European Aviation Safety Agency

Comment-Response Document 2014-19

Helicopter height-velocity limitations

CRD TO NPA 2014-19 — RMT.0132 & RMT.0515 (27&29.027) — 23.2.2016

Related Decision 2016/005/R

EXECUTIVE SUMMARY

This comment-response document (CRD) contains the comments received on Notice of Proposed Amendment (NPA) 2014-19 (published on 25 July 2014) and the responses provided thereto by EASA.

Based on specific comments and subsequent EASA deliberations, EASA decided to approach the height-velocity (H-V) limitation problem related to commercial air transport (CAT) with large helicopters performing performance class 2 (PC2) operations by way of a proposed change to Regulation (EC) No 216/2008 (the Basic Regulation).

EASA, therefore, considers that pending the approval of the proposed change to the Basic Regulation, the amendments to the implementing rules (IRs), certification specifications (CSs), acceptable means of compliance (AMC) and guidance material (GM), that were presented in NPA 2014-19, are no longer required.

Based on this, EASA proposes that RMT.0132 and RMT.0515 (27&29.027) be closed by an Executive Director decision until the proposed change to the Basic Regulation is examined by the European Parliament and the Council. If the proposed change to the Basic Regulation is adopted, the above-mentioned rulemaking task will remain closed. However, if the proposal is rejected, either RMT.0132 and RMT.0515 (27&29.027) will resume or a new rulemaking task will be launched.

Applicability	
Affected regulations and decisions:	N/A
Affected stakeholders:	Operators of CS-29 certified helicopters performing performance class 2 (PC2) operations, especially to offshore locations
Driver/origin:	Level playing field
Reference:	N/A

Process map	
Concept paper:	N/A
Terms of reference:	7.1.2013
Rulemaking group:	Yes
RIA type:	Light
Technical consultation during NPA drafting:	Yes
Publication date of the NPA:	25.7.2014
Duration of NPA consultation:	3 months
Review group:	N/A
Focused consultation:	N/A
Publication date of the Opinion:	N/A
Publication date of the Decision:	2016/Q4

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1. Procedural information

1.1. The rule development procedure

The European Aviation Safety Agency (hereinafter referred to as the 'Agency') developed this CRD in line with Regulation (EC) No 216/2008[1] and the Rulemaking Procedure[2].

This rulemaking activity is included in the Agency's 4-year Rulemaking Programme under RMT.0132 & RMT.0515 (27&29.027). The scope and timescale of the task were defined in the related terms of reference (see process map on the title page).

All interested parties were consulted through NPA 2014-19[3], which was published on 25 July 2014.

48 comments were received from industry, national aviation authorities, social partners and individuals.

The text of this CRD has been developed by the Agency.

The process map on the title page contains the major milestones of this rulemaking activity.

1.2. The structure of this CRD and related documents

A summary of the comments received on NPA 2014-19 is included in Chapter 2, as is the Agency's acknowledgement of the comments and the conclusion drawn.

A full set of the individual comments and responses thereto are presented in Chapter 3.

[1] Regulation (EC) No 216/2008 of the European Parliament and of the Council of 20 February 2008 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency, and repealing Council Directive 91/670/EEC, Regulation (EC) No 1592/2002 and Directive 2004/36/EC (OJ L 79, 19.3.2008, p. 1).

[2] The Agency is bound to follow a structured rulemaking process as required by Article 52(1) of the Basic Regulation. Such process has been adopted by the Agency's Management Board and is referred to as the 'Rulemaking Procedure'. See Management Board Decision 01-2012 of 13 March 2012 concerning the procedure to be applied by the Agency for the issuing of Opinions, Certification Specifications and Guidance Material (Rulemaking Procedure).

[3] http://easa.europa.eu/document-library/notices-of-proposed-amendment/npa-2014-19

2. Summary of comments and responses

The Agency received 48 comments on the NPA, which were provided by 18 commentators as follows:

Table 1

No	Commentators	Comments
7	National aviation authorities	12
3	Operators	3
3	Operator associations	3
3	Individuals	18
1	Manufacturer	11
1	Air traffic service provider	1
18		**48**

The comments represented the following categories:

Table 2

Comment categories	No
General (explanatory material, revised/new text)	15
Amending the Basic Regulation to allow derogation through an IR	12
Not supporting specific text or proposals	10
Validity of H-V envelope for the operations in question	7
Supporting the NPA (including 'No comments')	4
	48

When acknowledging the comments, the Agency became aware that a majority of commentators were proposing a change to the Basic Regulation instead of the proposed change to the IRs and CSs.

It also became clear that amending the CSs would:

(a) only affect new airworthiness approvals;

(b) impact on Bilateral Aviation Safety Agreements (BASAs)/Technical Implementation Procedures (TIPs) and validations in other third countries as they lead to dis-harmonisation between the airworthiness requirements;

(c) require additional effort to amend CS-26 and to recertify existing aircraft designs according to the new standard; and

(d) have financial and resources impact on industry and authority (retroactive requirements) for additional work without added value when compared to the existing operational situation.

The issue of a certification memorandum (CM) to clarify to rotorcraft manufacturers and operators the relationship between operating limitations for Category A procedures and the H-V diagram was also considered, and disregarded for the same reasons.

The following benefits of a change to the Basic Regulation were then considered:

(a) To allow reassurance to continue Article 14(4) until entry into force of the changes to the Basic Regulation;

(b) To have an immediate effect on **all existing** and **future** designs;

(c) With limited consequences on finance/resources, as no further rulemaking process and subsequent recertifications would be required.

Following deliberations within the Agency, it was decided that a change to the Basic Regulation should be proposed for approval by the European Parliament and the Council. The remaining comments on the NPA were not further validated for this reason.

Furthermore, the Agency considers that amendments to the IRs, CSs, AMC and GM will no longer be required if this proposal is approved.

Based on the above, the Agency proposes that RMT.0132 and RMT.0515 (27&29.027) be closed at this stage by an Executive Director decision until the proposed change to the Basic Regulation is examined by the European Parliament and the Council. If the proposed change to the Basic Regulation is adopted, the rulemaking task will remain closed. However, if the proposal is rejected, either RMT.0132 and RMT.0515 (27&29.027) will resume or a new rulemaking task will be launched.

3. Individual comments and responses

(General comments)	-

comment *7* comment by: *British Helicopter Association*

The purpose of NPA 2014-19, is to provide alleviation from the H-V Diagram as an Operational Limitation by: amending CS 29.1; providing a new AMC 29.1 and AMC 29.1587(b)(6); amending CAT.POL.H.300; and providing new AMC1 CAT.POL.H.300. The proposed solution is complex, and relies for achievement of its objective in circumventing the intended requirement to apply the H-V Diagram as a Limitation when the aircraft is certificated as a Category A rotorcraft, or when there are more than 9 passenger seats.
One inescapable fact that results from Part 29.1 is that, unless Category A procedures are mandated, the H-V Diagram is a Limitation when more than nine passengers are carried. In effect the changes proposed in NPA 2014-19 are an attempt to redefine the intent of CS 29.1 as established in NPRM 80-25 – which addressed the separation of 'utility' operations from 'passenger transportation'.
Removal of the H-V Diagram as a Limitation requires more than just statements in guidance; the solution contained in NPA 2014-19 represents a substantial challenge to the intent of CS 29.1 – i.e. the requirement to apply CS 29.1517 for 'passenger carriage'. This intent was explained/justified, when changes were made to the rule in NPRM 80-25. The proposed change to the intended function of 29.1 is unlikely to go unquestioned as it represents a breach in harmonisation under circumstances where regulation of performance in some States, depends upon the intended application of the rule.
The current method of alleviation, used in FAR 91.9(d) and Appendix 1 to JAR-OPS 3.005(c), is preferable because it is completely transparent and does not require a change in the intent or wording of CS-29.1; it preserves the *status quo* – both with respect to offshore operations, and harmonisation with the FAA. (The FAR/JAR solution was not transposed to EASA OPS because the requirement to comply with the Limitations of the RFM was placed in the Basic Regulations rather than in the Implementing Rules.)
The statement in NPA 2014-19:
Suggestion 1:
Change the Basic Regulation to allow deviations from the AFM when applicable.
Even if it is possible to include a paragraph in the Basic Regulation allowing dispensation or alleviation from the AFM limitations, the Agency has decided not to because respecting the airworthiness limitations is an accepted general principle which should be maintained.
By retaining this principle, the Basic Regulation, Annex IV, paragraphs 4.a and 8.b, as quoted in 2.1.3 (a), remains in effect.
In the Agency's view this suggestions cannot be further considered.
cannot go unchallenged. Of course it is possible to make the changes shown below; in fact the solution, proposed in NPA 2014-19, shows less respect for the airworthiness code and the limitations that are represented in CS-29.1 than the current solution with its transparent, specified and limited alleviation backed by risk assessed procedures. The use of semantics to circumvent the intent of CS-29.1 will not provide the clarity that is achieved by the current alleviation; it also introduces a question mark into the world-wide interpretation of Part 29.1, and 29.1517 for States which rely upon the current intent to achieve regulation of operational performance.
A much simpler solution would be to amend the Essential Requirements to permit the well

understood and measured solution that is currently used in FARs and JARs (the *status quo ante*). This could be achieved by using wording currently employed in the Basic Requirement for permitting alleviations; thereby facilitating the smallest change to EASA OPS whilst remaining completely transparent.
Article 8 – Air Operations, paragraphs 2 and 3, already contain precedents for the provision of a solution by having as the introduction to their text the phrase "unless otherwise determined in the implementing rules" – as follows:
2. Unless otherwise determined in the implementing rules, operators engaged in commercial operations shall demonstrate their capability and means of discharging the responsibilities associated with their privileges. These capabilities and means shall be recognised through the issuance of a certificate. The privileges granted to the operator and the scope of the operations shall be specified in the certificate.
3. Unless otherwise determined in the implementing rules, operators engaged in the non-commercial operation of complex motor-powered aircraft shall declare their capability and means of discharging the responsibilities associated with the operation of that aircraft. That same wording should be used to amend Paragraph 4.a
All that is required is for Paragraph 4 'Aircraft performance and operating limitations' - specifically subparagraph 4.a of the essential requirements - to be be amended as follows:
4.a **Unless otherwise determined in the implementing rules**, an aircraft must be operated in accordance with its airworthiness documentation and all related operating procedures and limitations as expressed in its approved flight manual or equivalent documentation as the case may be.
This would then permit the addition of a clause (c) into CAT.POL.H.305 'Operations without an assured safe forced landing capability':
CAT.POL.H.305 Operations without an assured safe forced landing capability

(a) Operations without an assured safe forced landing capability during the take-off and landing phases shall only be conducted if the operator has been granted an approval by the competent authority.
(b) To obtain and maintain such approval the operator shall:
…
(c) Momentary flight through the height velocity (HV) envelope is permitted during the take-off and landing phases.
That would leave only the editorial changes to be made.

