and in flight replanning policy

In addition to become the individual fuel scheme criteria AMC3.CAT.OP.MPA.180 should be fulfilled.

AMC2.CAT.OP.MPA.181

Fuel scheme with variation has specific variation fuel planning and in flight replanning policy.

Make this item non dependant of the AMC1.CAT.OP.MPA.180 and describe the requirement separately as done in AMC1-2-3 CAT.OP MPA.180. For example this makes clear that contingency fuel for variation starts with the standard 5 % of the trip fuel.

response

Partially accepted.

This approach is followed by ICAO and the Air OPS regulation (as inherited from the Joint Aviation Authorities (JAA)).

The structure of the entire point CAT.OP.MPA.181 and related AMC was rearranged in a more logical way, and following the same approach as for AMC1 CAT.OP.MPA.180, AMC2 CAT.OP.MPA.180, and AMC3 CAT.OP.MPA.180.



comment	<p data-bbox="288 237 331 271">25</p> <p data-bbox="1241 237 1487 271" style="text-align: right;">comment by: <i>KLM</i></p> <p data-bbox="288 338 1177 371">Pagina 54 (but also on page 20/21), Point Merge and Trombone patterns.</p> <p data-bbox="288 394 858 427">Sometimes to be included but other times not.</p> <p data-bbox="288 450 1262 483">incesequentially and should not be part of the trip fuel but in the contingency fuel.</p> <p data-bbox="288 506 1487 584">At present holding patterns are not included in the trip fuel and that has to be considered the same procedure as the point merge.</p>
response	<p data-bbox="288 629 464 663">Not accepted.</p> <p data-bbox="288 685 1487 763">This comment refers to the GM1 CAT.OP.MPA.181(c)(2) 'Point merge and trombone pattern' of the NPA, which is now included in points (e) and (f) of GM1 CAT.OP.MPA.181.</p> <p data-bbox="288 786 1054 819">EASA considers the text to be correct for the following reasons:</p> <p data-bbox="288 842 544 875">Point merge pattern</p> <ul data-bbox="288 898 1487 1211" style="list-style-type: none"> <li data-bbox="288 898 1487 976">(a) Fuel for the standard terminal arrival route (STAR), directly to the point merge, is accounted for in the 'trip fuel'. The fuel for the approach is also considered in the 'trip fuel'. <li data-bbox="288 999 1487 1111">(b) A point merge procedure is the equivalent of a normal holding pattern. Currently, no holding fuel is considered in the trip fuel, therefore, the fuel to fly the entire point merge should be accounted for in the 'contingency fuel'. <li data-bbox="288 1133 1487 1211">(c) If there is an 'anticipated delay', i.e. the likelihood of flying the entire point merge is high, fuel to fly the entire procedure is considered and accounted for in the 'extra fuel'. <p data-bbox="288 1234 520 1267">Trombone pattern</p> <ul data-bbox="288 1290 1487 1682" style="list-style-type: none"> <li data-bbox="288 1290 1487 1368">(a) Fuel for the STAR, including the trombone pattern that is likely to be flown, is accounted for in the 'trip fuel'. This may not necessarily be the longest route of the trombone procedure. <li data-bbox="288 1391 1487 1547">(b) ATC uses the longer part of the trombone procedure as a delay method and as such, this should not be considered in the 'trip fuel'. Currently, no holding fuel is considered in the 'trip fuel', therefore, the fuel to fly the extended trombone procedure should be accounted for in the 'contingency fuel'. <li data-bbox="288 1570 1487 1682">(c) If there is an 'anticipated delay', i.e. the likelihood of flying the extended trombone procedure is high, fuel to fly the entire procedure is considered and accounted for in the 'extra fuel'.

comment	<p>27</p> <p>page 45</p> <p>AMC1 CAT.OP.MPA.180 Fuel scheme</p> <p>This AMC1 (basic fuel scheme) says in (b) that if an operator does not want the Basic Fuel scheme (When the operator wishes to use alternative means to the basic fuel scheme), he has to comply with AMC3 (Individual Fuel Scheme).</p> <p>How to get from the Basic to AMC2 (Individual Fuel Scheme with Variations)?</p>	comment by: <i>KLM</i>
response	<p>Accepted.</p> <p>The AMC and GM were redrafted to clarify which AMC apply to which fuel scheme.</p>	
comment	<p>28</p> <p>page 48</p> <p>AMC1 CAT.OP.MPA.181 Fuel scheme fuel planning and in-flight replanning policy (why is the word 'policy' added) and this AMC</p> <p>AMC2 CAT.OP.MPA.181 Fuel scheme fuel planning and in-flight replanning policy</p> <p>Have the same title but are at different level: AMC1 describes the total fuel planning from taxi fuel to discretionary fuel while AMC2 only deals with taxi fuel and contingency fuel.</p> <p>Either rename AMC 2 or better would be to describe in AMC1 the two alternative ways for taxi fuel and with contingency fuel the two contingency fuel alternatives.</p> <p>Makes the story simple and consistent.</p>	comment by: <i>KLM</i>
response	<p>Accepted.</p> <p>All draft rules were revised for consistency. The title of AMC2 CAT.OP.MPA.181 was changed to show that it refers to the requirements for the basic fuel scheme with variations, whereas AMC1 CAT.OP.MPA.181, which covers only the basic fuel scheme, remained unchanged.</p>	
comment	<p>29</p> <p>page 50</p> <p>AMC2 CAT.OP.MPA.181 Fuel scheme fuel planning and in-flight replanning policy</p> <p>Why is not included at (c) (1) (i) the 5% trip fuel when no Fuel ERA is available?</p>	comment by: <i>KLM</i>

	that makes it clear that this is an adjustment to the BASIC fuel scheme.
response	<p>Not accepted.</p> <p>AMC1 CAT.OP.MPA.181 refers to the requirements that are applicable to the basic fuel scheme and AMC2 CAT.OP.MPA.181 refers to the requirements that are the variations to the basic fuel scheme. Additionally, AMC2 CAT.OP.MPA.180 clarifies the interconnection between the basic fuel scheme and the basic fuel scheme with variations.</p> <p>When there is no fuel ERA aerodrome available, the operator cannot use the 3 % contingency fuel out of the trip fuel that is specified in AMC2 CAT.OP.MPA.181. When none of the conditions described in that AMC can be achieved, the operator has to comply with the IR requirements for the basic fuel scheme, which are referred to in AMC1 CAT.OP.MPA.181.</p>
comment	<p>36 comment by: <i>Gabriel Arroyo</i></p> <p>In AMC1 CAT.OP.MPA.181, item (6), when defining additional fuel, reference is made to the most critical point along the route. However, unlike the present rule, it is not mentioned the scenario for this critical point. Today, AMC1 CAT.OP.MPA.150 for additional fuel states "...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". These words are missing in the new AMC proposal.</p> <p>Another point regarding this item. In the present AMC1 CAT.OP.MPA.150, the additional fuel is required to land at an "adequate aerodrome". However AMC1 CAT.OP.MPA.181 refers to a "fuel ERA aerodrome". This is a significant change that perhaps should be highlighted.</p>
response	<p>Not accepted.</p> <p>The wording 'engine failure or loss of pressurisation' is now in point CAT.OP.MPA.181 (c)(6) of the IR.</p> <p>'Fuel ERA aerodrome' replaced 'adequate aerodrome' to increase the safety of a flight that may have an engine failure or loss of pressurisation. More explanations are provided in Section 2.3.2. 'Overview of the proposals' of Opinion No 02-2020.</p>
comment	<p>37 comment by: <i>Gabriel Arroyo</i></p> <p>AMC1 CAT.OP.MPA.181 (4) (i) (A) talk about "... fuel for a missed approach from the applicable DA/H or MDA/H at the destination aerodrome to missed approach altitude, taking into account the complete missed approach procedure". This item has not changed from present rule.</p> <p>Experience shows that the fuel for "complete missed approach procedure" is not easy to compute. In many airports does not exist a path to follow after the missed approach and the procedure only</p>

response	<p>states to follow a course and expect ATC instructions. Anyway most of the flight planning systems are unable to compute this fuel, and is a nightmare for operators to find a workaround to include it. An alternate solution should be found to avoid this issue.</p> <p>Not accepted.</p> <p>Missed approaches that do not have a path to follow (e.g. LHR 09L/R) should be calculated following the procedure for lost communications, which should be published in the aeronautical information publication (AIP) for that approach.</p> <p>In addition, AMC3 CAT.OP.MPA.180 describes the statistical calculation of the fuel that is required for a go-around, if approved by the competent authority.</p>
comment	<p>45 comment by: <i>British Airways Flight Operations</i></p> <p>Apologies for being picky, but 175 (a)(18) is missing an 'as': as well as destination 2 and ...</p> <p>Moreover, (19) should, I believe, read 'where applicable, take-off alternate and fuel ERA aerodrome(s)'.</p>
response	<p>Accepted.</p>
comment	<p>46 comment by: <i>British Airways Flight Operations</i></p> <p>AMC1 CAT.OP.MPA.180, paragraph (b): should this really refer to AMC3? Should it not refer to AMC2?</p> <p>AMC3: as I read it, ANY variation from a Basic Fuel Scheme becomes an Individual Fuel Scheme, because it won't comply with AMC1. The relevant wording is '... which deviates, fully <u>or in part</u> ...'. Need to clarify when AMC3 would be triggered and when it would not!</p>
response	<p>Partially accepted.</p> <p>For clarity, point (b) of AMC1 CAT.OP.MPA.180 was deleted, and AMC3 CAT.OP.MPA.180 was expanded accordingly.</p>
comment	<p>47 comment by: <i>British Airways Flight Operations</i></p> <p>AMC3 CAT.OP.MPA.180, paragraph (e)(5): why does an operator need RNP APCH capability? If it only flies to airports equipped with, for example, ILS, why should it be prohibited from taking advantage of the provisions of this AMC? Suggest removing (5).</p>

	<p>(e)(6)(ii): suggest collecting and <i>continually</i> monitoring ... rather than continuously. Likewise <i>continually</i> in (f)(1).</p>
response	<p>General response: partially accepted.</p> <p>Comment 1: not accepted.</p> <p>The PBN rules were recently amended, and RNP APCHs are no longer a pre-approved item (except for an RNP AR APPCH). In the coming years, RNP APCHs are expected to be extensively used. Therefore, it is important to increase the operators' capabilities if operators decide to use individual fuel schemes. Also in case of abnormal procedures, the pilot may proceed to aerodromes that are not previously planned; therefore, the rule was drafted in a way to provide as many landing options as possible.</p> <p>Comment 2: accepted.</p>
comment	<p>49 comment by: <i>British Airways Flight Operations</i></p> <p>AMC1 CAT.OP.MPA.181 para (3): should this not be 'contingency fuel, which should <i>not be less than</i>'?</p> <p>(6) it is not clear when additional fuel is required. Presumably this means fuel to comply with EDTO requirements or failure of pressurisation; however, as written, the AMC requires it on all flights.</p> <p>(7) Likewise, the way in which this para is written requires extra fuel on all flights.</p>
response	<p>Partially accepted.</p> <p>Point (c)(3) of AMC1 CAT.OP.MPA.181 (now new point (a)(3)) was changed for accuracy.</p> <p>On additional fuel in point (c)(6) (now in new point (a)(6)):</p> <p>Point (c)(6) (now new point (a)(6)) of AMC1 CAT.OP.MPA.181 must be read in conjunction with the related CAT.OP.MPA.181 point, which clearly states:</p> <p><i>(c)(6) additional fuel/energy, if required by the type of operation; (...) this additional fuel/energy is required only if the minimum amount of fuel/energy that is calculated according to points (c)(2) to (c)(5) above is not sufficient for such an event.</i></p> <p>The definition of 'additional fuel' has not been changed since the time of the JAA ,and applies to all flights even if only long-haul flights over remote areas can be affected; on all other flights, the sum of trip fuel, contingency, fuel to fly to an alternate aerodrome, and fRF is more than the sum of trip fuel to the critical point, fuel for a diversion to the fuel ERA aerodrome, and fuel to fly for 15 minutes.</p> <p>The text of the new point (a)(7) of AMC1 CAT.OP.MPA.181 on extra fuel was slightly changed to clarify that this type of fuel is needed only when there are anticipated delays or specific operational constraints.</p>

comment	50	comment by: <i>British Airways Flight Operations</i>
	AMC2 (b) last word should be 'below'	
response	Accepted.	