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[1] In fact it is a complex situation because the operators are not responsible for providing compliance with CS 29.1583(f) and CS 29.1517 – that rests with the manufacturer. Advising the operator that, if the helicopter is certificated in Category A and Category B and is operated with more than 10 seats, the H-V Diagram Limitation can be ignored appears to be a blatant disregard of the intent of 29.1 as established in NPRM 80-25.

response *Accepted*

Please refer to Chapter 2 'Summary of comments and responses' of this document.

comment *8* comment by: *Jim Lyons*

Attachment #1

For States which have a 'Code of Performance' in compliance with ICAO Annex 6, regulation is achieved with use of the 'Performance Classes' and by controlling limited exposure (outside these classes) with risk assessed procedures. For these States, the retention of the

H-V Diagram as a Limitation in Part 29 is an unnecessary constraint on operations.

Not all States using Part 29 have a 'Code of Performance'; those which do not, depend upon the 'conditioning' clauses of Part 29.1, and retention of the H-V Diagram as a Limitation, to provide (operational) control of performance from within the flight manual. This results in a situation where States rely upon alleviation from the Limitation of the H-V Diagram when operating offshore with more than nine passenger seats.

For helicopters employed in offshore operations, most offshore take-off and landings (regardless of mass) penetrate the (traditionally presented) H-V avoid curve – this represents more than 50% of all take-off and landings ever performed with these helicopters. The probability of an engine failure leading to a catastrophic event for offshore take-off or landing with exposure is about 5×10^{-8} (1:20,000,000) – i.e. for manoeuvres performed outside of a Category A, PC2e or Category B procedure.

In the modern era, all helicopters operating offshore in Europe are certificated in Category A and B – i.e. they all comply with the Category A 'build' standard. Dual qualification permits these helicopters to be employed in 'utility operations' (aerial work) as well as 'passenger transportation' (commercial air transport – offshore and onshore).

All Category A and B procedures (provided in accordance with Subpart B 'Flight' of Part 29) ensure that the helicopter can tolerate an engine failure on take-off or landing: for Category A, by providing profiles that have demonstrated engine-failure accountability; and, for Category B, by providing profiles that remain clear of the H-V avoid curve.

All dual qualified helicopters have a 'capability' (as expressed in the EASA definition of Category A) of using the Category A or Category B procedures; helicopters cannot be 'operated' in Category A or Category B they have to be 'operated' in accordance with the Performance Classes (or with exposure) – i.e. it is the 'Code of Performance' that determines which Performance Class has to be employed. Certification in Category A does not, by itself, mandate the use of the Category A procedures.

The significant intent of the changes to Part 29.1 as a result of NPRM 80-25, was to remove the H-V Diagram as a Limitation for 'utility operations' (aerial work) only and, for simplicity, to bind that to a seating configuration of less than 10. Offshore operations (Commercial Air Transport) cannot be regarded as 'utility operations'; for that reason, more sophisticated methods of regulation need to be employed.

The one inescapable fact that results from Part 29.1 is that unless Category A procedures are mandated, the H-V Diagram is a Limitation when more than nine passengers are carried.

In NPA 2014-19; the proposed amendment to CS-29 – particularly in operations with more than nine passengers – is legally questionable, undermines the logic and intent of Part 29.1, and introduces doubt and unnecessary complication into the certification process. In order to preserve a world-wide harmonised certification code, it should not be undertaken. The introduction of Category B to the Performance Class 2 requirements adds complication to the code under circumstances where the sole intent is to avoid the H-V Limitation (i.e. to circumvent CS 29.1 and CS 29.1517).

In the short term; a much simpler/better method would be to preserve the status quo (in

	Europe and world-wide) by: prepending an enabling clause into Subparagraph 4.a of the essential requirements; and, by adding an alleviating clause into CAT.POL.H.305. The decision not to proceed with this option should be revisited, or justification – acceptable to interested parties - provided. In the long term; there is need for discussions between the Certificating Authorities about the removal of the H-V Diagram as a Limitation from Part 29. A more detailed comment is contained in the attached file 'Response to NPA 2014-19' Jim Lyons
response	*Accepted* Please refer to Chapter 2 ‘Summary of comments and responses’ of this document.

comment	*11* comment by: *EUROCONTROL* The EUROCONTROL Agency does not have comments on NPA 2014-19.
response	*Noted* Please refer to Chapter 2 ‘Summary of comments and responses’ of this document.

comment	*12* comment by: *Luftfahrt-Bundesamt* The LBA has no comments on NPA 2014-19.
response	*Noted* Please refer to Chapter 2 ‘Summary of comments and responses’ of this document.

comment	*26* comment by: *British International Helicopter Services Ltd* British International Helicopter Services Ltd believes that the proposal outlined in NPA 2014-19 is an unnecessarily complex solution for continuation of operation to offshore installations in accordance with Article 8(1) of the Basic Regulation. We believe that a far less complex and more transparent solution would be to provide a controlled exemption from that Basic Regulation as outlined in the UK CAA Official Record Series 4 document No. 1042, published on 20 October 2014. We believe that Suggestion 1 is the correct way forward and that the Agency has been hasty in determining that it cannot be further considered. The declaration that the airworthiness limitations are respected by not choosing this option is basically undermined by the proposed solution of revising CAT.POL.H.300 and CS 29.1 and providing guidance material that changes the intent of CS 29.1. Authorisation to momentarily penetrate the H-V envelope is strictly controlled under the terms of CAT.POL.H.305; its associated clauses ensure that UMS and engine reliability data remain inside acceptable parameters in order to allow such an alleviation to continue.

Approval for this procedure remains in the control of the competent Authority, and the criteria is capable of being revised in the light of any new pertinent information.

Suggestion 1 allows the continuation of a stable system of authorisation that has been in place under JAR-OPS since 1998, and has proved to be a success for the last 16 years. It also preserves a certification code that is harmonised word-wide.

Proposed Text: BIHS recommends the following changes:

a. Amend Regulation (EC) No. 216/2008 (Basic Regulation), Annex IV, paragraph 4.a to read:

Unless otherwise determined in the implementing rules, ~~An~~ ***an*** aircraft must be operated in accordance with its airworthiness documentation and all related operating procedures and limitations as expressed in its approved flight manual or equivalent documentation as the case may be.

b. Amend CAT.POL.H.305 "Operations without an assured safe forced landing capability" by adding new sub-paragraph (c):
(c) Momentary flight through the height velocity (HV) envelope is permitted during the take-off and landing phases.

response

Accepted

Please refer to Chapter 2 'Summary of comments and responses' of this document.

comment

45 comment by: *European Cockpit Association*

ECA acknowledges that the EASA proposals preserve the status quo for current offshore CAT operations and therefore do not adversely affect safety.
ECA supports the aim of mandating Category A performance in future, and recommends that future certification of helicopters shall mandate Category A performance for offshore operations for helicopters of MTOW over 9070kg carrying 10 or more passengers.

response

Noted

Please refer to Chapter 2 'Summary of comments and responses' of this document.

comment

46 comment by: *Robbie DECOSTER*

Page No: N/A

Paragraph No: General Comment

Comment: The subject of the Helicopter Height Velocity limitations is a complex one and liable to misinterpretation and misunderstanding of the helicopter performance requirements necessary under Certification Specifications and Operational rules. The NPA attempts to describe some of these issues but also suffers as a result of them.

Below you can find an attempt to find a simple solution to the problem of allowing the demonstrably safe 'status quo' operating alleviations, as established under JAR-OPS 3.005(c),

to continue especially for operations such as in the offshore environment. The necessity to penetrate the H-V envelope during such operations is essential but only in a controlled and risk assessed manner. This has been and can be achieved through the Operating rules but requires alleviation at the Regulation (EC) No. 216/2008 (Basic Regulation) level due the structure of the regulations. The proposed solution is also in line with the art 14.4's that were written by several NAAs when the Air Operations Regulation entered into force. Attempting to achieve the aim, certainly in the short-term, by amendments to the Certification codes and Advisory material, will cause disharmony and the logic of the arguments provided is questionable. The proposed solution expounded by NPA 2014-19 is not supported.

Justification: Due to the complex nature of the interpretation of the helicopter certification specifications and operating regulations, and in particular the requirements for the application of the H-V limitations, it is essential that a simple and flexible solution that maintains harmonisation with the Federal Aviation Authority be found. This proposed solution does this whilst not complicating or manipulating interpretation of the current specifications and may be utilised for other types of operations (other than CAT) such as Specialised Operations (Part-SPO) in the future. The current operating rules (as amended below) together with the already very comprehensive Guidance Material, support, control and explain the use of 'exposure' in helicopter operations.

Proposed Text:

a. Amend Regulation (EC) No. 216/2008 (Basic Regulation), Annex IV, paragraph 4.a to read:

Unless otherwise determined in the implementing rules, ~~An~~ ***an*** aircraft must be operated in accordance with its airworthiness documentation and all related operating procedures and limitations as expressed in its approved flight manual or equivalent documentation as the case may be.

b. Amend CAT.POL.H.305 "Operations without an assured safe forced landing capability" by adding new sub-paragraph (c):
(c) Momentary flight through the height velocity (HV) envelope is permitted during the take-off and landing phases.

response

Accepted

Please refer to Chapter 2 'Summary of comments and responses' of this document.

comment

49 comment by: *UK CAA*

Page No: N/A

Paragraph No: General Comment

Comment: The UK CAA has considered the context of this NPA at length and had participated in the RMT. The subject of the Helicopter Height Velocity limitations is a complex one and liable to misinterpretation and misunderstanding of the helicopter performance requirements necessary under Certification Specifications and operational rules. The NPA attempts to describe some of these issues but also suffers as a result of

them.

The CAA has conducted discussions with interested parties and with EASA in an attempt to find a simple solution to the problem of allowing the demonstrably safe 'status quo' operating alleviations, as established under JAR-OPS 3.005(c) to continue, especially for operations such as in the offshore environment. The necessity to penetrate the H-V envelope during such operations is essential but only in a controlled and risk assessed manner. This has been and can be achieved through the operating rules but requires alleviation at the Regulation (EC) No. 216/2008 (Basic Regulation) level due to the structure of the new regulations. Attempting to achieve the aim, certainly in the short-term, by amendments to the certification codes and advisory material, will cause disharmony and the logic of the arguments provided is questionable. The proposed solution expounded by NPA 2014-19 is not supported by the UK CAA.

In view of the urgency of achieving an interim solution to allow operations to continue after the coming into effect date of the Air Operations Regulation (Commission Regulation (EU) No. 965/2012) for Commercial Air Transport helicopters of 28 October 2014, the CAA suggested, and got support from EASA, to alleviate against Annex IV, paragraph 4.a of the Basic Regulation. The CAA strongly recommends that this route be followed to amend the Basic Regulation to allow not only the momentary flight though the H-V envelope but by using the right wording to allow more generally other Implementing Rules to alter the application of airworthiness documentation and Flight Manual requirements if required for other reasons. Suitable wording was developed from existing text in Article 8 of the Basic Regulation and used for the Exemption issued by the CAA and accepted by EASA for general Member State use. The proposal below provides this simple solution and complimentary additional text for CAT.POL.H.305.

Justification: Due to the complex nature of the interpretation of the helicopter certification specifications and operating regulations, and in particular the requirements for the application of the H-V limitations, it is essential that a simple and flexible solution that maintains harmonisation with the Federal Aviation Authority be found. This proposed solution does this whilst not complicating or manipulating interpretation of the current specifications and may be utilised for other operations such as Specialised Operations (Part-SPO) in the future. The current operating rules (as amended below) together with the already very comprehensive Guidance Material, support, control and explain the use of 'exposure' in helicopter operations.

Proposed Text: The UK CAA recommends the following changes:

1) Amend Regulation (EC) No. 216/2008 (Basic Regulation), Annex IV, paragraph 4.a to read:

"Unless otherwise determined in the implementing rules, ~~An~~ ***an*** aircraft must be operated in accordance with its airworthiness documentation and all related operating procedures and limitations as expressed in its approved flight manual or equivalent documentation as the case may be."

2) Amend CAT.POL.H.305 "Operations without an assured safe forced landing capability" by adding new sub-paragraph (c):
"(c) Momentary flight through the height velocity (HV) envelope is permitted during the

	take-off and landing phases."
response	*Accepted* Please refer to Chapter 2 'Summary of comments and responses' of this document.

comment	*53* comment by: *DGAC France* DGAC France has no specific comment on this NPA
response	*Noted* Please refer to Chapter 2 'Summary of comments and responses' of this document.

comment	*57* comment by: *Civil Aviation Authority of Norway* CAA-Norway has considered the published NPA and consulted with operators, other CAAs and other interested parties to provide as proper a response as possible to the issue presented. The stated purpose of NPA 2014-19, is to provide alleviation from the H-V Diagram as an Operational Limitation by: • amending CS 29.1; • providing a new AMC 29.1 and AMC 29.1587(b)(6); • amending CAT.POL.H.300; and • providing a new AMC1 CAT.POL.H.300. The proposed solution appears to us to make things even more complex, and relies on circumventing the intended requirement to apply the H-V Diagram as a Limitation when the aircraft is certificated as a Category A rotorcraft, or when there are more than 9 passenger seats to achieve its objective. The fact that results from Part 29.1 is that, unless Category A procedures are mandated, the H-V Diagram is a Limitation when more than nine passengers are carried. As we understand it, the changes proposed in NPA 2014-19 are an attempt to redefine the intent of FAR/CS 29.1 as it was established in NPRM 80-25 – and which addressed the separation of 'utility' operations from 'passenger transportation'. Removal of the H-V Diagram as a Limitation would probably require more than just statements in guidance; the solution contained in NPA 2014-19 seems to represent a substantial challenge to the intent of FAR/CS 29.1 – i.e. the requirement to apply FAR/CS 29.1517 for 'passenger carriage'. This intent was explained/justified, when changes were made to the rule in NPRM 80-25. The current method of alleviation, used in FAR 91.9(d) and the one we had in Appendix 1 to JAR-OPS 3.005(c), is preferable because it is completely transparent and does not require a change in the intent or wording of CS-29.1; it preserves the existing state of affairs both with respect to offshore operations, and harmonisation with the FAA. We understand that the FAR/JAR solution was not transposed to EASA OPS because the requirement to comply with the Limitations of the RFM was placed in the Basic Regulations rather than in the Implementing Rules.
response	*Accepted*

Please refer to Chapter 2 'Summary of comments and responses' of this document.

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comment *13* comment by: *FAA*

This change will create a significant standards difference between the FAA and EASA. Additionally, the changes proposed by this NPA will negate the historical level of safety required of transport category rotorcraft that are utilized for passenger transport.

AC 29-2C, section 29.79 (Amendment 29-21) paragraph a(10) states: "**Rotorcraft certificated prior to Amendment 29-21 were required to have the resulting height-velocity diagram as an operating limitation. This limitation restricted opportunities when operating large rotorcraft in various utility applications. Subsequently, Amendment 29-21 allows, under certain conditions, the height-velocity diagram to be placed in the Flight Manual Performance Information Section instead of the Limitations Section. Specifically, the rotorcraft must be: (1) certificated for a maximum gross weight of 20,000 pounds or less; (2) configured with nine passenger seats or less; and (3) certificated in Category B. Testing must be completed with the aircraft at the maximum gross weight at sea level. For altitudes above sea level, the test aircraft must be at a weight no less than the highest weight the rotorcraft can hover out-of-ground-effect (OGE). Rotorcraft certificated prior to Amendment 29-21 can update their certification basis to take advantage of this provision.**"

This AC wording makes it clear that in the 14 CFR 29.1(b) phrase "... with appropriate and different operating limitations for each category", the appropriate operating limitations (in the case of H-V) is specifically the number of passenger seats. This is contradictory to EASA's interpretation that the wording in 29.1(b) permits rotorcraft over 20,000 pounds and configured with 10 or more passenger seats to also be certificated as Category B (this includes removal of the H-V curve as a limitation).

Additionally, AC29-2C, section 29.45 (amendment 29-24) paragraph b(3)(ii)(C) states: "**Prior to Amendment 29-21, H-V information was an operating limitation. With the adoption of Amendment 29-21, the H-V curve is performance information for Category B rotorcraft with nine or less passenger seats but remains a limitation for Category A rotorcraft and Category B rotorcraft with 10 or more passenger seats.**"

It is clear here that whenever a rotorcraft is configured with 10 or more passenger seats that the H-V curve is a limitation. Prior to amendment 29-21, all transport category rotorcraft were mandated to include the H-V curve as an operating limitation. Amendment 29-21 alleviated the H-V requirements for rotorcraft configured with less than 10 passenger seats. The preamble for amendment 29-21 states "**This revision established a clear relationship between the number of passenger seats and the required performance level for transport category rotorcraft. For cargo configurations and configurations of less than 10 passengers, the rule relaxes requirements in the areas of height-velocity and maximum weight and will result in increased productivity for roles which are special and unique to rotorcraft.**"

Within the supplementary information section of the preamble for amendment 29-21 it states "**All changes in applicability of the rule are contained in revised § 29.1. However, this change influences other portions of the current rule which may be summarized in the**

following three areas:
(1) Transport category rotorcraft certificated with 10 or more passenger seats must comply with the category A design requirements of Subparts C, D, E and F of Part 29 and the category A final segment climb requirement of § 29.67(a)(2),
(2) In Part 29, height-velocity (HV) is removed as an operating limitation for category B rotorcraft with nine or less passenger seats. HV information for these models must be placed in the performance section of the Rotorcraft Flight Manual,
(3) In Part 29, the 20,000-pound weight limit for category B is removed for rotorcraft with less than 10 passenger seats."

Number (3) above was later clarified to require category A design for rotorcraft over 20,000 pounds. The above three references make it clear that the FAA never intended to remove HV as a limitation for rotorcraft configured with 10 or more passenger seats.

In regards to Category B certification of a rotorcraft over 20,000 pounds, AC29-2C, section 29.1 (amendment 29-39) paragraph a.(2) states: "**Category B. Category B rotorcraft may be single or multiengine and may not have a maximum weight greater than 20,000 pounds. Category B rotorcraft are not required to have the capability for continued flight with one engine inoperative.**" This makes it clear that rotorcraft weighing more than 20,000 pounds cannot be certificated purely as Category B.