comment	51	comment by: <i>British Airways Flight Operations</i>
	GM1 CAT.OP.MPA.181(b)(2)(iii). It is not clear what this paragraph actually means. Moreover, it should use the word 'extent' instead of 'extend'. In any case, what is 'the extent of the deviation'?	
response	Accepted. The text of the GM is now included in GM3 CAT.OP.MPA.181 'Fuel/energy scheme — fuel/energy planning and in-flight replanning policy — aeroplanes INDIVIDUAL FUEL SCHEME — ANTICIPATED METEOROLOGICAL CONDITIONS' and amended for clarity. This GM, particularly the phrasing 'extent of the deviation', should be read together with AMC3 CAT.OP.MPA.180. 'Extent of the deviation' always refers to the fuel scheme that is currently implemented by the operator. The typographical error was also corrected. Similar comment: 113.	

comment	52	comment by: <i>British Airways Flight Operations</i>
	GM1 CAT.OP.MPA.181(c)(2) and (c)(3) - both highly welcome, thank you.	
response	Noted.	

comment	53	comment by: <i>British Airways Flight Operations</i>
	AMC1 CAT.OP.MPA.183(d)&(e) (a) There should be no requirement to take cloud ceiling into account, except, possibly, in the case of Circling Approaches. Approach success rate is in no way predicated on cloud ceiling, and flight crew are not required to consider ceiling under the terms of CAT.OP.MPA.305. It is an old legend that cloud ceiling affects approaches, but it is not true - please remove this requirement.	

(b) The wording here needs adjustment; transposing the text from CAT.OP.MPA.185, you have retained 'shall', but it ought to be 'should' here - an AMC. Please see previous comment re cloud ceiling

Table 1: Please remove cloud ceiling from all requirements except circling. I agree with the inclusion of the requirement to consider crosswind.

response

Noted.

This proposal should be addressed through RMT.0379 'All-weather operations'. This text was taken over unchanged from the current Air OPS rules.

The entire point CAT.OP.MPA.183 (the new point CAT.OP.MPA.182) and related AMC and GM were redrafted and rearranged. The meteorological conditions are now in point CAT.OP.MPA.182 (e) and in AMC1 CAT.OP.MPA.182(e) and AMC2 CAT.OP.MPA.182(e).

comment

55

comment by: *British Airways Flight Operations*

AMC1 CAT.OP.MPA.196

The first sentence makes no sense! Moreover, from where does the Agency derive the information to make such a statement? If such an operation is 'extremely hazardous', surely an operator's SMS will prohibit its use. Either it is permissible or it is not; EASA should not be making such pejorative value judgements in the Ops Rules. Please remove.

response

Accepted.

The content of point CAT.OP.MPA.196 and related AMC was renumbered under the new point CAT.OP.MPA.187 and AMC1 CAT.OP.MPA.187.

comment

59

comment by: *CAA-NL*

We are puzzled by table 1, page 59

SA-CAT I is not defined unless the intention is to refer to a Stabilized Approach under CAT I, then it should be SAp-CAT I as SAp is included in Annex I definitions as the abbreviation for 'stabilised approach (SAp)' Then we would understand this as that the weather planning minima should be better as needed for the Stabilized Approach under CAT I to schedule a CAT III or CAT II approach. Is this correct?

Further we are missing a definition or description for an 'type A instrument approach'.



response Partially accepted.

The comment is related to Table 1 that contained the planning minima in AMC1 CAT.OP.MPA.183(d)&(e), which is now the redrafted AMC1 CAT.OP.MPA.182(e).

Table 1 was changed. More explanations are provided in Section 2.3.2. 'Overview of the proposals' of [Opinion No 02-2020](#).

comment 60 comment by: KLM

Item 28 page 59-60 isolated airport.

When an operator chooses to select a destination alternate further than 2 hours away from the destination for whatever reason, that does not make the destination an isolated airport.

It has to be stated clearly that a destination becomes an isolated aerodrome when it is not possible to select an alternate aerodrome within 2 hours, because there is no aerodrome available or not adequate for the type of operation.

the text has to be clarified to make this clear.

response Accepted.

See the redrafted point CAT.OP.MPA.182 and related AMC and GM. The isolated aerodrome is now dealt with in point CAT.OP.MPA.182 (d)(2) and related AMC2 CAT.OP.MPA.182.

comment 64 comment by: Gabriel Arroyo

Basic fuel planning AMC1 CAT.OP.MPA.181 does not take into account reduced contingency fuel nor PDP procedures. However, Basic inflight fuel management AMC1 CAT.OP.MPA.185 mentions them. Is that correct?

response Partially accepted.

Reduced contingency fuel is moved to point (e) of AMC2 CAT.OP.MPA.181.

PDP is moved to isolated aerodromes in the new AMC2 CAT.OP.MPA.182.

comment 69 comment by: Gabriel Arroyo

In explanatory notes, page 24, it is stated that for isolated aerodrome new CAT.OP.MPA.183(c) allows operator to choose "either to carry the fuel to comply with CAT.OP.MPA.106 or to carry sufficient fuel to fly to the destination aerodrome plus the fuel to proceed to the alternate

	<p>aerodrome plus the FRF, as normally required by the current CAT.OP.MPA.150 or the proposed new CAT.OP.MPA.181”.</p> <p>However that do not seem to match what it is really stated in AMC2 CAT.OP.MPA.183. This AMC2 requests to plan the fuel of CAT.OP.MPA.106 or the fuel to proceed from the departure aerodrome to an alternate ERA aerodrome (FFR included) via the point of no return, whichever is higher.</p> <p>We think additional explanation should be needed.</p>
response	<p>Accepted.</p> <p>Point CAT.OP.MPA.183 was renumbered and redrafted as new point CAT.OP.MPA.182. Consequently, the related AMC and GM were also renumbered and redrafted. Former AMC2 CAT.OP.MPA.183 was extensively amended for clarification, and it is now included in the new AMC2 CAT.OP.MPA.182.</p>
comment	<p>79 comment by: <i>Swedish Transport Agency, Civil Aviation Department (Transportstyrelsen, Luftfartsavdelningen)</i></p> <ol style="list-style-type: none"> 1. AMC3 CAT.OP.MPA.180 (e)(5) “VNAV” minima. It is assumed that LPV minima (based on SBAS) is comprised by the term VNAV minima. 2. AMC2 CAT.OP.MPA.181 (d)(2)(vii),(viii) the terms “extra fuel” and “discretionary fuel” seems not to be consistent with CAT.OP.MPA.181 (c)(7),(8) 3. On page 52 the NPA refers to a new GM3 to CAT.OP.MPA.181 but the new GM is presented as GM1 CAT.OP.MPA.181 (b). EASA might also consider other language than “unacceptable” and “acceptable” in proposed GM. 4. GM2 CAT.OP.MPA.181 (c)(3) – Consider using the acronym on statistical contingency fuel (SCF) as is done in AMC2 CAT.OP.MPA.181 5. Table 1 to AMC1 CAT.OP.MPA.183 (d)&(e) on crosswind planning minima – Clarification is needed as the text for crosswind planning might introduce operational restrictions c.f. current <i>GM2 CAT.OP.MPA.185 Planning minima for IFR flight – Aeroplanes</i>. 6. AMC1 CAT.OP.MPA.185 (a) – In-flight fuel checks at “regular intervals”. As the wording “regular intervals” might be perceived differently an exemplification in a GM could be beneficial.
response	<p>Partially accepted:</p> <p>Comment 1: the text was revised to read: ‘(...) APCHs that require an LVO approval and RNP APCHs down to VNAV minima (...)’.</p> <p>Comment 2: accepted (see also comment 111).</p> <p>Comment 3: accepted.</p>

The typographical error was corrected. The words 'acceptable' and 'unacceptable' were deleted and the text adjusted.

Comment 4: accepted.

Comment 5: partially accepted.

Table 1 on planning minima was completely changed, and Table 1 'Aerodrome forecasts (TAFs) and landing forecasts (TRENDS) to be used for pre-flight planning' now includes references to wind limitations (see also the new tables for basic fuel schemes and basic fuel schemes with variations in the new AMC1 CAT.OP.MPA.182 and AMC2 CAT.OP.MPA.182 respectively).

Comment 6: partially accepted.

Operators should establish regular intervals that are adapted to the type of operation. However, a new point (a) of GM1 CAT.OP.MPA.185 was created to provide an example of regular intervals for recording fuel checks both in short-haul and longer flights.

comment

97

comment by: *Virgin Atlantic*

Page 49 - AMC1 CAT.OP.MPA181 (c)(3) Should read: "contingency fuel, which should be the higher of:"

response

Accepted.

comment

98

comment by: *Virgin Atlantic*

Page 53: GM1 CAT.OP.MPA.181(b)(2)(iii) - Use of the word "extend" appears wrong? Suggest amend to read as follows;

When the operator develops an extension of the individual fuel scheme for the area of operation, the reliability of the meteorological forecast reports should be considered: therefore, the extent of a deviation..."

response

Partially accepted.

'Extend' was corrected to read 'extent'.

comment

99

comment by: *Virgin Atlantic*

Page 55: Item 20 - GM2 CAT.OP.MPA.181(c)(3) - Reference is made to "CAT.OP.MPA.180(b)(2)", is this now the correct reference?



response Accepted.

The correct new reference is the new point CAT.OP.MPA.182 (e) and related AMC1 CAT.OP.MPA.182(e) and AMC2 CAT.OP.MPA.182(e).

See also comment 208.

comment **101** comment by: *Virgin Atlantic*

Page 56 Item 25: GM1 CAT.OP.MPA.181(d) - Third line, should read; "...the flight could **not** be completed as originally planned."??

Page 57 Item 25: GM1 CAT.OP.MPA.181(d) - Fourth line, should read; "In-flight replanning does not apply when the aircraft no longer continues to the intended destination...".

response General response: partially accepted.

First comment: not accepted.

In the context of the fuel policy, in-flight replanning is a change of the actual filed flight plan when the actual flight plan could have been flown as filed, but, for some non-safety-related reason, the pilot or the operator changes the intended course of the aircraft.

The GM was revised for clarity.

See also comment 115.

Second comment: accepted.

comment **102** comment by: *Virgin Atlantic*

Page 58 Item 27: AMC1 CAT.OP.MPA.183(d)&(e) - Item (b) should read; "the operator shall only select the destination **alternate** aerodrome when:" ??

response Partially accepted.

Point CAT.OP.MPA.183 (the new point CAT.OP.MPA.182) was completely redrafted and its parts rearranged in a more logical sequence: the conditions related to weather and navigation were moved to the last two points ((e) and (f)).

Consequently, the related AMC and GM were also redrafted.