NPA Paragraph 3.2.3
NPA paragraph 3.2.3 states that the current requirements in CS 29.1 could have been interpreted as that "pure" Category B design standards could only be applied to rotorcraft weighing no more than 20,000 pounds and configured with less than 10 passenger seats. This requirement, which is harmonized with the FAA's 14 CFR 29.1, was not interpreted, but rather intended.

NPA Paragraph 3.2.3
The chart within NPA paragraph 3.2.3 depicts rotorcraft weighing over 20,000 pounds and configured with more than 9 passenger seats can be certificated for Category B operations with some Category A performance requirements ("Category A+B"). Per 14 CFR 29.1(c), the FAA cannot certify Category B performance for helicopters with MGW greater than 20,000 pounds and configured with more than 9 passenger seats. In order for Category B performance to be certificated for this size helicopter, the requirements of FAR 29.1(d) apply - the design is limited to 9 passenger seats. This is captured within the current AC29-2C guidance and the NPRM for amendment 29-21, which introduced Category B performance for rotorcraft weighing over 20,000 pounds and configured with less than 10 passenger seats.

NPA Paragraph 3.2.3
The chart in NPA paragraph 3.2.3 indicates that rotorcraft weighing no more than 20,000 pounds and configured with more than 9 passenger seats can be certificated for Category B operations. This applicability is tied to Note 2, which mandates compliance with CS 29.1(e). The proposed CS 29.1(e) requires, for Category B rotorcraft, compliance with CS 29.1517. CS 29.1517 requires, in part, compliance with the Category A requirements of CS 29.1517. The result is the establishment of H-V as an operational limitation, and it being published as a flight manual limitation as required by CS 29.1583(f).

response *Noted*

Please refer to Chapter 2 'Summary of comments and responses' of this document.

comment	*27* comment by: *Bernardino Paggi* The large aircraft/transport category H-V regulation is clearly out of date specifically considering multi-engine aircrafts. It is clear that an H-V envelope must be established for Cat A operations and this is an inherent limitations included in the Cat A procedures and WATs. On the other hand, for Cat B operations of multiengine aircrafts, an H-V envelope cannot be considered as a limitation without restricting helicopter operations to the only test demonstrated sites.
response	*Noted* Please refer to Chapter 2 'Summary of comments and responses' of this document.

2. Explanatory Note p. 5-6

comment	*22* comment by: *Giorgio Vismara* Page5, 2.1.1, line 8 and subsequents. The fact that some AFM give the pilot the capability to determine whether the HV exists for a given weight and ambient conditions (pressure altitude and outside temperature) is a key element. Computing (and presenting in the AFM) the HV with such details requires a huge quantity of dangerous (OEI landings) and expensive flight testing. The typical 3 HV points, HIGE/HOGE/knee shall be established at least at three different altitude, sea level, mid alt, max alt and at two range of temperatures. In addition for the various ambient conditions the weight for which the HV does not exists shall be defined and, for the weights for which HV exists, the variation of the three points, HIGE,HOGE,Knee shall be established as a function of the weight. Therefore downgrading the HV from limitation to performance information and allowing those manufacturers that elected to present in the AFM only the worst case of the HV to operate at weights that require to infringe the HV, is unfair.The HV must remain a limitation and those manufacturers which present in the AFM a grossly defined HV, must be forced to properly define the HV in order to allow the pilot to establish the weight that keep the helicopter clear from the HV.
response	*Noted* Please refer to Chapter 2 'Summary of comments and responses' of this document.

comment	*28* comment by: *Bernardino Paggi* *NPA quote:* ***2.1.1. What is the Height-Velocity envelope?*** *Introduction* *The Height-Velocity (H-V) envelope is best described as a graphical combination of all pressure altitudes and temperatures for which take-off and landing are approved, and for weights from the maximum at sea-level to the maximum for hover out of ground effect and for forward velocity, including hover, under which a safe landing cannot be made following*

an engine failure.
The correct definition of the H-V envelope included in the AC29 does not quote "graphical combinations" but only mentions envelope:
AC29
*It defines an **envelope** of airspeed and height above the ground from which a safe power-off or OEI landing cannot be made.*
It is also fundamental defining the type of surface for which the H-V envelope has been demonstrated that automatically restricts the applicability of the H-V limitations to this type. This concept is not adequately highlighted in RFMs and operational rules but it is of a paramount importance to understand that any other type of surface would not comply with the required safety rejected demonstration and could imply an unsafe situation.

The definition of an H-V envelope must also consider the test conditions that usually take into account only runways surface as reported by:
AC29
(9) Flight Manual. The flight manual should list any procedures which may apply to specific points (e.g., high speed points) and test conditions, such as runway surface, wave height for amphibious tests, marginal areas of controllability or landing gear response, etc. The HV curve should be presented in the RFM using actual altitude above ground level and indicated airspeed.

Definition and certification demonstration of an H-V envelope assumes that there is a practical way to demonstrate it. This way is clearly described in the AC29-3C and this is the method that is used to demonstrate that a safe reject up to 50 ft alongside the takeoff profile is possible, that is the aim of the H-V envelope for Cat B takeoff and landings.
A typical RFM statement on the H-V limitations is:
The Height-Velocity envelope defines, in the event of a single engine failure during take-off, landing or other operation near the surface, a combination of airspeed and height above ground from which a safe single engine landing on a smooth, level and hard surface cannot be assured.
The H-V envelope is therefore only applicable to the type of surface used to demonstrate it because it would be unsafe to consider it applicable to all possible surfaces where either the envelope has not been demonstrated or it would create a catastrophic situation.

If this certified envelope would be applied to helideck operations, this would provide the UNSAFE and NOT TRUE statement that operations well clear of the H-V limitation would be safe.
This is the reason why in all RFMs the type of surface where the H-V envelope has been demonstrated, must be declared.

Based on these assumptions and considering AC29-2C, it is clear that the H-V envelope, other than being a clear limitation for Cat A operations, it is only applicable to Cat B operations that are carried out in accordance with the applicable RFM take-off and landing surface limitations. Since all certified part 29 helicopters usually quote just one kind of surface (runway type), the H-V envelope, if strictly enforced, would mandate Cat B operations only from runway type surfaces (or the type quoted in the RFM). This clearly not the case of the real world and hence this is a clear situation where an out-of date regulation is daily disregarded without impacting on general safety.

Consequently, any consideration of non-respecting the H-V limitations when operating from

	helipads, is out of context since even considering take-off and landing profiles, that would respect the H-V limitations, would not prevent the aircraft to either crash on the helideck or ditch into the sea, this because the demonstration of the H-V envelope for Cat B operations does not take into account helideck surfaces. The only procedures that would assure no infringement of the H-V envelope are the Cat A procedures specifically developed for helideck operations. The aforesaid considerations support the proposal to move H-V envelope for Cat B operations to the RFM performance information regardless of the number of seats and remove any concern of operational limitations from helidecks due to Cat B H-V envelope for PC2 operations since the Cat B H-V envelope does not apply to this type of take-off and landing surfaces.
response	*Noted* Please refer to Chapter 2 'Summary of comments and responses' of this document.

comment	*29* comment by: *Bernardino Paggi* *NPA quote:* ***Certification specifications for large rotorcraft (CS-29)*** *For large helicopters, certified to Category A, the H-V envelope is an AFM limitation according to CS-29. Hence, operations cannot be performed with planned masses resulting in an entry into the H-V envelope. In general terms, PC2 take-off and landing operations at confined areas (offshore helideck, etc.) will encounter operational limitations ranging from small to extremely limiting.* PC2 operations are not linked to H-V limitations of any sort and furthermore, there are no H-V envelopes applicable to helideck sites because H-V applies only to ground operations, where a reject either alongside the take-off corridor or from a high hover can be accomplished, that are not the case of an helideck site.
response	*Noted* Please refer to Chapter 2 'Summary of comments and responses' of this document.

comment	*30* comment by: *Bernardino Paggi* *NPA quote:* *PC2 operations with an approval to operate without an assured safe forced landing capability are affected. In addition, all operators are prevented from utilising helicopters with more than nine passenger seats for Category B operations.* Cat B operations are not reflected in the operational rules nor aircrafts with more than nine passenger seats.
response	*Noted* Please refer to Chapter 2 'Summary of comments and responses' of this document.

comment	*31* comment by: *Bernardino Paggi* *NPA quote:* ***2.1.2. Performance class 2 operations*** *Helicopter take-offs and landings, especially at offshore installations but also in hostile*

	environment outside a congested area and at public interest sites, have been conducted with masses infringing the height-velocity (H-V) envelope. This statement is not true, helideck operations can only be carried out either with Cat A procedures or with procedures that imply exposure. H-V envelope in the "traditional shape" cannot be demonstrated on helideck, only vertical rejects can be accomplished and a take-off profile can only be protected by a possible engine failure by using Cat A procedure style
response	*Noted* Please refer to Chapter 2 'Summary of comments and responses' of this document.

comment	*32* comment by: *Bernardino Paggi* *NPA quote:* *JAA also introduced a Category A certification requirement for helicopters operating according to PC2 (JAR-OPS 3.5155). Helicopters certified under CS-29 or the related previous airworthiness codes are required to include the HV-envelope in the aircraft flight manual (AFM) limitation section. The H-V envelope thereby became an operational AFM limitation for large helicopters.* The H-V is an inherent limitation of the Cat A procedures and does not need to be published when operating in Cat A (AC29 …..*However, many Category A approvals have not required an actual HV diagram to be included in the RFM for Category A operations. The Category A takeoff and landing profiles are developed so that a continued takeoff, go-around, or safe landing can be accomplished following failure of the critical engine at any point in the profile. Development of the Category A profiles is very similar to HV testing*). The H-V limitation, defined for the type of surface developed for the Cat A procedures, is included in the Cat A procedures/limitations.
response	*Noted* Please refer to Chapter 2 'Summary of comments and responses' of this document.