This text can be found now in a different version in the new AMC1 CAT.OP.MPA.182, paragraphs (g) and (h).

comment	110	comment by: UK CAA
	<p>Page No: 50</p> <p>Paragraph No: 3.7 / 8, New AMC2 CAT.OP.MPA.181 (b)</p> <p>Comment: Last line of the paragraph, amend “bellow” to ‘below’.</p> <p>Justification: Editorial error</p>	
response	Accepted and corrected.	

comment	111	comment by: UK CAA
	<p>Page No: 51</p> <p>Paragraph No: 3.7 / 8, New AMC2 CAT.OP.MPA181 (d) ,(1),(vii) & (2) (viii)</p> <p>Comment: It is recommended that the text regarding ‘extra’ and ‘discretionary’ fuel is amended as shown to remain consistent with other sections.</p> <p>Justification: Consistency and alignment</p> <p>Proposed Text:</p> <p>(vii) extra fuel if required by the commander to take into account anticipated delays or specific operational constraints; and</p> <p>(viii) discretionary fuel, if required by the commander; or</p>	
response	Accepted.	

comment	112	comment by: UK CAA
	<p>Page No: 52</p> <p>Paragraph No: 3.7 / 10,.New GM3 CAT.OP.MPA.181</p> <p>Comment: Section header not consistent with proposed GM1</p> <p>Justification: Suspected editorial error</p> <p>Proposed Text: GM1 CAT.OP.MPA.181</p>	
response	Accepted.	



comment	<p>113</p> <p style="text-align: right;">comment by: UK CAA</p> <p>Page No: 53</p> <p>Paragraph No: 3.7 / 13, GM1 CAT.OP.MPA.181 (b)(2)(iii)</p> <p>Comment: The meaning of the text as presented in the first sentence is not clear and should be reviewed to ensure the intent is fully met.</p> <p>Justification: Clarity of wording</p>
response	<p>Accepted.</p> <p>The text of the GM is now included in GM3 CAT.OP.MPA.181 ‘Fuel/energy scheme — fuel/energy planning and in-flight replanning policy — aeroplanes INDIVIDUAL FUEL SCHEME — ANTICIPATED METEOROLOGICAL CONDITIONS’ and amended for clarity. This GM, particularly the phrasing ‘extent of the deviation’, should be read together with AMC3 CAT.OP.MPA.180. ‘Extent of the deviation’ always refers to the fuel scheme that is currently implemented by the operator.</p> <p>The text of the GM has been slightly amended for clarity.</p> <p>The typographical error was also corrected.</p> <p>Similar comment: 51.</p>

comment	<p>114</p> <p style="text-align: right;">comment by: UK CAA</p> <p>Page No: 55</p> <p>Paragraph No: 3.7 / 20, GM1 CAT.OP.181 (c)(3)</p> <p>Comment: Section header not consistent with proposed GM2</p> <p>Justification: Suspected editorial error</p> <p>Proposed Text: GM2 CAT.OP.MPA.181 (c) (3)</p>
response	<p>Accepted.</p>

comment	<p>115</p> <p style="text-align: right;">comment by: UK CAA</p> <p>Page No: 56</p> <p>Paragraph No: 3.7 / 25, GM1 CAT.OP.MPA.181(d)</p> <p>Comment: In the 3rd line of the paragraph the word ‘not’ appears to be missing between ‘could’ and ‘be completed’ which changes the intent of the sentence.</p>
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	<p>Justification: Suspected editorial error</p> <p>Proposed Text: In flight re-planning.....when the flight <i>could not</i> be completed ...</p>
response	<p>Not accepted.</p> <p>In the context of the fuel policy, in-flight replanning is a change of the actual filed flight plan when the actual flight plan could have been flown as filed, but, for some non-safety-related reason, the pilot or the operator changes the intended course of the aircraft.</p> <p>The GM was revised for clarity.</p> <p>See also comment 101.</p>
comment	<p>127 comment by: AIR FRANCE</p> <p>AMC2 CAT.OP.MPA.183 Fuel scheme — selection of aerodromes policy — aeroplanes</p> <p>FUEL SCHEME WITH VARIATIONS — ISOLATED AERODROME — POINT OF NO RETURN</p> <p>(a) An operator should can [GC(DC-A1)] consider a destination aerodrome as an isolated aerodrome if the alternate and final reserve fuel required to the nearest adequate destination alternate aerodrome is more than:</p> <p>(1) for aeroplanes with reciprocating engines, the fuel to fly for 45 min plus 15 % of the flying time planned to be spent at cruising level or for 2 hours, whichever is less; or</p> <p>(2) for turbine-engined aeroplanes, the fuel to fly for 2 hours at normal cruising consumption <u>above the destination aerodrome, including the final reserve fuel.</u></p> <p>(b) If the operator's fuel policy includes planning to an isolated aerodrome, the point of no return to any available en-route alternate (ERA) aerodrome should be used as the predetermined point (as per PDP procedure).[GC(DC-A2)]</p> <p>(c) The amount of usable fuel on board for departure should be as indicated in (1) or (2) below, whichever is greater. (1) It should be the sum of:[GC(DC-A3)]</p> <p>(iii) taxi fuel;</p> <p>(iv) trip fuel from the departure aerodrome to the isolated aerodrome, via the point of no return;</p> <p>(v) contingency fuel calculated in accordance with the operator's current fuel scheme;</p> <p>(vi) additional fuel, if required, but not less than:</p> <p>(A) for aeroplanes with reciprocating engines, the fuel to fly for 45 min plus 15 % of the flight time planned to be spent at cruising level or for 2 hours, whichever is less; or</p> <p>(B) for turbine-engined aeroplanes, the fuel to fly for 2 hours at normal cruising</p>

consumption above the destination aerodrome, which should not be less than the final reserve fuel;

(vii) extra fuel; and

(viii) discretionary fuel if required by the commander.

~~(2) It should be the sum of:~~

~~(i) taxi fuel;~~

~~(ii) trip fuel from the departure aerodrome to the en-route alternate (Fuel ERA) aerodrome, via the point of no return;~~

~~(iii) contingency fuel calculated in accordance with the operator's current fuel scheme~~

~~(iv) additional fuel, if required, but not less than:~~

~~(A) for aeroplanes with reciprocating engines, fuel to fly for 45 min; or~~

~~(B) for turbine-engined aeroplanes, fuel to fly for 30 min at holding speed at~~

~~1 500 ft (450 m) above the fuel ERA aerodrome elevation in standard conditions, which should not be less than the final reserve fuel;~~

~~(v) extra fuel; and~~

~~(vi) discretionary fuel if required by the commander.~~

[GC(DC-A1)]The operator « can » consider a DEST as isolated if ...

The operator is not obliged, he could decide to take the fuel for an DEST ALT which would end with ALT + FINAL > 2Hours. It is his choice.

[GC(DC-A2)]As we keep the PDP procedure as an accepted variation this is the simplest way to manage the isolated aerodrome.

[GC(DC-A3)]When using a point of no return procedure it makes no sense to say “the greater of 2 quantities of fuel”. The Point of no return is the point when the remaining fuel quantity permits exactly the two options: continue to DEST or divert to an ERA.

response

Partially accepted.

The text was amended and PDP was removed.

Identical comment: 162 (see also comment 202).

comment	<p data-bbox="300 232 347 271">128</p> <p data-bbox="1155 232 1477 271" style="text-align: right;">comment by: AIR FRANCE</p> <p data-bbox="300 331 1433 369">AMC1 CAT.OP.MPA.183(d)&(e) Fuel scheme — selection of aerodromes policy — aeroplanes</p> <p data-bbox="300 389 1289 427">BASIC FUEL SCHEMES — BASIC ALTERNATE AERODROME POLICY — AEROPLANES</p> <p data-bbox="300 448 635 486">Table 1 — Planning minima</p> <p data-bbox="300 506 1369 544">Destination alternate aerodrome, isolated destination aerodrome, fuel ERA aerodrome</p> <p data-bbox="300 564 1477 640"><i>The table proposed in the NPA is only an example based on the fact that the table should normally, at the same time, fulfil the two requirements of:</i></p> <p data-bbox="300 660 1265 698">CAT.OP.MPA.183 Fuel scheme — selection of aerodromes policy — aeroplanes</p> <p data-bbox="300 719 1477 835">(d) The operator shall apply appropriate safety margins to flight planning in order to take into account possible deterioration of the meteorological conditions at the estimate time of landing compared to the available forecast.</p> <p data-bbox="300 855 357 893">AND</p> <p data-bbox="300 913 1477 1030">(e) The operator shall ensure, for each instrument flight rules (IFR) flight, that sufficient means are available to navigate and land at the destination aerodrome or at any destination alternate aerodrome in the case of loss of capability for the intended approach and landing operation.</p> <p data-bbox="300 1050 1477 1126"><i>This means the highest of an add-on to the operating minima and the minima of the next type of approach.</i></p> <p data-bbox="300 1146 1477 1223"><i>The AWO RMT should confirm this point or decide that an add-on is enough. But in that later case (e) above should be adapted.</i></p>
response	<p data-bbox="300 1261 421 1299">Accepted.</p> <p data-bbox="300 1328 1477 1570">The planning minima tables, as well as the entire structure of point CAT.OP.MPA.183 (now new point CAT.OP.MPA.182) and related AMC and GM, were changed, compared to the NPA 2016-06 (A) versions. The new planning minima tables (for basic fuel schemes and basic fuel schemes with variations) were redrafted and coordinated with RMT.0379 ‘All-weather operations’. More explanations are provided in Section 2.3.2. ‘Overview of the proposals’ of Opinion No 02-2020.</p> <p data-bbox="300 1590 592 1628">Identical comment: 163.</p>
comment	<p data-bbox="300 1727 347 1765">132</p> <p data-bbox="1187 1727 1477 1765" style="text-align: right;">comment by: ESSP-SAS</p> <p data-bbox="300 1832 743 1870">AMC3 CAT.OP.MPA.180 Fuel scheme</p> <p data-bbox="300 1890 1477 1966">Item (e) lists the minimum operational capabilities required to implement an individual fuel scheme.</p>

Item (4) and (5) contain the minimum PBN requirements for the operator (RNP 4 for oceanic and remote airspace, RNAV1 for continental en-route airspace and RNP ACPH down to VNAV minima). This provision is not aligned with EASA RMT.639 NPA 2015-01, that encourages the implementation in Europe of RNAV1 and RNP APCH with vertical guidance (APV).

RNP APCH with APV includes approaches based on Baro-VNAV and/or SBAS supporting not only RNP APCH down to LNAV/VNAV minima, but also LPV minima.

Text proposal:

"(5) be able to perform PBN approach procedures (RNP APCH) with vertical guidance (APV)"

response

Partially accepted.

The text was rephrased according to the latest version of the Air OPS rules. The correct term 'RNP APCH' was inserted in the respective point.

comment

133

comment by: *DGAC France*

AMC2 CAT.OP.MPA.182: Please note that DGAC France has nothing against the removal of the "CAT.OP.MPA.151 Fuel policy --Alleviations --" requirement in the AMC2 of CAT.OP.MPA.182

response

Partially accepted.

In [NPA 2016-06 \(A\)](#), the performance class B requirements were moved from the deleted point CAT.OP.MPA.151 'Fuel policy — alleviations' to the new point CAT.OP.MPA.182, and the related new AMC1 CAT.OP.MPA.181 on basic fuel schemes with variations.

comment

135

comment by: *DGAC France*

AMC2 CAT.OP.MPA.181 (b), Fuel ERA is now applicable to CAT operator provided that the operator has established and maintained a fuel consumption monitoring programme. This is also applicable to aircraft less than 5700kg or even with non-complex aircraft and to business jet operators whose range is a concern. The 3% ERA contingency fuel is already covered by the selection of an en-route alternate before reaching the destination aerodrome. However this important change is not mentioned in the RIA of the NPA and it could be seen as a burden by such operators.