2. Explanatory Note - 2.1.3.Assessing the regulatory domains p. 7-10

comment	*20* comment by: *Giorgio Vismara* Page 9,2.1.5, line 9 and subsequents. This sentence is not in the spirit of the Safety Management System because it is not proactive. When an engine failure will occur before DPATO or after DPBL inside the HV envelope,the accident will be catastrophic. For this reason operations inside the HV must be prohibited. Manufacturers must be forced to define realistically the HV so that the pilot can establish the weight that will allow to stay outside the HV.
response	*Noted* Please refer to Chapter 2 'Summary of comments and responses' of this document.

comment	*21* comment by: *Giorgio Vismara* Page 10, 2.1.5, Line 1 and subsequents.

	This is true only if the HV envelope has been defined in a conservative way. If the HV has been carefully calculated, in the ambient conditions of the North Sea, i.e sea level and low/moderate temperature, it will be possible to operate at maximum certified weight without penetrating the HV. In addition is worth to note that, in force of CAT.POL.H.310/325(c)(2), deck edge miss and dropdown procedures, most large helicopters must, anyway, reduce the Landing and Take off weight for operations on helidecks. Therefore manufacturers must be forced to define in a realistic way the HV instead of giving the alleviation to penetrate the HV.
response	*Noted* Please refer to Chapter 2 'Summary of comments and responses' of this document.

comment	*23* comment by: *Giorgio Vismara* Page 10, 2.1.6, line 3 and subsequents. This is not true. If the HV has been properly and realistically defined probably most operations can be conducted at max weight without penetrating the HV. Manufacturers must be forced to carefully define the HV.
response	*Noted* Please refer to Chapter 2 'Summary of comments and responses' of this document.

comment	*33* comment by: *Bernardino Paggi* *NPA quote:* *(a) Basic Regulation* *Annex IV, paragraph 4.a establishes the following:* *'An aircraft must be operated in accordance with its airworthiness documentation and all related operating procedures and limitations as expressed in its approved flight manual or equivalent documentation, as the case may be. The flight manual or equivalent documentation must be available to the crew and kept up to date for each aircraft.'* *This is the introduction paragraph to PC2 operations:* *'Helicopters operated in performance class 2 shall be certified in Category A or equivalent as determined by the Agency.'* *The regulatory statement incorporates the H-V envelope as an operational limitation through the Category A certification.* *This, however, contradicts definitions in Annex I to Regulation (EU) No 965/2012 and to the PC2 related paragraphs CAT.POL.H.315 'Take-off flight path' and* *CAT.POL.H.325 'Landing'.* *NPA quote:* ***2.1.5. Safety risk assessment*** *The Agency is aware of one offshore accident12 caused by an engine failure during PC2 take-off before DPATO. In addition, two onshore accidents caused by power loss are known13 and involved large helicopters performing HEMS and CAT operations. These presumably occurred prior to DPATO and subsequent to DPBL, however, this cannot be substantiated. There is also uncertainty as to whether or not the helicopters were inside the H-V envelope, and as to which operational regulations the flights were conducted.*

The overall majority of accidents during PC2 operations have happened after DPATO and prior to DPBL. This is in the flight regime where sustained flight is available following an engine failure, and it is not associated with H-V envelope penetration.
Accident statistics or trends are, therefore, not indicating that PC2 operations approved without an assured safe forced landing capability should be planned with masses under which the H-V envelope is not penetrated.

Avoiding the H-V envelope requires reduction of landing or take-off masses for some helicopters types whilst others are prevented from operating.

This is not related to offshore operations where the traditional H-V envelope included in the RFM is not applicable. Any mass reduction with respect to the published H-V envelope would not assure survivability in case of an engine failure during take-off and landings because not related to the site of the H-V tested.

This is not a contradiction since the requirement for certification in Category A does not implies that in PC2 the helicopter must be operated in accordance with the Cat A procedures and WATs. This is only the case of PC1 operations and where H-V is an actual limitation incorporated in the Cat A procedures.

response *Noted*

Please refer to Chapter 2 'Summary of comments and responses' of this document.

2. Explanatory Note - 2.2. Objectives p. 10-15

comment *24* comment by: *Giorgio Vismara*

Page 13, Option N° 1.
Option 1 perfectly matches the current illegal certification of the Airbus Helicopters model EC225.
In fact the TCDS of this model (with a maximum weight 11000 Kg and 25 passenger seats) states that the helicopter is certified as large helicopter in Cat A and B. But for Cat B operations there are no weight or passenger seats limitation while, in accordance with CS29.1(c) this helicopter (11000Kg, 25 passenger seats) should have been certified Cat A only or, for Cat B operations, the weight should have been limited to less than 9072 Kg or the passenger seats below 9.
For example in the TCDS of Sikorsky S92 (Max weight 12020 Kg and 19 passenger seats) is stated that the helicopter is certified as large helicopter in Cat A and B but 19 passengers require Cat A operations while for Cat B the maximum passengers seats are limited, correctly, to 9 passengers.
Therefore the adoption of this assumption is unfair because allow all the models to operate in the same way (Cat B and HV as performance information) both those who do not infringe the HV, because the HV has been properly calculated, and those that had grossly defined the HV.
Manufacturers who only present in the AFM a conservative definition og the HV must be forced to define the HV envelope in a way that allows the pilot to select a mass that keeps the helicopter outside the HV envelope during Landing and Take-off.

response *Noted*

	Please refer to Chapter 2 'Summary of comments and responses' of this document.

comment	*35* comment by: *Bernardino Paggi* *NPA quote:* ***2.3. Policy options*** *Suggestion 3:* *Change CS-29 to move the H-V envelope from the limitations section to the performance section in the AFM.* *Moving the H-V envelope from limitations to performance criteria goes against the Category A certification philosophy and would be a non-trivial change. Furthermore, changing CS-29 in such a way would create a substantial difference with the similar FAA certification requirements, and may impact on type-validation and acceptance by foreign authorities.* *It should also be noted that to obtain the expected effect of the suggestion,* *Category A take-off and landing weights would also need to be required transposed from limitations to performance criteria. This would go against the regulatory desire and trend towards encouraging more powerful helicopters with full Category A engine failure accountability.* *In the Agency's view this suggestions cannot be further considered.* Moving H-V envelope from limitations to performance section would not go against Category A certification philosophy and would not be a non-trivial change since the H-V envelope included in the Cat B limitations section applies only to Cat B take-off and landing profiles and for the stated type of surface. Category A H-V limitations are included in the take-off and landing procedures and WATs and are strictly connected to the type and kind of site at which the Category A procedures are referred to.
response	*Noted* Please refer to Chapter 2 'Summary of comments and responses' of this document.

comment	*36* comment by: *Bernardino Paggi* *NPA quote:* *Suggestion 4:* *Change CS-29 to allow category B operations with the H-V envelope as performance information.* *This is already current certification practice where a large rotorcraft is certified as both Category A and B.* *The suggestion is accepted as an option by the Agency for further impact analysis.* This proposal is acceptable regardless of the content of this NPA and has already been applied to the AW189 certification where the H-V envelope is performance information. *NPA quote:* *The AMC will clarify that for helicopters certified to both Category A and Category B the H-V envelope is a limitation only when operating according to Category A, and is performance information when operating according to Category B. This fulfils the objective defined for the RMT.*

	The AW189 has been certified with the H-V envelope as performance information. This applies to Cat B take-off and landing procedures that are not applicable to helideck operations.
response	*Noted* Please refer to Chapter 2 'Summary of comments and responses' of this document.

comment	*39* comment by: *Giorgio Vismara* 2.4.1. Safety impacts Page 14 first line and subsequents. In accordance with **CAT.POL.H.310(c)(2) Take-off and CAT.POL.H.325(c)(2)**the helicopter mass should probably be reduced to allow the deck hedge miss and drop down procedures. Therefore if a mass reduction is considered not feasible then also CAT.POL.H.310 and 325 must be amended and the deck edge miss and drop down procedures (the so called PC2 enhanced) deleted.
response	*Noted* Please refer to Chapter 2 'Summary of comments and responses' of this document.

comment	*40* comment by: *Giorgio Vismara* Page 14 2.4.3 Social Impact Option 0 Line 1. See comment n°39
response	*Noted* Please refer to Chapter 2 'Summary of comments and responses' of this document.

comment	*41* comment by: *Giorgio Vismara* 2.4.4. Economic impact Option 0 Line 1 and subsequents See Comment 39. In any case it is worth to consider that safety has a cost but this cost is largely compensated, also from an economic standpoint, if an accident can be avoided and a life/s saved.
response	*Noted* Please refer to Chapter 2 'Summary of comments and responses' of this document.

comment	*42* comment by: *Giorgio Vismara* 2.5.1. Comparison. Line 1. This comment is false. Improving the safety cannot be considered a negative and unwanted effects. In any case a mass reduction is normally required to satisfy CAT.POL.H.310 & 325(c)(2)

	See comment 39.
response	*Noted* Please refer to Chapter 2 'Summary of comments and responses' of this document.

comment	*55* comment by: *Civil Aviation Authority of Norway* Comment to: *Suggestion 1:* *Change the Basic Regulation to allow deviations from the AFM when applicable.* *Even if it is possible to include a paragraph in the Basic Regulation allowing dispensation or alleviation from the AFM limitations, the Agency has decided not to because respecting the airworthiness limitations is an accepted general principle which should be maintained.* *By retaining this principle, the Basic Regulation, Annex IV, paragraphs 4.a and 8.b, as quoted in 2.1.3 (a), remains in effect.* *In the Agency's view this suggestions cannot be further considered.* We cannot see that it is not possible to make the changes we propose; in fact some would say the solution proposed in NPA 2014-19 shows less respect for the airworthiness code and the limitations that are represented in CS-29.1 than our suggestion (and the JAR-OPS solution) with its transparent, specified and limited alleviation backed by risk assessed procedures, as required by CAT.POL.H.305. To "play with words" to circumvent the intent of CS-29.1 will not provide the clarity that is achieved by the alleviation we propose. It may also introduce a question mark into the world-wide interpretation of FAR/CS 29.1, and 29.1517 for States that rely upon the current intent to achieve regulation of operational performance.
response	*Accepted* Please refer to Chapter 2 'Summary of comments and responses' of this document.