Proposed text:

FUEL SCHEME WITH VARIATIONS — CONTINGENCY FUEL— AEROPLANES

(a) Contingency fuel variations are methods of reducing the basic amount of contingency fuel based on established mitigating measures.



(b) Provided that the operator has established and maintained a fuel consumption monitoring programme for individual aeroplanes, and uses valid data for fuel calculation determined by means of such a programme, the operator may use for the calculation of contingency fuel any of the following requirements contained in (c) (1) (ii) or (c) (1) (iii) or (d) below.

response

Not accepted.

RG RMT.0573 evaluated the burden of implementing and maintaining a fuel consumption monitoring system for small operators. Considering today's information technologies, as well as the present and future number of old aircraft, RG RMT.0573 assessed the burden for small operators to be small. Furthermore, a new GM was created, which simplifies the concept of a fuel consumption monitoring system under a basic fuel scheme. Another new GM provides further guidance for fuel consumption monitoring systems under an individual fuel scheme.

comment

136

comment by: DGAC France

GM1 CAT.OP.MPA.185, this GM could be merged with the definition of a 'safe landing'

response

Not accepted.

This GM is applicable to all requirements of point CAT.OP.MPA.185 as well as to in-flight fuel management. However, the definition of 'safe landing' should preserve the general format of all the other definitions included in the Air OPS regulation.

comment

139

comment by: DGAC France

CAT.OP.MPA 183(b) introduces two landing options for IFR flights, at the planning stage of the flight. However, it does not address the case of an alternate becoming non-available during the flight and the NPA is not providing mitigating measures in this regard." GM1 CAT.OP.MPA.183(b) should then only address individual fuel schemes where mitigating measures could be proposed by the operator.

proposed text: GM1 CAT.OP.MPA.183(b) Fuel scheme — Selection of aerodromes policy — aeroplanes

REACHING THE DESTINATION

In the context of fuel schemes and individual fuel schemes, reaching the destination means being as close as possible to the destination, but not necessarily overhead the destination, and no more than 1 hour away from the destination.

For isolated aerodromes, reaching the destination means being as close as possible to the destination but not at or farther away from the point of no return



response	<p>Partially accepted.</p> <p>The text of GM1 CAT.OP.MPA.183(b) 'Reaching the destination', proposed in the NPA, was moved to the new point (f) of AMC1 CAT.OP.MPA.182 on basic fuel schemes and basic fuel schemes with variations, as well as to new GM3 CAT.OP.MPA.182 on reaching the destination, applicable to individual fuel schemes, to adjust to the complete change of point CAT.OP.MPA.182 on aerodrome selection policy. Additional conditions were included. Point CAT.OP.MPA.183 and related AMC and GM were redrafted and moved to point CAT.OP.MPA.182 and related AMC and GM.</p> <p>Point CAT.OP.MPA 183 (b) was further amended and moved to point CAT.OP.MPA.182 (d).</p> <p>Relevant safety information that needs to be communicated (including on the dynamic situation of an aerodrome) was developed and added to the new rules. As a mitigating measure, a flight monitoring/flight watch system is also required in such cases.</p> <p>More explanations related to reaching the destination are provided in Section 2.3.2. 'Overview of the proposals' of Opinion No 02-2020.</p>
comment	<p>144 comment by: Carl Norgren, Swiss Int Air Lines</p> <p>AMC1 CAT.OP.MPA.181(c)</p> <p>Handling of APU fuel prior to flight</p> <p>Problem: how to deal with usage of APU fuel while on stand. This fuel is consumed 'before flight begins'. APU fuel is included in taxi fuel and has to be on board 'before flight' (iaw. AMC1 CAT.OP.MPA.181(c)ff.). But APU fuel burned on stand is no longer on board when flight begins.</p> <p>Suggestion:</p> <p>For the basic fuel planning policy, the amount of usable fuel required for a flight should be not less than the sum of the following:</p> <p>taxi fuel which should not be less than the amount expected to be used prior to take-off; the local conditions at the departure aerodrome and auxiliary power unit (APU) consumption <u>during flight</u> should be taken into account</p>
response	<p>Not accepted.</p> <p>Adding 'during flight' in point (a)(1) of AMC1 CAT.OP.MPA.181 would make the AMC too prescriptive, and the operator would be restricted to consider only the auxiliary power unit (APU) fuel consumption during the flight. However, the intent of the AMC is to be more performance-based, to allow the operator to consider more fuel for the APU consumption before the actual flight takes place.</p>

comment	<p>145 comment by: <i>Carl Norgren, Swiss Int Air Lines</i></p> <p>CAT.OP.MPA.181(b)(2)(iv)</p> <p>Fuel calculation for anticipated delays</p> <p>CAT.OP.MPA.181(c)(7) specifically takes into account anticipated delays in the calculation of 'extra fuel.'</p> <p>Suggestion: Delete CAT.OP.MPA.181(b)(2)(iv) to avoid duplication</p>
response	<p>Partially accepted.</p> <p>'Anticipated delays' was moved to new point (b)(6), as they are included in the calculation of extra fuel. However, it is kept under point (b), which includes more general requirements.</p>
comment	<p>147 comment by: <i>Carl Norgren, Swiss Int Air Lines</i></p> <p>AMC1 CAT.OP.MPA.185(a)(b)(3)(ii)</p> <p>Definition of PDP procedure deleted from new NPA.</p> <p>Suggestion:</p> <p>Add the PDP procedure again.</p>
response	<p>Not accepted.</p> <p>PDP is only allowed for isolated aerodromes. The rules provide for other variations, to save fuel.</p> <p>See also the response to comment 197.</p>
comment	<p>148 comment by: <i>Carl Norgren, Swiss Int Air Lines</i></p> <p>AMC2 CAT.OP.MPA.183</p> <p>Fuel Scheme with Variations - Isolated Aerodrome - Point of No Return</p> <p>AMC1 CAT.OP.MPA.185(a)(b)(3)(ii)</p> <p>On a flight using the <u>predetermined point (PDP) procedure</u> to proceed to the destination aerodrome, the commander should ensure that the usable fuel remaining at the PDP is at least the total of: ...</p> <p>AMC1 CAT.OP.MPA.185(a)(b)(3)(ii) mentions the PDP procedure. This contradicts with the entry in AMC2 CAT.OP.MPA.183.</p> <p>Suggestion:</p>

response	<p>Define PNR as sub-category of PDP and add the PDP procedure again.</p> <p>Not accepted.</p> <p>PDP was not accepted as a variation.</p>
comment	<p>149 comment by: <i>Carl Norgren, Swiss Int Air Lines</i></p> <p>AMC1 CAT.OP.MPA.183(d)&(e)</p> <p>Table 1 - Planning Minima</p> <p>Table 1 includes RVR as a planning minimum. RVR is not available at the planning stage for the time of intended use! Only meteorological visibility is available at the planning stage.</p> <p>Suggestion:</p> <p>Exchange RVR with MET VIS or CMV.</p>
response	<p>Not accepted.</p> <p>In case of very short flights or in-flight replanning close to destination, the value of the runway visual range (RVR) could be applicable. Nevertheless, RVR is never the sole reference for planning minima.</p> <p>The planning minima for basic fuel schemes are in point (h) of AMC1 CAT.OP.MPA.182, and for basic fuel schemes with variations in AMC2 CAT.OP.MPA.182.</p>
comment	<p>152 comment by: <i>Carl Norgren, Swiss Int Air Lines</i></p> <p>AMC2 CAT.OP.MPA.183</p> <p>Fuel Scheme - selection of aerodromes policy - aeroplanes</p> <p>Wording inconsistent with definitions. Replace 'fuel ERA' with 'ERA' in AMC2 CAT.OP.MPA.183.</p>
response	<p>Not accepted.</p> <p>A consistency check was carried out and 'fuel ERA' was replaced with 'ERA', where appropriate, and in line with the definitions.</p>

comment	<p data-bbox="295 232 343 280">154</p> <p data-bbox="1125 232 1473 280" style="text-align: right;">comment by: <i>Virgin Atlantic</i></p> <p data-bbox="295 324 1473 504">Page 62 - AMC1 CAT.OP.MPA.185(a) Fuel Scheme - In-Flight Fuel Management Policy - Aeroplanes (b) (3) (i) (C) When in-flight and when utilising the RCF procedure it should be clear that when proceeding from the Decision Point only the requirements of CAT.OP.MPA.246 apply as the Meteorological requirements.</p> <p data-bbox="295 526 1473 638">Otherwise it could be concluded that even when a destination alternate is not required, the Meteorological conditions of AMC1 CAT.OP.MPA.183 (b) (2) may apply when in-flight, and not just at the planning stage.</p> <p data-bbox="295 660 1473 750">Alternatively, perhaps it could be clarified that the meteorological requirements of AMC1 CAT.OP.MPA.183 (b) (2) only ever apply at the planning stage and not when in-flight.</p>
response	<p data-bbox="295 772 383 817">Noted.</p> <p data-bbox="295 840 1473 974">Point (b)(2) of AMC1 CAT.OP.MPA.183, published in the NPA, is included in points (c), (d), and (e) of the new AMC2 CAT.OP.MPA.182 <i>'Fuel scheme — aerodrome selection policy — aeroplanes BASIC FUEL SCHEME — DESTINATION ALTERNATE AERODROME'</i>.</p> <p data-bbox="295 985 1473 1108">When approaching the decision point, the determination of the option is based on the applicable landing minima. Planning minima apply only in case of in-flight replanning, where a new operational flight plan is produced.</p> <p data-bbox="295 1120 941 1164">Re-clearance should not be confused with replanning.</p>

comment	<p data-bbox="295 1261 343 1310">162</p> <p data-bbox="1236 1261 1473 1310" style="text-align: right;">comment by: <i>IATA</i></p> <p data-bbox="295 1355 446 1400">Comment 7</p> <p data-bbox="295 1411 1348 1456">AMC2 CAT.OP.MPA.183 Fuel scheme — selection of aerodromes policy — aeroplanes</p> <p data-bbox="295 1467 1332 1512">FUEL SCHEME WITH VARIATIONS — ISOLATED AERODROME — POINT OF NO RETURN</p> <p data-bbox="295 1523 1473 1646">(a) An operator <u>should</u> can [IATA Comment 1] consider a destination aerodrome as an isolated aerodrome if the alternate and final reserve fuel required to the nearest adequate destination alternate aerodrome is more than:</p> <p data-bbox="295 1657 1420 1769">(1) for aeroplanes with reciprocating engines, the fuel to fly for 45 min plus 15 % of the flying time planned to be spent at cruising level or for 2 hours, whichever is less; or</p> <p data-bbox="295 1780 1420 1881">(2) for turbine-engined aeroplanes, the fuel to fly for 2 hours at normal cruising consumption <u>above the destination aerodrome, including the final reserve fuel.</u></p> <p data-bbox="295 1892 1473 2027">(b) If the operator's fuel policy includes planning to an isolated aerodrome, the point of no return to any available en-route alternate (ERA) aerodrome should be used as the predetermined point (as per PDP procedure). [IATA Comment 2]</p>
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~~(c) The amount of usable fuel on board for departure should be as indicated in (1) or (2) below, whichever is greater. (1) It should be~~ [IATA Comment 3]

~~(iii) taxi fuel;~~

~~(iv) trip fuel from the departure aerodrome to the isolated aerodrome, via the point of no return;~~

~~(v) contingency fuel calculated in accordance with the operator's current fuel scheme;~~

~~(vi) additional fuel, if required, but not less than:~~

~~(A) for aeroplanes with reciprocating engines, the fuel to fly for 45 min plus 15 % of the flight time planned to be spent at cruising level or for 2 hours, whichever is less; or~~

~~(B) for turbine-engined aeroplanes, the fuel to fly for 2 hours at normal cruising consumption above the destination aerodrome, which should not be less than the final reserve fuel;~~

~~(vii) extra fuel; and~~

~~(viii) discretionary fuel if required by the commander.~~

~~(2) It should be the sum of:~~

~~(i) taxi fuel;~~

~~(ii) trip fuel from the departure aerodrome to the en-route alternate (Fuel ERA) aerodrome, via the point of no return;~~

~~(iii) contingency fuel calculated in accordance with the operator's current fuel scheme~~

~~(iv) additional fuel, if required, but not less than:~~

~~(A) for aeroplanes with reciprocating engines, fuel to fly for 45 min; or~~

~~(B) for turbine-engined aeroplanes, fuel to fly for 30 min at holding speed at 1 500 ft (450 m) above the fuel ERA aerodrome elevation in standard conditions, which should not be less than the final reserve fuel;~~

~~(v) extra fuel; and~~

~~(vi) discretionary fuel if required by the commander.~~

[IATA Comment 1] The operator « can » consider a DEST as isolated if ...

The operator is not obliged, he could decide to take the fuel for an DEST ALT which would end with ALT + FINAL > 2Hours. It is its choice.

[IATA Comment 2] As we keep the PDP procedure as an accepted variation this is the simplest way to manage the isolated aerodrome.

response	<p>[IATA Comment 3] When using a point of no return procedure it makes no sense to say “the greater of 2 quantities of fuel”. The Point of no return is the point when the remaining fuel quantity permits exactly the two options: continue to DEST or divert to an ERA.</p> <p>Partially accepted.</p> <p>The text was amended, and PDP was not preserved.</p> <p>Identical comment: 127 (see also comment 202).</p>
comment	<p>163 comment by: IATA</p> <p>Comment 8</p> <p>AMC1 CAT.OP.MPA.183(d)&(e) Fuel scheme — selection of aerodromes policy — aeroplanes</p> <p>BASIC FUEL SCHEMES — BASIC ALTERNATE AERODROME POLICY — AEROPLANES</p> <p>Table 1 — Planning minima</p> <p>Destination alternate aerodrome, isolated destination aerodrome, fuel ERA aerodrome</p> <p><i>The table proposed in the NPA is only an example based on the fact that the table should normally, at the same time, fulfil the two requirements of:</i></p> <p>CAT.OP.MPA.183 Fuel scheme — selection of aerodromes policy — aeroplanes</p> <p>(d) The operator shall apply appropriate safety margins to flight planning in order to take into account possible deterioration of the meteorological conditions at the estimate time of landing compared to the available forecast.</p> <p>AND</p> <p>(e) The operator shall ensure, for each instrument flight rules (IFR) flight, that sufficient means are available to navigate and land at the destination aerodrome or at any destination alternate aerodrome in the case of loss of capability for the intended approach and landing operation.</p> <p><i>This means the highest of an add-on to the operating minima and the minima of the next type of approach.</i></p> <p><i>The AWO RMT should confirm this point or decide that an add-on is enough. But in that later case (e) above should be adapted.</i></p>
response	<p>Accepted.</p> <p>The planning minima tables, as well as the entire structure of point CAT.OP.MPA.183 (now new point CAT.OP.MPA.182) and related AMC and GM, were changed, compared to the NPA 2016-06 (A) versions. The new planning minima tables (for basic fuel schemes and basic fuel schemes with variations) were redrafted and coordinated with RMT.0379 ‘All-weather operations’.</p>

More explanations are provided in Section 2.3.2. 'Overview of the proposals' of [Opinion No 02-2020](#).

Identical comment: 128

comment

168

comment by: *European Cockpit Association*

ECA Comment on New GM1 CAT.OP.MPA.181(c)(1):

New GM1 CAT.OP.MPA.181(c)(1) is introduced as follows:

GM1 CAT.OP.MPA.181(c)(1) Fuel scheme — fuel planning and in-flight replanning policy

BASIC FUEL SCHEME — TAXI FUEL — LOCAL CONDITIONS

Local conditions include notice to airmen (NOTAM), meteorological conditions, air traffic services (ATS) procedures (e.g. low visibility procedures (LVP), collaborative decision-making (CDM)), and any anticipated delay(s).

ECA suggests adding to this list: ...and runway usage and expected taxi routing

response

Not accepted.

Local conditions are general conditions at the aerodrome, while taxi routing is a particular instruction that is planned for or given to each individual aircraft.

Expected taxi routing is covered by point CAT.OP.MPA.181 (c)(1):

(c) *The operator shall ensure that the preflight calculation of usable fuel/energy that is required for a flight includes:*

(1) *taxi fuel that shall not be less than the amount expected to be used prior to take-off;*

As per AMC1 CAT.OP.MPA.181, APU fuel consumption is included as a second add-on layer for planning purposes.

Local conditions that are described in point (a) of GM1 CAT.OP.MPA.181 include runway usage under 'anticipated delays', and are a third add-on layer for planning purposes.



comment

169

comment by: *European Cockpit Association***ECA Comment on AMC1 CAT.OP.MPA.183:**

AMC1 CAT.OP.MPA.183 Fuel scheme — selection of aerodromes policy — aeroplanes; BASIC FUEL SCHEMES — BASIC ALTERNATE AERODROME POLICY — AEROPLANES

(b) The operator should select in addition to the destination aerodrome at least one destination alternate aerodrome for each instrument flight rules (IFR) flight and specify it in the operational and ATS flight plans **unless:**

(1) the duration of the planned flight from take-off to landing or, in the event of in-flight replanning in accordance with CAT.OP.MPA.181(d), the remaining flying time to destination does not exceed 6 hours; and

(2) two separate runways are usable at the destination aerodrome, and the appropriate weather reports and/or forecasts for the destination aerodrome indicate that for the period from 1 hour before until 1 hour after the expected time of arrival at the destination aerodrome, the ceiling will be at least 2 000 ft (600 m) or the circling height +500 ft (150 m), whichever is greater, and the ground visibility will be at least 5 km.

ECA Comment:

Under these circumstances, the no alternate planning is unacceptable. The ICAO doc 9976 indicates that a “reasonable certainty” must exist for “visual conditions”.

Within Europe a 6 hour planning time and weather minima (b) does not give the operator and pilot sufficient certainty. Thunderstorms or other hazardous weather phenomena are not taken into account, nor are the general complete airport closures.

ECA comment: Discard the No alternate planning or lower time window and add additional conditions:

(1) the duration of the planned flight from take-off to landing or, in the event of in-flight replanning in accordance with CAT.OP.MPA.181(d), the remaining flying time to destination **does not exceed 2 hours;** and

(2) two separate runways are usable at the destination aerodrome, and the appropriate weather reports and/or forecasts for the destination aerodrome indicate that for the period from 1 hour before until 1 hour after the expected time of arrival at the destination aerodrome, the ceiling will be at least 2 000 ft (600 m) or the circling height +500 ft (150 m), whichever is greater, and the ground visibility will be at least 5 km and **no thunderstorms or shower activities, or other operational issues taken into account by the PIC are present or expected in the vicinity of the aerodrome**

(3) the flight can otherwise not be carried out with the anticipated payload



response

Not accepted.

The rule is in the Air OPS Regulation, as incorporated from EU-OPS. EASA does not have enough data to carry out a safety case study and propose such a change to the rule. If more safety data is available, to substantiate such a change, then the proposed rule change could be reconsidered.

RG RMT.0573 believes that most of the mitigation measures should be taken at in-flight fuel management level.

The IR on aerodrome selection policy was renumbered, compared to [NPA 2016-06 \(A\)](#), as point CAT.OP.MPA.182, and the related AMC and GM were renumbered accordingly.

comment

175

comment by: *European Cockpit Association*

ECA Comment on the new AMC1 CAT.OP.MPA.185(a):

New AMC1 CAT.OP.MPA.185(a) is introduced as follows:

AMC1 CAT.OP.MPA.185(a) Fuel scheme — in-flight fuel management policy — aeroplanes; BASIC IN-FLIGHT FUEL MANAGEMENT POLICY — AEROPLANES

(...)

(b) In-flight fuel management

(1) The flight should be conducted so that the expected usable fuel remaining on arrival at the destination aerodrome is not less than:

(i) the required alternate fuel plus the final reserve fuel; or

(ii) the final reserve fuel if no alternate aerodrome is required.

ECA Comment:

(ii) the final reserve fuel plus 15 min holding fuel (at 1500').

ECA's concern is that in combination with GM1 CAT.OP.MPA.185(a)(4),(b)&(c) this basic in-flight fuel management policy can lead to situations where a normal operation can change abruptly to a fuel emergency situation. This situation is not acceptable.

response

Not accepted.

The development of a comprehensive in-flight fuel management policy, in line with the new AMC1 CAT.OP.MPA.185(a) and the new GM1 CAT.OP.MPA.185, should help the commander to manage low-fuel situations, reducing to the minimum the possibility to enter into an emergency situation.

Moreover, point (b)(1)(ii) incorporated the relevant ICAO standard (Annex 6, Part 1, Section 4.3.7.2).



comment	<p>180</p> <p style="text-align: right;">comment by: <i>Airbus</i></p> <p>Page 44 / Paragraph 3.7 – Sub paragraph 1. – Introduction of GM1 CAT.OP.MPA.107 / GM1 CAT.OP.MPA.107</p> <p>PROPOSED TEXT / COMMENT:</p> <p>Suggest not to introduce this GM.</p> <p>RATIONALE / REASON / JUSTIFICATION:</p> <p>What is the added value of adding this information as a GM? The definition of an adequate aerodrome found in Annex I to IR-OPS is clear and simple and does not consider weather.</p> <p>For operators, it is obvious that an adequate airport is an airport physically able to receive the aircraft with its weight and performance, regardless of the weather, hence the proposal not to introduce this new GM.</p>
response	<p>Not accepted.</p> <p>EASA received a large number of requests to clarify the rule. Therefore, the new GM1 CAT.OP.MPA.107 was redrafted to clarify that weather conditions are not required to be taken into account for an adequate aerodrome.</p>

comment	<p>181</p> <p style="text-align: right;">comment by: <i>European Cockpit Association</i></p> <p>ECA Comment on the new GM1 CAT.OP.MPA.185(b)(3):</p> <p>New GM1 CAT.OP.MPA.185(b)(3) is introduced as follows:</p> <p>GM1 CAT.OP.MPA.185(b)(3) Fuel scheme — in-flight fuel management policy — aeroplanes; DECLARATION OF MINIMUM FUEL</p> <p>The declaration of MINIMUM FUEL informs the air traffic control (ATC) that all planned aerodrome options have been reduced to a specific aerodrome of intended landing, and that any change to the existing clearance may result in landing with less than the planned final reserve fuel. This is not an emergency situation but an indication that an emergency situation is possible, should any additional delay occur.</p> <p>Pilots should not expect any form of priority handling as a result of a MINIMUM FUEL declaration. The ATC should, however, advise the flight crew of any additional expected delays, as well as coordinate when transferring the control of the aeroplane, to ensure that other ATC units are aware of the flight's fuel state.</p> <p>Guidance on declaring MINIMUM FUEL is contained in ICAO Doc 9976 — Flight Planning and Fuel Management (FPFM) Manual (1st Edition, 2015).</p> <p>ECA Comment: We support the inclusion of the “Minimum Fuel” call and also the description of the responsibilities of air traffic control when a “Minimum Fuel” call is communicated.</p>
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response

Noted.

comment

182

comment by: Airbus

Page 45 / Paragraph 3.7 – Sub paragraph 3. – Introduction of AMC1 CAT.OP.MPA.180 / AMC1 CAT.OP.MPA.180 Fuel scheme – Basic fuel scheme

PROPOSED TEXT / COMMENT:

Rewording proposal:

(a) A basic fuel scheme should **fully** comply with AMC1 CAT.OP.MPA.181.....