2. Explanatory Note - 2.5. Comparison and conclusion - 2.5.2.Conclusion p. 15

comment	*2* comment by: *Jan Loncke* typo in paragraph 2.5.2. The sentence should probably read : "Option N° 1 fulfils the RMT objectives ~~are~~ and is therefore the preferred option."
response	*Noted* Please refer to Chapter 2 'Summary of comments and responses' of this document.

comment	*10* comment by: *Jim Lyons* **Conclusions** The purpose of NPA 2014-19, is to provide alleviation from the H-V Diagram as an Operational Limitation by: amending CS 29.1; providing a new AMC 29.1 and AMC 29.1587(b)(6); amending CAT.POL.H.300; and providing new AMC1 CAT.POL.H.300. The proposed solution is complex, and relies for achievement of its objective in circumventing

the intended requirement to apply the H-V Diagram as a Limitation when the aircraft is certificated as a Category A rotorcraft, or when there are more than 9 passenger seats.

One inescapable fact that results from Part 29.1 is that, unless Category A procedures are mandated, the H-V Diagram is a Limitation when more than nine passengers are carried. In effect the changes proposed in NPA 2014-19 are an attempt to redefine the intent of CS 29.1 as established in NPRM 80-25 – which addressed the separation of 'utility' operations from 'passenger transportation'.

Removal of the H-V Diagram as a Limitation requires more than just statements in guidance; the solution contained in NPA 2014-19 represents a substantial challenge to the intent of CS 29.1 – i.e. the requirement to apply CS 29.1517 for 'passenger carriage'. This intent was explained/justified, when changes were made to the rule in NPRM 80-25. The proposed change to the intended function of 29.1 is unlikely to go unquestioned as it represents a breach in harmonisation under circumstances where regulation of performance in some States, depends upon the intended application of the rule.

The current method of alleviation, used in FAR 91.9(d) and Appendix 1 to JAR-OPS 3.005(c), is preferable because it is completely transparent and does not require a change in the intent or wording of CS-29.1; it preserves the *status quo* – both with respect to offshore operations, and harmonisation with the FAA. (The FAR/JAR solution was not transposed to EASA OPS because the requirement to comply with the Limitations of the RFM was placed in the Basic Regulations rather than in the Implementing Rules.)

The statement in NPA 2014-19:

"Suggestion 1:

Change the Basic Regulation to allow deviations from the AFM when applicable.

Even if it is possible to include a paragraph in the Basic Regulation allowing dispensation or alleviation from the AFM limitations, the Agency has decided not to because respecting the airworthiness limitations is an accepted general principle which should be maintained.

By retaining this principle, the Basic Regulation, Annex IV, paragraphs 4.a and 8.b, as quoted in 2.1.3 (a), remains in effect.

In the Agency's view this suggestions cannot be further considered."

cannot go unchallenged. Of course it is possible to make the changes shown below; in fact the solution, proposed in NPA 2014-19, shows less respect for the airworthiness code and the limitations that are represented in CS-29.1 than the current solution with its transparent, specified and limited alleviation - backed by risk assessed procedures. The use of semantics to circumvent the intent of CS-29.1 will not provide the clarity that is achieved by the current alleviation; it also introduces a question mark into the world-wide interpretation of Part 29.1, and 29.1517 for States that rely upon the current intent to achieve regulation of operational performance.

A much simpler solution would be to amend the Essential Requirements to permit the well understood and measured solution that is currently used in FARs and JARs (the *status quo*

ante). This could be achieved by using wording currently employed in the Basic Requirement for permitting alleviations for other reasons; thereby facilitating the smallest change to EASA OPS without introducing a precedent, whilst retaining transparency.

Article 8 – Air Operations, paragraphs 2 and 3, already contain a precedent for the provision of a solution by having as the introduction to their text the phrase "unless otherwise determined in the implementing rules" – as follows:

"*2. Unless otherwise determined in the implementing rules, operators engaged in commercial operations shall demonstrate their capability and means of discharging the responsibilities associated with their privileges. These capabilities and means shall be recognised through the issuance of a certificate. The privileges granted to the operator and the scope of the operations shall be specified in the certificate.*"

"3 Unless otherwise determined in the implementing rules, operators engaged in the non-commercial operation of complex motor-powered aircraft shall declare their capability and means of discharging the responsibilities associated with the operation of that aircraft.

That same wording could be used to amend Paragraph 4.a

Proposal:

Paragraph 4 'Aircraft performance and operating limitations' - specifically subparagraph 4.a of the essential requirements - should be amended as follows:"

"4.a **Unless otherwise determined in the implementing rules**, an aircraft must be operated in accordance with its airworthiness documentation and all related operating procedures and limitations as expressed in its approved flight manual or equivalent documentation as the case may be."

This would then permit the addition of a clause (c) into CAT.POL.H.305 'Operations without an assured safe forced landing capability':

"CAT.POL.H.305 Operations without an assured safe forced landing capability

(a) Operations without an assured safe forced landing capability during the take-off and landing phases shall only be conducted if the operator has been granted an approval by the competent authority.
(b) To obtain and maintain such approval the operator shall:
…
(c) Momentary flight through the height velocity (HV) envelope is permitted during the take-off and landing phases."

That would leave only the editorial changes to be made.

(More detailed comments can be found in the attached "Response to NPA 2014-19".)

response *Accepted*

Please refer to Chapter 2 'Summary of comments and responses' of this document.

comment	*37* comment by: *Bernardino Paggi*

Conclusions
It is AW opinion that this NPA has no reason to exist since PC2 operational requirements are not connected to either H-V envelope or Cat B procedures.
For this reason it is recommended to revise at the earliest the following part of the ***AMC/GM TO ANNEX IV (PART-CAT) :***
(i) Operations to elevated FATOs or helidecks
PC2 operations to elevated FATOs and helidecks are a specific case of operations with exposure. In these operations, the alleviation covers the possibility of:
(A) a deck-edge strike if the engine fails early in the take-off or late in the landing;
(B) penetration into the HV Curve during take-off and landing; and
(C) forced landing with obstacles on the surface (hostile water conditions) below the elevated FATO (helideck). The take-of mass is as stated above and relevant techniques are as described in GM1 CAT.POL.H.310(c) & CAT.POL.H.325(c).
The assumptions made upon intrusions into H-V envelope when taking off and landing from helidecks are inappropriate since there is no way to determine an applicable H-V envelope for operations from helideck other than the inherited H-V limitations included into Cat A operations that are the only possible procedures for a safe profile on these sites.
This sentence MUST be removed since it provides the false statement that operations from helidecks that do not imply H-V Curve penetrations during takeoff and landings are safe, that is WRONG.
H-V envelope is only applicable for Cat B operations that are carried out from the kind of surfaces where the H-V envelope has been established and published in the RFM and following the published procedures.
It is recommended to consider moving the H-V envelope from limitations to performance regardless of the number of passenger seats provided the published RFM take-off and landing procedures are verified to be free of H-V in the take-off corridor for the included WATs and the performance information would include dedicated WATs charts for safe Fly-Away escapes from hover out-of-ground for the following reasons:
· The traditional H-V envelope does not provide enough information for safe operations over any kind of surface but only from the tested one.
· Category B take-off and landing RFM procedures must meet the certification requirements to be free from H-V.
H-V envelope cannot be assessed from any kind of surface where the helicopter can operate.
· It's always safer to provide the pilot with performance and procedures that can be accomplished rather than publish NON-Flying areas without providing safe and achievable escapes procedures.
· To encourage PC2 with no exposure or PC1 operations from helidecks, those are the safer way considering the type of environment.

response	*Noted* Please refer to Chapter 2 'Summary of comments and responses' of this document.