Instead of

(a) A basic fuel scheme should comply **in full** with AMC1 CAT.OP.MPA.181.....

RATIONALE / REASON / JUSTIFICATION:

Wording improvement.

response

Partially accepted.

The phrase ‘in full’ was deleted, as the entire content of an AMC1 CAT.OP.MPA.180 should be met.

comment

183

comment by: Airbus

Page 46 / Paragraph 3.7 – Sub paragraph 5. – Introduction of AMC3 CAT.OP.MPA.180 / AMC3 CAT.OP.MPA.180 Fuel scheme – Individual fuel scheme

PROPOSED TEXT / COMMENT:

AMC3 CAT.OP.MPA.180(e) provides a list of operational capabilities supporting the implementation of a fuel scheme.

Suggests keeping a high level description of the operational capabilities rather than listing only 3 of them (RNP, RNAV, VNAV).

Proposed wording:

(e) The operator should possess operational capabilities **necessary for the declared route(s)**, which can support the implementation of an individual fuel scheme

RATIONALE / REASON / JUSTIFICATION:

Why limiting the operational capabilities which have a minor impact on fuel reserves to RNP, RNAV and VNAV? Other types of operations, in particular ETOPS operations may require operators to load additional fuel quantities to support some of the concerned routes.



	<p>ETOPS is not listed, as well as other major operational capabilities, such as MNPS over oceanic areas, or CAT I, II, III approaches.</p> <p>Therefore the impact of types of operations other than those listed on fuel schemes should also be considered by operators.</p>
response	<p>Partially accepted.</p> <p>Point (e)(5) of AMC3 CAT.OP.MPA.180 was amended to add the approval for low-visibility approach operations.</p> <p>ETOPS requires a specific approval for CAT operations.</p> <p>As fuel reserves are restrained, it is essential that an individual fuel scheme reduces as much as possible the difference between the trip fuel that was calculated during the preflight preparation and the actual trip fuel that is consumed during the flight. Accurate navigation that minimises deviation from the initial planned flight track is then necessary. This is why the AMC requires PBN capabilities, as EASA expects an increased use of area navigation (RNAV) and RNP applications in the future.</p>

comment	<p>185 comment by: Airbus</p> <p>Page 57 / Paragraph 3.7 – Sub paragraph 26. – Introduction of AMC1 CAT.OP.MPA.183 / AMC1 CAT.OP.MPA.183 Fuel scheme – selection of aerodromes policy – aeroplanes</p> <p>Page 58 & 59 / Paragraph 3.7 – Sub paragraph 27. – Introduction of AMC1 CAT.OP.MPA.183(d)&(e) / AMC1 CAT.OP.MPA.183(d)&(e) Basic fuel schemes – basic alternate aerodrome policy – aeroplanes</p> <p>Page 59 / Paragraph 3.7 – Sub paragraph 28. – Introduction of AMC2 CAT.OP.MPA.183 / AMC2 CAT.OP.MPA.183 Fuel scheme with variations – isolated aerodrome – point of no return</p> <p>PROPOSED TEXT / COMMENT:</p> <p>Suggestion to keep at CAT.OP.MPA.180 or 183 level and not to an AMC/GM level:</p> <p>AMC1 CAT.OP.MPA.183 should be kept in CAT.OP.MPA.180 or moved as requirement in CAT.OP.MPA.183.</p> <p>AMC1 CAT.OP.MPA.183(d)&(e) should be kept in CAT.OP.MPA.185 or moved as requirement in CAT.OP.MPA.183. In addition numbering (3) and (4) in AMC2 should be reviewed as it seems erroneous.</p> <p>AMC2 CAT.OP.MPA.183 should be kept in CAT.OP.MPA.106(b) or moved as requirement in CAT.OP.MPA.183</p> <p>RATIONALE / REASON / JUSTIFICATION:</p> <p>There is a risk for confusion, and loss of adequate consideration of those requirements on selection of aerodromes required to support their routes/network and on planning minima.</p>
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response

Not accepted.

The safety objective that operators must fulfil is in point CAT.OP.MPA.185 (IR level), while the related AMC that contain various degrees of flexibility (AMC1 CAT.OP.MPA.185, AMC2 CAT.OP.MPA.185, and AMC3 CAT.OP.MPA.185) provide different means to fulfil that safety objective. Moving the text of point CAT.OP.MPA.280 on in-flight fuel management to the AMC ensures more flexibility in the means of compliance, while keeping those AMC linked to the higher-level safety objective of point CAT.OP.MPA.185.

Similar comments: 179 and 186.

comment

186

comment by: Airbus

Page 61 / Paragraph 3.7 – Sub paragraph 33. – Introduction of AMC1 CAT.OP.MPA.185(a) / AMC1 CAT.OP.MPA.185(a) Fuel scheme with variations – in-flight management policy – aeroplanes

PROPOSED TEXT / COMMENT:

This requirement seems to be too important to be moved from the level of a CAT.OP requirement to an AMC level. Therefore it is suggested to integrate this part of former CAT.OP.MPA.280 in its entirety in CAT.OP.MPA.185.

RATIONALE / REASON / JUSTIFICATION:

Through recent certification exercises, some major TC authorities have claimed that on long haul routes flight crews may not perform frequent, regular and systematic fuel quantity checks (e.g. every 15 to 30 min, at every waypoint).

This is why Airbus usually insists on the fact that operators / flight crews have to continuously comply with and rely on operations regulations, which require frequent in-flight fuel checks.

Moving this requirement to an AMC totally weakens it and entails a risk for less systematic fuel checks in flight by flight crews, hence decreasing flight safety by preventing anticipation of low fuel and/or fuel exhaustion events.

response

Not accepted.

The safety objective that operators must fulfil is in point CAT.OP.MPA.185 (IR level), while the related AMC that contain various degrees of flexibility (AMC1 CAT.OP.MPA.185, AMC2 CAT.OP.MPA.185, and AMC3 CAT.OP.MPA.185) provide different means to fulfil that safety objective. Moving the text of point CAT.OP.MPA.280 on in-flight fuel management to the AMC ensures more flexibility in the means of compliance, while keeping those AMC linked to the higher-level safety objective of point CAT.OP.MPA.185.

Similar comments: 179 and 185.



comment	<p>199</p> <p style="text-align: right;">comment by: FNAM</p> <p>AMC1 CAT.OP.MPA.181</p> <p>Furthermore, the FNAM suggests to standardize the taxi fuel definition stated in the CAT.OP.MPA.150 / AMC1 CAT.OP.MPA.150 and in the CAT.OP.MPA.181 / AMC1 CAT.OP.MPA.181. Indeed, in order to avoid redundancy, the FNAM suggests to only put in the AMC1 CAT.OP.MPA.181 the following complement of the definition stated in the corresponding IR, like in the AMC1 CAT.OP.MPA.150:</p> <p><i>“taxi fuel which should take into account local conditions at the departure aerodrome and auxiliary power unit (APU) consumption;”</i></p>
response	Accepted.

comment	<p>200</p> <p style="text-align: right;">comment by: FNAM</p> <p>AMC2 CAT.OP.MPA.181</p> <p>PDP is still present in the “in flight fuel management”. Therefore, the FNAM thinks PDP should be described in “Fuel scheme with variation”. The isolated aerodrome is just a specific way of using it. Hence, we suggest to add a paragraph (e) describing the predetermined point (PDP) procedure:</p> <p><i>“(e) Predetermined point (PDP) procedure</i></p> <p><i>If the operators fuel policy includes planning 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 (e)(1) or (e)(2):</i></p> <p><i>(1) The sum of:</i></p> <p><i>(i) taxi fuel;</i></p> <p><i>(ii) trip fuel from the departure aerodrome to the destination aerodrome, via the predetermined point;</i></p> <p><i>(iii) contingency fuel calculated in accordance with (c)(3);</i></p> <p><i>(iv) additional fuel if required, but not less than:</i></p> <p><i>(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 2 hours, whichever is less; or</i></p> <p><i>(B) for aeroplanes with turbine engines, fuel to fly for 2 hours at normal cruise consumption above the destination aerodrome, this should not be less than final reserve fuel; and</i></p> <p><i>(v) extra fuel</i></p>
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(vi) discretionary fuel if required by the commander.

(2) 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 (c)(3);

(iv) additional fuel if required, but not less than:

(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 2 hours, whichever is less; 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, this should not be less than final reserve fuel; and

(v) extra fuel

(vi) discretionary fuel if required by the commander.»

response

Not accepted.

This variation was covered in point CAT.OP.MPA.150, which is incorporated in the new point CAT.OP.MPA.181. There is no more reference to PDP, which was replaced with 'point of no return'.

comment

201

comment by: FNAM

AMC1 CAT.OP.MPA.185(a)

In order to ensure consistency, the FNAM suggests to add the some precisions regarding the additional fuel:

“ii) On a flight using the predetermined point (PDP) procedure to proceed to the destination aerodrome, the commander should ensure that the usable fuel remaining at the PDP is 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; and

(C) additional fuel, *if required, but not less than:*

(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 2 hours, whichever is less; or

(B) for aeroplanes with turbine engines, fuel to fly for 2 hours at normal cruise



response	<p><i>consumption above the destination aerodrome, this should not be less than final reserve fuel."</i></p> <p>Partially accepted.</p> <p>The new AMC2 CAT.OP.MPA.185(a) is applicable to the basic fuel scheme with variations. Point (b) of the AMC was redrafted for clarity and consistency. PDP was replaced with 'point of no return'.</p>
comment	<p>202 comment by: <i>FNAM</i></p> <p>AMC2 CAT.OP.MPA.183</p> <p>The FNAM suggests to replace the word "should" with the word "can" in the sentence: "a) An operator should can consider a destination aerodrome as an isolated aerodrome if the alternate and final reserve fuel required to the nearest adequate destination alternate aerodrome is more than". Indeed, it is not an obligation for the operator, he could decide to take the fuel for a destination alternate aerodrome which would end with ALT + FINAL > 2 hours. It is his choice.</p> <p>Besides, if the PDP procedure is an accepted variation, when using a point of no return procedure it does not make sense anymore to say "the greater of 2 quantities of fuel". The Point of no return is the point where the remaining fuel quantity permits exactly the two options: continue to DEST or divert to an ERA.</p> <p>Therefore, in order to ensure consistency the FNAM suggests to change the AMC2 CAT.OP.MPA.183 as follows:</p> <p>"AMC2 CAT.OP.MPA.183 Fuel scheme — selection of aerodromes policy — aeroplanes</p> <p>FUEL SCHEME WITH VARIATIONS — ISOLATED AERODROME — POINT OF NO RETURN</p> <p>(a) An operator should can consider a destination aerodrome as an isolated aerodrome if the alternate and final reserve fuel required to the nearest adequate destination alternate aerodrome is more than:</p> <p>(1) for aeroplanes with reciprocating engines, the fuel to fly for 45 min plus 15 % of the flying time planned to be spent at cruising level or for 2 hours, whichever is less; or</p> <p>(2) for turbine-engined aeroplanes, the fuel to fly for 2 hours at normal cruising consumption above the destination aerodrome, including the final reserve fuel.</p> <p><i>(b) If the operator's fuel policy includes planning to an isolated aerodrome, the point of no return to any available en-route alternate (ERA) aerodrome should be used as the predetermined point (as per PDP procedure).</i></p> <p><i>(c) The amount of usable fuel on board for departure should be as indicated in (1) or (2) below, whichever is greater. (1) It should be the sum of:</i></p> <p>(iii) taxi fuel;</p> <p>(iv) trip fuel from the departure aerodrome to the isolated aerodrome, via the point of</p>

no return;

(v) contingency fuel calculated in accordance with the operators current fuel scheme;

(vi) additional fuel, if required, but not less than:

(A) for aeroplanes with reciprocating engines, the fuel to fly for 45 min plus 15 % of the flight time planned to be spent at cruising level or for 2 hours, whichever is less; or

(B) for turbine-engined aeroplanes, the fuel to fly for 2 hours at normal cruising consumption above the destination aerodrome, which should not be less than the final reserve fuel;

(vii) extra fuel; and

(viii) discretionary fuel if required by the commander.

~~(2) It should be the sum of:~~

~~(i) taxi fuel;~~

~~(ii) trip fuel from the departure aerodrome to the en-route alternate (Fuel ERA) aerodrome, via the point of no return;~~

~~(iii) contingency fuel calculated in accordance with the operators current fuel scheme~~

~~(iv) additional fuel, if required, but not less than:~~

~~(A) for aeroplanes with reciprocating engines, fuel to fly for 45 min; or~~

~~(B) for turbine-engined aeroplanes, fuel to fly for 30 min at holding speed at 1 500 ft (450 m) above the fuel ERA aerodrome elevation in standard conditions, which should not be less than the final reserve fuel;~~

~~(v) extra fuel; and~~

~~(vi) discretionary fuel if required by the commander.”~~

response

Partially accepted.

The text was amended, and PDP was not preserved.

Point CAT.OP.MPA.183 on aerodrome selection policy was renumbered as new point CAT.OP.MP.182.

Identical comments: 127 and 162.



comment	203	comment by: FNAM
	<p>AMC1 CAT.OP.MPA.196</p> <p>Regarding the AMC1 CAT.OP.MPA.196, the FNAM suggests to standardize the terms used to designate the “Refuelling with an engine running”. Therefore, we suggest to replace the word “hot-refuelling” with “refuelling with an engine running” in the last paragraph of the AMC1 CAT.OP.MPA.196.</p>	
response	Accepted.	

comment	204	comment by: Lufthansa Systems Lido/Flight CK
	<p>Comment to point 29 (page 60): GM1 CAT.OP.MPA.183(b) Fuel scheme — Selection of aerodromes policy — aeroplanes REACHING THE DESTINATION</p> <p>I would like to suggest a small wording change within the last sentence (replace the word 'from' by 'than') to read now, as follows: "For isolated aerodromes, reaching the destination means being as close as possible to the destination but not at or farther away than the point of no return."</p>	
response	<p>Not accepted.</p> <p>The sentence was deleted, because the text of GM1 CAT.OP.MPA.183(b) was moved to the new point (f) of AMC1 CAT.OP.MPA.182 on basic fuel schemes and basic fuel schemes with variations, as well as to new GM3 CAT.OP.MPA.182 on reaching the destination, applicable to individual fuel schemes, to adjust to the complete change of point CAT.OP.MPA.182 on aerodrome selection policy.</p> <p>More explanations on reaching the destination are provided in Section 2.3.2. ‘Overview of the proposals’ of Opinion No 02-2020.</p>	

comment	205	comment by: Lufthansa Systems Lido/Flight CK
	<p>Comment to point 30. (page 61): New GM1 CAT.OP.MPA.183(c) Use of isolated aerodromes – aeroplanes</p> <p>The definition of normal cruising consumption being “the fuel consumption at the cruising flight level prior to top of descent” will raise further discussion about the correct interpretation: Which “top of descent” shall define the cruising level?</p> <p>Imagine the following flight plan: LEMD N0446F360 SIE (...) UN867 KOKOS/N0445F300 UN867 SAM/N0441F280 UM140 EXMOR UN864 NUMPO DCT BEDEK/N0378F140 OCK2F EGLL</p>	

There we would have several step-downs from cruising level, partly due to arrival- or traffic flow restrictions (FL360->300->280->140).

Which of these “top of descents” should be applicable for the definition of the fuel consumption?

The final “top of descent” at BEDEK would lead to a very high fuel flow, while the “top of descent” at KOKOS is almost half way between departure and destination.

response

Accepted.

The text is in point (a) of the new AMC2 CAT.OP.MPA.182, and was changed as per ICAO Annex 6, Part I, and Doc 9976.

The new GM2 CAT.OP.MPA.182 was also amended to clarify that for calculation purposes, the fuel that is required for turbine-engined aeroplanes has to cover flying for 90 minutes at normal cruise consumption (holdover time) plus 30-minute FRF.

comment

207

comment by: Lufthansa Systems Lido/Flight CK

Comment to AMCs/GMs in respect to **CAT.OP.MPA.183** (pages 56 till 61):

Today's CAT.OP.MPA.182 will now be included in **CAT.OP.MPA.183 Fuel scheme - selection of aerodrome policy - aeroplanes** as chapter (e). Therefore I expected to see the below mentioned AMC and GM as "new AMC1 CAT.OP.MPA.183(e) and GM1 CAT.OP.MPA.183(e). However nothing is mentioned here. Is this AMC/GM still valid? And if so, where will it be published in the future?

‘CAT.OP.MPA.182 Destination aerodromes — instrument approach operations

The operator shall ensure that sufficient means are available to navigate and land at the destination aerodrome or at any destination alternate aerodrome in the case of loss of capability for the intended approach and landing operation.’

‘AMC1 CAT.OP.MPA.182 Destination aerodromes — instrument approach operations PBN OPERATIONS

The pilot-in-command should only select an aerodrome as a destination alternate aerodrome if an instrument approach procedure that does not rely on GNSS is available either at that aerodrome or at the destination aerodrome.’

‘GM1 CAT.OP.MPA.182 Destination aerodromes — instrument approach operations INTENT OF AMC1

(a) The limitation applies only to destination alternate aerodromes for flights when a destination alternate aerodrome is required. A take-off or en route alternate aerodrome with instrument approach procedures relying on GNSS may be planned without restrictions. A destination aerodrome with all instrument approach procedures relying solely on GNSS may be used without a destination alternate aerodrome if the conditions for a flight without a destination alternate aerodrome are met.



response	<p>(b) The term 'available' means that the procedure can be used in the planning stage and complies with planning minima requirements.'</p> <p>Accepted.</p> <p>The content of point CAT.OP.MPA.182 was added to new point CAT.OP.MPA.182 (f).</p> <p>The related AMC and GM to point CAT.OP.MPA.182 were moved to the new AMC1 CAT.OP.MPA.182(f) and GM1 CAT.OP.MPA.182(f).</p>
comment	<p>208 comment by: <i>Lufthansa Systems Lido/Flight CK</i></p> <p>Comment to point 20. (page 55): GM2 CAT.OP.MPA.181 (c)(3) Fuel scheme - fuel planning and in-flight replanning policy</p> <p>in c) 90 % coverage there is still the reference to the "old" CAT.OP.MPA.180(b)(2) [marked in yellow]:</p> <p>(1) the calculated flight time is more than 2 h;</p> <p>(2) a weather-permissible ERA aerodrome is available; and</p> <p>(3) at the destination aerodrome two separate runways are available and usable, one of which is equipped with an instrument landing system (ILS)/ microwave landing system (MLS), and the weather conditions are in compliance with CAT.OP.MPA.180(b)(2), or the ILS/MLS is operational to CAT II/III operating minima and the weather conditions are at or above 500 ft.</p>
response	<p>Accepted.</p> <p>The reference was corrected: point CAT.OP.MPA.182(e) and related AMC1 CAT.OP.MPA.182(e) and AMC2 CAT.OP.MPA.182(e).</p>
comment	<p>210 comment by: <i>Lufthansa Systems Lido/Flight CK</i></p> <p>Comment to point 20. (page 55): GM2 CAT.OP.MPA.181 (c)(3) Fuel scheme - fuel planning and in-flight replanning policy</p> <p>in c) 90 % coverage in (3) at least one of the two separate runways has to be equipped with an ILS or MLS. Why are other precision approaches like GLS or PAR excluded here? In the not too far distant future we might even see GLS CATII/III operating minima.</p> <p>...</p> <p>(3) at the destination aerodrome two separate runways are available and usable, one of which is equipped with an instrument landing system (ILS)/ microwave landing system (MLS), and the</p>

	weather conditions are in compliance with CAT.OP.MPA.180(b)(2), or the ILS/MLS is operational to CAT II/III operating minima and the weather conditions are at or above 500 ft.
response	Accepted. The text was amended to accommodate a wider range of precision APCHs.

comment	212 comment by: <i>Finnish Transport Safety Agency</i> GM1 CAT.OP.MPA.181(c)(1) Local conditions could include also mention of winter operations (e.g. remote de-/anti-icing pads).
response	Accepted.

comment	213 comment by: <i>Lufthansa Systems Lido/Flight CK</i> Comments to point 27. (pages 58 & 59), Table 1 - Planning minima a) what is the exact definition of Type A instrument approach? So far we used the term NPA = Non Precision Approach here b) Category 1 (CAT I) includes GLS approaches, which today have DH/RVR values of an ILS CAT1, correct?
response	Noted. The planning minima tables are now included in the new AMC1 CAT.OP.MPA.182 and AMC2 CAT.OP.MPA.182. New definitions for type A and type B approached will be introduced through RMT.0379 'All-weather operations'. The planning minima table for basic fuel schemes was changed, and a new one was created for basic fuel schemes with variations. More explanations are provided in Section 2.3.2. 'Overview of the proposals' of Opinion No 02-2020 .