2. Explanatory Note - 2.5. Comparison and conclusion - 2.5.3.The way forward p. 15-17

comment	*3* comment by: *Jan Loncke* typo in paragraph 2.6, 2nd bullet : to replace "Availability" by "Applicability";

	it should read : "CS 29.1 ~~Availability~~ Applicability; and" the same goes for the title of § 2.6.2
response	*Noted* Please refer to Chapter 2 'Summary of comments and responses' of this document.

comment	*4* comment by: *Jan Loncke* In relation to the last sentence in § 2.6.4, I'd like to bring to attention that the abbreviation AEO is also mentioned in GM2 Annex I Definitions (ED 2013/017/R). I suggest to add in "3. Proposed amendmendts" a paragraph 3.2.5 in order to amend GM2 Annex I Definitions as follows : AEO all engines operating ~~operative~~.
response	*Noted* Please refer to Chapter 2 'Summary of comments and responses' of this document.

comment	*9* comment by: *Jim Lyons* **<u>The Nexus between the Certification and Operational Codes</u>** It is axiomatic that operations should not be regulated from within a certification code; operations are dynamic and have to adapt to changing demands, whilst a certification code is (and has to be) somewhat static. The seat of the 'H-V Limitation' issue results from a situation where some States have not provided a 'Code of Performance' in compliance with ICAO Annex 6, Part III, Chapter 3.1.1: "*3.1.1 Helicopters shall be operated in accordance with a 'Code of Performance' established by the State of the Operator, in compliance with the applicable Standards of this chapter.*" Hence, undue reliance has had to be placed upon limitations within the certification code to constrain operations; for obvious reasons, this method results in a coarse device with a singular granularity which has required alleviation for offshore operations. Using a 'Code of Performance' permits a much finer granularity with risk assessment at its core. The absence of a 'Code of Performance' results in a situation where operations are (erroneously) described (by airworthiness personnel) in certification terms. The implied logic of NPA 2014-19 is that operations are performed either using the Category A or Category B procedures when the fact is that helicopters are certificated in Category A and/or Category B and are operated in Performance Classes 1, 2 or 3. *Note 1: Following the logic and intent of NPRM 80-25, the phrase 'Category A operations' in the AC 29-2C guidance is intended to refer to 'passenger transportation' rather than 'utility' operations (aerial work).* *Note 2: If compliance with Category B procedures was required, then the fulfilment of CS 29.63 would require a defined take-off surface over which a landing can be made safely at any point along the flight path if an engine fails (not exactly in line with an offshore take-off).*

Provision of procedures in accordance with Category A or Category B provides a capability (the term used in the definition of Category A) which can be employed in operations. The requirements for operation in the appropriate Performance Class is described in the 'Code of Performance'; that there is no direct correlation between the certification Categories and Performance Classes is of little importance. Thus, Performance Class 2 provides the flexibility that is required, for operations other than from airports, with a Category A mass, without the constraints of a Category A procedure, but with appropriate levels of safety set in accordance with the risk profile of the operation.

It would be much better if the H-V Diagram Limitation was removed. However, it is necessary to recognise that a situation exists where some (important) States, in the absence of a 'Code of Performance', require the certification code to contain operational restrictions. In the short term, a harmonised certification basis is more important that the fact that a directed alleviation from the Flight Manual Limitations has to be provided.

What is essential, is that airworthiness and operations personnel understand the nexus between certification and operations and share a single view of how they interact. What can be seen from the narrative of NPA 2014-19 is that more time needs to be set aside so that all personnel can read into and understand the underlying philosophy and concepts of the 'Code of Performance'. Misconceptions enshrined in the NPA such as "Flight regimes subsequent to DPBL and prior to DPATO are therefore not within the scope of Category A according the definitions of Annex 1" have to be corrected.

Specifically, it must be made clear that "capable of operations using take-off and landing data…" does not result in an imperative to use such data – only the limitations have to be observed! The ICAO/JAA/EASA definition of Category A differs from the FAA version - which contains the words "utilizing scheduled takeoff and landing operations...", a difference in the ICAO/JAA/EASA definition that was deliberately introduced at the time when the Performance Classes were being defined and incorporated into ICAO Annexes 6, 8 and 14 by the Heliops Panel.

The confusion of the NPA is exemplified in Paragraph 2.6.3. CS 29.1587 Performance Information:

"*A change to the paragraph itself is not proposed, but an AMC to sub-paragraph (b)(6) is included. The AMC will clarify that for helicopters certified to both Category A and Category B the H-V envelope is a limitation only when operating according to Category A, and is performance information when operating according to Category B. This fulfils the objective defined for the RMT.*"

In a single paragraph we have the nub of the problem; the text implies that 'when operating according to Category A' means using the Category A procedures. As has been shown above, Category A provides a capability that may be used in support of a Performance Class – it is not an imperative. This is confirmed by the last paragraphs of AC 29.1583(b)(8)(i) which states that the H-V Diagram can only be omitted from the Limitations Section if the Category A procedures are mandated:
"*Therefore, if the Category A takeoff and landing profiles, procedures, and WAT limitations are adequately and clearly defined in the RFM, this information is considered sufficient for compliance with the requirements of § 29.1583(f) without the inclusion of an actual HV diagram. The Category A procedures and profile definitions may be presented in the normal*

	*procedures or performance sections of the RFM but should be referenced as being **mandatory requirements** in the limitations section **unless** an HV diagram valid for Category A operations is presented.*" There can be no misunderstanding of the intent of this passage; unless the Category A procedures are mandated, an H-V Diagram is required in the Limitations section. Ipso facto, if the H-V Diagram is in the Limitations section, the Category A procedures are not mandated (unless so specified in the Operational Regulations). (More detailed comment can be found in the attached 'Response to NPA 2014-19'.)
response	*Noted* Please refer to Chapter 2 'Summary of comments and responses' of this document.

comment	*38* comment by: *Bernardino Paggi* Attachment #2 *NPA quote:* *2.6.3. CS 29.1587 Performance information* *A change to the paragraph itself is not proposed, but an AMC to sub-paragraph (b)(6) is included. The AMC will clarify that for helicopters certified to both Category A and Category B the H-V envelope is a limitation only when operating according to Category A, and is performance information when operating according to Category B. This fulfils the objective defined for the RMT.* This is not applicable, H-V envelope is only related to Cat B take-off and landing procedures that are not applicable to helideck operations.
response	*Noted* Please refer to Chapter 2 'Summary of comments and responses' of this document.

comment	*44* comment by: *Giorgio Vismara* 2.6.2.CS 29.1/1587 Page 16 These two changes at CS29 will introduce differences between FAA and EASA. The FAA will hardly accept them in FAR 29, and, therefore, differences will be created between american and european design codes.
response	*Noted* Please refer to Chapter 2 'Summary of comments and responses' of this document.

3. Proposed amendments p. 18-20

comment	*1* comment by: *Federal Office of Civil Aviation FOCA* FOCA would like to make the following modification/proposal (marked in red) to the draft

	text to AMC1 CAT.POL.H.300 General: a) UTILISING CATEGORY B LIMITATIONS Within the area defined in CAT.POL.H.300(c), Category B limitations may only apply if: (1) **compliance with Category A procedure and/or Category A limitation is** impractical and the authorised take-off weight and landing masses would penetrate the height-velocity envelope during a performance class 2 take-off or landing; and/or (2) the available take-off and landing area (FATO) would not allow a safe forced landing following a failure of the critical engine. Justification: Performance Class 2 operations also include the ability to use existing CAT A profiles and distances when the surface conditions are not adequate for a reject but are suitable for a safe forced landing (or not assured, when the exposure is approved). Therefore the text "a Category A procedure is impractical (...)" of (1) (a) to draft regulation AMC1 CAT.POL.H.300 could lead to confusion, when the reason for the impracticability to operate within CAT A limitations is the weight.
response	*Noted* Please refer to Chapter 2 'Summary of comments and responses' of this document.

comment	*5* comment by: *Jan Loncke* typo in § 3.1.3 CAT.POL.H.325 Landing : to replace "take-off" by "landing". § 3.1.3 CAT.POL.H.325 Landing should read : 3.1.3 CAT.POL.H.325 Landing (...) (c) For operations ... (1) the landing ~~take-off~~ mass shall not exceed the maximum mass specified ...
response	*Noted* Please refer to Chapter 2 'Summary of comments and responses' of this document.

comment	*43* comment by: *Giorgio Vismara* 3.1.2.CAT.POL.H.310/325(2)(c) Page 18 These two requirements for take-off and landing from helideck will require a mass reduction with respect to the maximum certified mass. Therefore all the considerations developed in the previous pages on the negative impact, operational, economic, social and environmental, induced by a mass reduction will be cancelled.
response	*Noted* Please refer to Chapter 2 'Summary of comments and responses' of this document.

comment	*47* comment by: *new European Helicopter Association (EHA)* Attachment #3

After significant consultation with all EHA affected members including consultation with OEMs, EHA does not agree with the NPA and would like to recommend changes as explained in the text here below and substantiated in the attached file:

For States which have a 'Code of Performance' in compliance with ICAO Annex 6, regulation is achieved with use of the 'Performance Classes' and by controlling limited exposure (outside these classes) with risk assessed procedures. For these States, the retention of the H-V Diagram as a Limitation in Part 29 is an unnecessary constraint on operations.
Not all States using Part 29 have a 'Code of Performance'; those which do not, depend upon the 'conditioning' clauses of Part 29.1, and retention of the H-V Diagram as a Limitation, to provide (operational) control of performance from within the flight manual. This results in a situation where all States have to rely upon alleviation from the Limitation of the H-V Diagram when operating offshore with more than nine passenger seats.
The significant intent of the changes to Part 29.1 as a result of NPRM 80-25, was to remove the H-V Diagram as a Limitation for 'utility operations' (aerial work) only and, for simplicity, to bind that to a seating configuration of less than 10. Offshore operations (Commercial Air Transport) cannot be regarded as 'utility operations'.
The one inescapable fact that results from Part 29.1 is that unless Category A procedures are mandated, the H-V Diagram is a Limitation when more than nine passengers are carried.
In NPA 2014-19; the proposed amendment to CS-29 – particularly in operations with more than nine passengers – undermines the logic and intent of Part 29.1 and introduces doubt and unnecessary complication into the certification process. In order to preserve a world-wide harmonised certification code, it should not be undertaken. The introduction of Category B to the Performance Class 2 requirements adds further complication to the code under circumstances where the sole intent is to avoid the H-V Limitation (i.e. to circumvent CS 29.1 and CS 29.1517).
In the short term; a much simpler/better method would be to preserve the status quo (in Europe and world-wide) by: prepending an enabling clause into Subparagraph 4.a of the essential requirements; and, by adding an alleviating clause into CAT.POL.H.305. The decision not to proceed with this option should be revisited, or justification – acceptable to interested parties - provided.
In the long term; there is need for discussions between the Certificating Authorities about the removal of the H-V Diagram as a Limitation from Part 29.
Please see attached pdf file for the detailed explanation.
Proposed Text: EHA recommends the following changes:

a. Amend Regulation (EC) No. 216/2008 (Basic Regulation), Annex IV, paragraph 4.a to read:

Unless otherwise determined in the implementing rules, ~~An~~ ***an*** aircraft must be operated in accordance with its airworthiness documentation and all related operating procedures and limitations as expressed in its approved flight manual or equivalent documentation as the case may be.

b. Amend CAT.POL.H.305 "Operations without an assured safe forced landing capability" by adding new sub-paragraph (c):
(c) Momentary flight through the height velocity (HV) envelope is permitted during the take-off and landing phases.

response *Accepted*

Please refer to Chapter 2 'Summary of comments and responses' of this document.

comment *48* comment by: *CHC Helicopter*

Attachment #4

After significant consultation with all EHA affected members including consultation with OEMs, EHA does not agree with the NPA and would like to recommend changes as explained in the text here below and substantiated in the attached file:

- For States which have a 'Code of Performance' in compliance with ICAO Annex 6, regulation is achieved with use of the 'Performance Classes' and by controlling limited exposure (outside these classes) with risk assessed procedures. For these States, the retention of the H-V Diagram as a Limitation in Part 29 is an unnecessary constraint on operations.
- Not all States using Part 29 have a 'Code of Performance'; those which do not, depend upon the 'conditioning' clauses of Part 29.1, and retention of the H-V Diagram as a Limitation, to provide (operational) control of performance from within the flight manual. This results in a situation where all States have to rely upon alleviation from the Limitation of the H-V Diagram when operating offshore with more than nine passenger seats.
- The significant intent of the changes to Part 29.1 as a result of NPRM 80-25, was to remove the H-V Diagram as a Limitation for 'utility operations' (aerial work) only and, for simplicity, to bind that to a seating configuration of less than 10. Offshore operations (Commercial Air Transport) cannot be regarded as 'utility operations'.
- The one inescapable fact that results from Part 29.1 is that unless Category A procedures are mandated, the H-V Diagram is a Limitation when more than nine passengers are carried.
- In NPA 2014-19; the proposed amendment to CS-29 – particularly in operations with more than nine passengers – undermines the logic and intent of Part 29.1 and introduces doubt and unnecessary complication into the certification process. In order to preserve a world-wide harmonised certification code, it should not be undertaken. The introduction of Category B to the Performance Class 2 requirements adds further complication to the code under circumstances where the sole intent is to avoid the H-V Limitation (i.e. to circumvent CS 29.1 and CS 29.1517).
- In the short term; a much simpler/better method would be to preserve the status quo (in Europe and world-wide) by: prepending an enabling clause into Subparagraph 4.a of the essential requirements; and, by adding an alleviating clause into CAT.POL.H.305. The decision not to proceed with this option should be revisited, or justification – acceptable to interested parties - provided.
- In the long term; there is need for discussions between the Certificating Authorities about the removal of the H-V Diagram as a Limitation from Part 29.

Please see attached pdf file for the detailed explanation.

Proposed Text: EHA recommends the following changes:
a. Amend Regulation (EC) No. 216/2008 (Basic Regulation), Annex IV, paragraph 4.a to read:

Unless otherwise determined in the implementing rules, ~~An~~ ***an*** aircraft must be operated in

accordance with its airworthiness documentation and all related operating procedures and limitations as expressed in its approved flight manual or equivalent documentation as the case may be.

b. Amend CAT.POL.H.305 "Operations without an assured safe forced landing capability" by adding new sub-paragraph (c):
(c) Momentary flight through the height velocity (HV) envelope is permitted during the take-off and landing phases.

response *Accepted*

Please refer to Chapter 2 'Summary of comments and responses' of this document.

comment *50* comment by: *UK CAA*

Page No: 18

Paragraph No: 3.1.1

Comment: The UK CAA does not support the proposed changes to CAT.POL.H.300 as they do not provide suitable solutions to the problem of flight through the H-V envelope and misinterpret certification specifications and performance operating requirements.

Justification: Proposed text introduces unnecessary confusion in operational requirements.

response *Noted*

Please refer to Chapter 2 'Summary of comments and responses' of this document.

comment *51* comment by: *UK CAA*

Page No: 18

Paragraph No: 3.1.2 and 3.1.3

Comment: The UK CAA fully supports the proposed changes which mirror the proposals previously supplied to correct these transcription errors.

Justification: Clarification and re-instatement of intent of original JAR-OPS 3 text.

response *Noted*

Please refer to Chapter 2 'Summary of comments and responses' of this document.

comment *52* comment by: *UK CAA*

Page No: 19-20

Paragraph No: 3.2
Comment: The UK CAA does not support the proposed additional AMC text for CAT.POL.H.300 and the changes to CS 29 and its AMC as they do not provide suitable solutions to the problem of flight through the H-V envelope. The changes to CS 29 go against

the principles of applicability of 29.1 established in the FAA Notice of Proposed Rule Making (NPRM) 80-25.

Justification: Proposed text introduces disharmony and unnecessary confusion between certification specifications and operational requirements.

response

Noted

Please refer to Chapter 2 'Summary of comments and responses' of this document.

comment

54 comment by: *Bond Offshore Helicopters*

After significant consultation with all EHA affected members including consultation with OEMs, BOH does not agree with the NPA and would like to recommend changes as explained in the text here below.

For States which have a 'Code of Performance' in compliance with ICAO Annex 6, regulation is achieved with use of the 'Performance Classes' and by controlling limited exposure (outside these classes) with risk assessed procedures. For these States, the retention of the H-V Diagram as a Limitation in Part 29 is an unnecessary constraint on operations. Not all States using Part 29 have a 'Code of Performance'; those which do not, depend upon the 'conditioning' clauses of Part 29.1, and retention of the H-V Diagram as a Limitation, to provide (operational) control of performance from within the flight manual. This results in a situation where all States have to rely upon alleviation from the Limitation of the H-V Diagram when operating offshore with more than nine passenger seats. The significant intent of the changes to Part 29.1 as a result of NPRM 80-25, was to remove the H-V Diagram as a Limitation for 'utility operations' (aerial work) only and, for simplicity, to bind that to a seating configuration of less than 10. Offshore operations (Commercial Air Transport) cannot be regarded as 'utility operations'. The one inescapable fact that results from Part 29.1 is that unless Category A procedures are mandated, the H-V Diagram is a Limitation when more than nine passengers are carried. In NPA 2014-19; the proposed amendment to CS-29 - particularly in operations with more than nine passengers - undermines the logic and intent of Part 29.1 and introduces doubt and unnecessary complication into the certification process. In order to preserve a world-wide harmonised certification code, it should not be undertaken. The introduction of Category B to the Performance Class 2 requirements adds further complication to the code under circumstances where the sole intent is to avoid the H-V Limitation (i.e. to circumvent CS 29.1 and CS 29.1517).

In the short term; a much simpler/better method would be to preserve the status quo (in Europe and world-wide) by: prepending an enabling clause into Subparagraph 4.a of the essential requirements; and, by adding an alleviating clause into CAT.POL.H.305. The decision not to proceed with this option should be revisited, or justification ¬acceptable to interested parties - provided.

In the long term; there is need for discussions between the Certificating Authorities about the removal of the H-V Diagram as a Limitation from Part 29.

Proposed Text: BOH recommends the following changes:
a. Amend Regulation (EC) No. 216/2008 (Basic Regulation), Annex IV, paragraph 4.a to read: Unless otherwise determined in the implementing rules, an aircraft must be operated in accordance with its airworthiness documentation and all related operating procedures and

limitations as expressed in its approved flight manual or equivalent documentation as the case may be.

b. Amend CAT.POL.H.305 "Operations without an assured safe forced landing capability" by adding new sub-paragraph (c): (c) Momentary flight through the height velocity (HV) envelope is permitted during the take-off and landing phases.

response *Accepted*

Please refer to Chapter 2 'Summary of comments and responses' of this document.

comment *56* comment by: *Civil Aviation Authority of Norway*

To us it seems that a much simpler solution would be to amend the Essential Requirements to permit the well understood and measured solution that is currently used in FARs and which has been used i JARs. This could be achieved by using wording currently employed in the Basic Requirement for permitting alleviations for other reasons; thereby facilitating the smallest change to EASA OPS without introducing a precedent, whilst retaining transparency.

Regulation (EC) No 216/200 Article 8 – Air Operations, paragraphs 2 and 3, already contain a precedent for the provision of a solution by having as the introduction to their text the phrase "unless otherwise determined in the implementing rules" – as follows:
2. Unless otherwise determined in the implementing rules, operators engaged in commercial operations shall demonstrate their capability and means of discharging the responsibilities associated with their privileges. These capabilities and means shall be recognised through the issuance of a certificate. The privileges granted to the operator and the scope of the operations shall be specified in the certificate.
3. Unless otherwise determined in the implementing rules, operators engaged in the non-commercial operation of complex motor-powered aircraft shall declare their capability and means of discharging the responsibilities associated with the operation of that aircraft.
The same wording could be used to amend paragraph 4.a.

Proposed Text:
CAA-Norway proposes that rather than the amendmendts proposed in the NPA, the following changes are made:

Amend Regulation (EC) No. 216/2008 (Basic Regulation), Annex IV, paragraph 4.a to read:
4.a **Unless otherwise determined in the implementing rules**, **an** aircraft must be operated in accordance with its airworthiness documentation and all related operating procedures and limitations as expressed in its approved flight manual or equivalent documentation as the case may be.

Amend CAT.POL.H.305 "Operations without an assured safe forced landing capability" by adding new sub-paragraph (c):
(c) Momentary flight through the height velocity (HV) envelope is permitted during the take-off and landing phases.

response *Accepted*

Please refer to Chapter 2 'Summary of comments and responses' of this document.