comment	214 comment by: <i>Lufthansa Systems Lido/Flight CK</i> Comments to point 27. (pages 58 & 59), Table 1 - Planning minima With this table determination of planning minima for destination alternates, isolated aerodromes and fuel ERAs can still be inconsistent with the Planning minima to be determined for ETOPS based on table 1 of AMC1 CAT.OP.MPA.140(d). It is still possible that an airport cannot be used as
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	destination alternate although it fulfils the planning minima as ETOPS alternate. That is always hard to explain to flight crews.
response	<p>Accepted.</p> <p>The planning minima table for basic fuel schemes of AMC1 CAT.OP.MPA.182 was changed, based on the values of the ETOPS table. Another table for basic fuel schemes with variations was created in AMC2 CAT.OP.MPA.182, which proposes different values. More explanations are provided in Section 2.3.2. 'Overview of the proposals' of Opinion No 02-2020.</p> <p>See also comment 1.</p>

comment	<p>215</p> <p style="text-align: right;">comment by: <i>NetJets Europe</i></p> <p><u>"AMC1 CAT.OP.MPA.183(d)&(e) Fuel scheme - selection of aerodromes policy aeroplanes" / "Table 1 - Planning minima";</u></p> <p>"Type of approach" column / 3rd row</p> <p>"LPV" should be removed as this is an instrument approach procedure and not a type of approach as per the column title. Also a LPV could be either TYPE A or TYPE B (CATI).</p> <p>Recommend change to:</p> <p>TYPE B</p> <p>Category SA-CAT I</p> <p>Category I</p> <p>or</p> <p>Category SA-CAT I</p> <p>Category I</p> <p>"Planning Minima" column / 3rd row</p> <p>Where it reads "Ceiling should be at or above MDH" this should read "Ceiling should be at or above DH or MDH" since there are 3D Type A approaches (e.g. LNAV/VNAV) for which only a DH will be published.</p> <p>"Planning Minima" column / 4th row</p> <p>Where it reads "Ceiling should be at or above MDH +200ft" this should read "Ceiling should be at or above DH or MDH +200ft" since there are 3D Type A approaches (e.g. LNAV/VNAV) for which only a DH will be published.</p> <p>"Crosswind planning minima" / bottom row</p> <p>This is not very clear:</p>
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	<p>Suggest changing to "Gusts should be fully applied and should not exceed crosswind limits taking into account the runway condition"</p> <p>Even though NetJets agrees that the gust should be accounted for with the crosswind, this is not in accordance with what is provided in GM2.CAT.OP.MPA Planning minima for IFR Flights - Aerodrome Weather forecasts. The table states that the Gusts may be disregarded.</p>
response	<p>Partially accepted.</p> <p>The planning minima table was changed, and the new one is based on the values of the ETOPS table. A new table was created in AMC2 CAT.OP.MPA.183(e) for basic fuel schemes with variations.</p> <p>Furthermore, Table 1 'Aerodrome weather forecasts' (TAF and TREND) to be used for pre-flight planning' of GM2 CAT.OP.MPA.185 was modified to clarify the limitations of wind gust, and elevated to AMC, as RG RMT.0573 agreed that its legal status should be stronger than that of GM.</p>
comment	<p>216 comment by: <i>NetJets Europe</i></p> <p>GM1 CAT.OP.MPA.183 Fuel scheme - selection of aerodromes policy - aeroplanes</p> <p>1st line of the text says "Non-precision minima (NPA) in Table 1..." however NPA are no longer referred to in Table 1.</p>
response	<p>Partially accepted.</p> <p>Proposed GM1 CAT.OP.MPA.183(b) was deleted and replaced by the new GM1 CAT.OP.MPA.185.</p>
comment	<p>217 comment by: <i>Wideroe Flyveselskap AS</i></p> <p>GM1 CAT.OP.MPA.181(c)(2) Fuel Scheme</p> <p>Widerøe Airline is in favor of planning fuel and track miles in a Point Merge STAR for the direct STAR to the Point Merge leg only.</p> <p>However, statistical data should ideally be produced by the ATS unit in form of regularly published statistics, in example in the AIP, so that the increased track miles and fuel burn can be accounted for in periods of peak traffic.</p> <p>It should preferably present data on average track miles flown during different periods of the day as peak hours most likely will indicate 10-20 more track miles than approaches flown during off peak.</p> <p>GM1 CAT.OP.MPA.181.(c)(5)</p> <p>Widerøe Airline is questioning the concept of "conservative rounded up FRF value".</p> <p>Is the rounding up to the nearest tenth, hundred or thousand?</p>

In example; The DASH-8/100 at low estimated landing mass will have an FRF of approximately 350 lbs, whereas an aircraft at maximum landing mass will have a FRF just above 400 lbs.

Rounding up to the nearest thousand is in this context not feasible as it more than doubles the FRF. When rounding up to the nearest hundred, in this case 500 lbs, the FRF increase with approximately thirty per cent at low estimated landing mass as compared with the actual calculated FRF.

Widerøe is using a sophisticated dynamic computerized flight planning system with accurately calculate zero fuel mass input and use company biased fuel burn data in calculation of the operational flight plan, including the FRF. This FRF figure is displayed on the OFP in bold text and the flight crew is trained in the concept of variable FRF as a function of the estimated landing mass.

Widerøe would like the GM to allow use of accurately calculated FRF provided the operator has a system for unambiguous presentation of the dynamic FRF to the flight crew.

response

Noted.

The GM describes the way in which the operator can comply with the IR.

The use of accurately calculated FRF is allowed.

4. RIA — 4.1. Issues to be addressed — 4.1.2. Problem areas — 4.1.2.1. Implementation issues p. 66-67

comment

89

comment by: J.Woehrlin/DLH

4.1.2.1

LHP: The way to have general rules for all Operators over the EU by establishing AMCs/GMs for related requirements is from LHPs point of view the safer and more operational approach instead of granting individual AltMocs, which need to be adopted onto different operational systems.

response

Noted.

4. RIA — 4.1. Issues to be addressed — 4.1.2. Problem areas — 4.1.2.2. Efficiency issues p. 67-68

comment

68

comment by: J.Woehrlin/DLH

Since DLH commenced analysing fuel usage on certain city pairs a few years ago, DLH strongly agrees with creating the option to apply for an individual fuel scheme. This is based on the



assumption, that a reliable database give pilots the certainty to base their decision for discretionary fuel on a broad database, resulting in economic savings and relieve for environment.

response Noted.

4. RIA — 4.1. Issues to be addressed — 4.1.5. Safety Occurrences

p. 69-70

comment 187

comment by: *Airbus*

Page 69 / Paragraph 4.1.5 Safety Occurrences

PROPOSED TEXT / COMMENT:

Airbus requests removal of reference to a fatal accident due to low fuel state, or EASA to detail this event in the list of events. Is it referred to Tuninter ATR 72 / Flight 1153 (16 fatalities)

RATIONALE / REASON / JUSTIFICATION:

The first sentence of this paragraph refers to a fatal in-service occurrence due to a low fuel state/condition. This event is not listed jointly with other low fuel events that all resulted in safe landings either at destination airport or at diversion airports.

Comment raised for RIA consistency.

response Noted for the RIA published in [NPA 2016-06 \(A\)](#).

Accepted for further development of similar texts.

The text of the aforementioned NPA Section 4.1.5 will be changed only if the final decision that issues the related AMC and GM requires a republication of the RIA. Otherwise, a new RIA is not required at this stage of the RMT.

4. RIA — 4.1. Issues to be addressed — 4.1.6. London Heathrow, 12 July 2013 — closure of the airport

p. 70-71

comment 67

comment by: *J.Woehrlin/DLH*

By this example of a "most critical situation" for a late inflight replanning with less alternatives for the relevant flight, LHP sees evidence that the actual fuel figures in special the FRF is sufficient.



response Noted.

comment 90 comment by: J.Woehrlin/DLH

4.1.6

LHR 12.07.2013:

LHP: This incident shows clearly, that with a robust inflight support and inflight fuel management and decision making model the actual/ nominal fuel figures, especially the FRF to fly 30' cover unexpected complex inflight contingencies caused by AP closure.

A further adoption of FRF does not create a higher level of overall safety.

The regulatory focus should be on standards to require always carrying enough fuel to cope with unpredicted situation. From a safety and economic point of view it shall be the aim to have a proper and reliable planning to prevent situations to fly with FRF only. Therefore the NPA does the correct approach to have a clear and stringent regulation to create a higher level of safety and prevent situations of fuel shortage by preventive proactive measures. Moreover it is vital, and therefore a major issue of this NPA to have robust procedure for preplanning and inflight planning stages. This approach by EASA does create a solid baseline for fuel planning to European operators.

response Noted.

4. RIA — 4.1. Issues to be addressed — 4.1.8. Study of the fuel-related occurrences stored in the European Central Repository (ECR) and the EASA Internal Occurrence Reporting System (IORS) database

p. 71-73

comment 91 comment by: J.Woehrlin/DLH

4.1.8

Data shows that 93% of reasons are based on WX, Tec, and ATC. Only 14% is caused by AD/RWY closure.

These figures do not mean a valid cause to speculate about nominal fuel figures, since examples have proven that this situation does not necessarily mean to land with less than FRF. It is more important to have early information, by ATC and operators inflight support departments, to supply the FC in an early stage of possible diversion as a preventive measure.

response Noted.



4. RIA — 4.3. Policy options

p. 79

comment	92	comment by: <i>J.Woehrlin/DLH</i>
	<p>Policy options:</p> <p>LHP recommends and votes for option 2.</p> <p>For future development of fuel schemes LHP is highly interested in the option to apply PBR.</p>	
response	Noted.	

4. RIA — 4.4. Methodology and data — 4.4.2. Applied methodology for economic and environmental impacts

p. 80-83

comment	93	comment by: <i>J.Woehrlin/DLH</i>
	Table 7 seems to be missing ?	
response	<p>Noted.</p> <p>The numbering of the tables was wrong; however, the NPA RIA will not be republished.</p> <p>Instead, after the NPA publication, a new RIA was developed for the changes made to the planning minima tables, and new data were used for the analysis.</p> <p>The same applies to tables 9, 12, and 13.</p>	
comment	96	comment by: <i>J.Woehrlin/DLH</i>
	<p>Table 6:</p> <p>What is the database, the prediction for future savings is based on?</p>	
response	<p>Noted.</p> <p>The RIA proposes several options to consider in the rulemaking process. The first option proposes no change to the current rules. Then, based on the complexity of the topic, the severity and urgency of the safety issue, several other options are considered in the development of the RMT, as well as for the final proposal of mitigations to the safety issue. EASA develops the RIA with the</p>	

support of its RIA experts, based on the analysis of data from the EASA safety databases, or from various studies or surveys, or other data collection tools that are necessary to support the result of the RIA.

The table that contains the estimation of fuel decrease (published in Chapter 4 'RIA' of the NPA) is based on an analysis of performance data, flight plan data, and manufacturer data of the flights, stemming from the aircraft fleet of the organisations that were represented in RMG RMT.0573. Average results were used for the analysis. More data about the survey that was conducted in the scope of this RIA can be found in Section 4.1.10 'General facts from the EU survey 'RMT.0573 – Fuel planning' sent to operators and NAAs in 2015' of [NPA 2016-06 \(A\)](#).

comment

206

comment by: *Lufthansa Systems Lido/Flight CK*

Comment to RIA, paragraph 4.4.2 (table 6, page 82): Applied methodology for economical and environmental impact – results of a case study:

The table 6 propagates possible fuel savings on a 2-hour European flight especially in the reduction of contingency fuel to values of 40kg or 100kg (instead of standard 5%/200kg).

We would like to point out that there's still the prescribed minimum contingency fuel of 5 minutes holding to be applied, generating typical fuel values of between 160kg and 230kg for standard flights of B737/A320 family aircraft – depending on load factors.

This would affect the estimated fuel savings for the PBRs.

response

Noted.

This is a misunderstanding of the Chapter 4 'RIA' table in the NPA. In an individual fuel scheme, the minimum contingency fuel of 5-minute holding would not apply.

4. RIA — 4.5. Analysis of impacts — 4.5.1. Safety impact

p. 83-84

comment

94

comment by: *J. Woehrlin/DLH*

LHP supports the approach to gain a higher degree of safety by implementing PBR

response

Noted.



4. RIA — 4.5. Analysis of impacts — 4.5.2. Environmental impact

p. 84-85

comment	95	comment by: <i>J.Woehrlin/DLH</i>
	LHP does strongly quote for an PBR which takes the environmental impacts into account in a way more than fuel schemes do today.	
response	Noted.	

4. RIA — 4.6. Comparison and conclusion — 4.6.1. Comparison of options

p. 89

comment	116	comment by: <i>UK CAA</i>
	<p>Page No: 89</p> <p>Paragraph No: 4.6.1, Comparison of options</p> <p>Comment: The UK CAA supports the selection of option 2 but considers that the impact on NAAs to provide appropriate training and resourcing could be quite significant and should not be underestimated.</p> <p>Justification: Assessment of impact on oversight activities.</p>	
response	<p>Noted.</p> <p>EASA agrees with the comment. To support the implementation of the new rules, EASA will organise workshops and publish additional safety promotion material to help authority inspectors exercise effective oversight over individual fuel schemes.</p>	

