



European Union Aviation Safety Agency  
**Comment-Response Document (CRD) 2020-16**

---

RELATED NPA: 2020-16 — OPINION No 01/2022 — RMT.0120

7.2.2022

### Table of contents

1. Summary of the outcome of the consultation	2
2. Individual comments and responses	3
3. Appendix — Attachments	33



## 1. Summary of the outcome of the consultation

During the public consultation of NPA 2020-16, the following main topics were raised by the stakeholders:

- General support was received from national competent authorities.
- Requests for clarification of the applicability of the various provisions due to the linkages created between Regulation (EU) No 965/2012<sup>1</sup> (the Air Operations Regulation) and Annex I (Part-26) to Regulation (EU) 2015/640<sup>2</sup>. The applicability was verified as part of the final review of the regulatory text.
- Specific suggestions to provide certainty of what is required by individual provisions/specifications such as those for underwater emergency exits, lighting, and life raft retaining lines.
- Requests for clarification of the applicability of Annex I (Part-26) to ‘State aircraft’ such as those conducting search and rescue operations.
- Several comments were received requesting greater certainty of how the practicality of design changes can be assessed by EASA as a result of the required design review of existing emergency flotation systems (EFSs). Further guidance has been included in the associated Guidance Material.
- Several comments were received implying that the requirements for the automatic arming of the emergency flotation without ‘any pilot action during flight’ were impractical or that the costs in the regulatory impact assessment were too low. The higher costs that were provided were used as the basis for a revised cost–benefit analysis, and the outcome of this analysis was still positive. In the responses to the comments, it was clarified that some rotorcraft types already comply with this requirement and that a design change is not mandated, and the type certificate holder can demonstrate that the emergency flotation system (EFS) is safe throughout the flight envelope.
- Comments were received requesting clarification of how compliance can be demonstrated particularly for underwater emergency exits. Additional details have been included to the draft text for the corresponding amendments to CS-26, where considered necessary.
- Comments were received on Option 4 ‘irregular wave testing’ in the regulatory impact assessment regarding some of elements of the cost–benefit analysis and the statistics that were used. This information was considered and there was no significant impact on the outcome of the cost–benefit analysis, which was still negative.

<sup>1</sup> Commission Regulation (EU) No 965/2012 of 5 October 2012 laying down technical requirements and administrative procedures related to air operations pursuant to Regulation (EC) No 216/2008 of the European Parliament and of the Council (OJ L 296, 25.10.2012, p. 1).

<sup>2</sup> Commission Regulation (EU) 2015/640 of 23 April 2015 on additional airworthiness specifications for a given type of operations and amending Regulation (EU) No 965/2012 (OJ L 106, 24.4.2015, p. 18).



## 2. Individual comments and responses

In responding to the comments, the following terminology is applied to attest EASA's position:

- (a) **Accepted** — EASA agrees with the comment and any proposed change is incorporated into the text.
- (b) **Partially accepted** — EASA either partially agrees with the comment or agrees with it but the proposed change is partially incorporated into the text.
- (c) **Noted** — EASA acknowledges the comment, but no change to the text is considered necessary.
- (d) **Not accepted** — EASA does not agree with the comment or proposed change.

### (General Comments)

-

comment	4	comment by: <i>DGAC France</i>
	Please note that DGAC France has no specific comments on this NPA.	
response	Noted	
	EASA appreciates DGAC France's support for this NPA.	
comment	5	comment by: <i>Swedish Transport Agency, Civil Aviation Department (Transportstyrelsen, Luftfartsavdelningen)</i>
	Thank you for the opportunity to comment on NPA 2020-16, Helicopter ditching and water impact occupant survivability. Please be advised that there are no comments from the Swedish Transport Agency.	
response	Noted	
	EASA appreciates the Swedish Transport Agency's support for this NPA.	
comment	13	comment by: <i>LBA</i>
	LBA: The LBA has no comments	
response	Noted	
	EASA appreciates the LBA's support for this NPA.	
comment	14	comment by: <i>Bell</i>
	Bell comments are included with industry comments provided by GAMA.	
response	Noted	



comment	<p>15 <span style="float: right;">comment by: <i>General Aviation Manufacturers Association</i></span></p> <p>Note: The following Industry comments are submitted by GAMA on behalf of Airbus Helicopters, Bell Flight and Leonardo Helicopters.</p>
response	Noted
comment	<p>16 <span style="float: right;">comment by: <i>General Aviation Manufacturers Association</i></span></p> <p>Applicability of the options throughout the NPA is confusing and not consistent.</p> <p>The requirements under Part 26 are specific about which operations are impacted, whereas the rest of the document provides more general descriptions, which are not consistent with the Part 26 changes.</p> <p>Most Part 26 requirements are limited to CAT.IDE.H.320(a) which equates to PC 1 &amp; 2, greater than 10 mins from land in a hostile environment. The rest of the NPA does not make this distinction. If the intent is for different applicability, the NPA needs to be reissued to correct the applicability so the feasibility and impacts can be assessed properly.</p>
response	<p>Not accepted</p> <p>The origin of the proposed amendments to Part-26 / CS-26 lies in the amendments to CS-27 and CS-29 that were introduced at Amendment 5 for both CSs as a result of RMT.0120 Phase 1.</p> <p>RMT.0120 Phase 2 considered the appropriateness of applying the required design changes for newly certified rotorcraft to newly built rotorcraft and the existing offshore rotorcraft fleet. This required a design-centric approach to the determination of the proposed amendments to Part-26 / CS-26.</p> <p>The applicability criteria for the design changes were either:</p> <ul style="list-style-type: none"> <li>— Small rotorcraft (CS-27),</li> <li>— Small CS-27 Category A rotorcraft,</li> <li>— Large rotorcraft (CS-29).</li> </ul> <p>The applicability of the different options (and sub-options for Option 1) can be found in Section 4 of the NPA.</p> <p>When determining the applicability of the proposed amendments to Part-26 / CS-26, EASA along with the Rulemaking Group considered the type of operations conducted by the different categories of rotorcraft, and differentiated between operations that required just an EFS to be installed and those that required full ditching certification, in the same manner as that which was applied to develop the amendments to CS-27 and CS-29 Amendment 5.</p> <p>EASA does not intend to reissue the NPA.</p>

comment	66	comment by: <i>Leonardo Helicopters</i>
	Leonardo Helicopters provided GAMA with 8 comments to NPA 2020-16, which have been discussed by the Industry and included in the comments submitted by GAMA.	

response	Noted
----------	-------

comment	67	comment by: <i>Airbus Helicopters</i>
	Airbus Helicopters comments on this NPA have been consolidated with GAMA/ASD RTR members and submitted to EASA by GAMA.	

response	Noted
----------	-------

<b>Executive Summary</b>	p. 1
--------------------------	------

comment	6	comment by: <i>SKALARKI electronics</i>
	test	

response	Noted
----------	-------

<b>2.3. How we want to achieve it — overview of the proposals</b>	p. 6-8
---	--------

comment	32	comment by: <i>General Aviation Manufacturers Association</i>
	Reference: "...robustness of existing emergency flotation systems..."	
	"An assessment of the installation..." - What kind of assessment is requested by EASA? Is an engineering judgment sufficient? How would the robustness of the EFS and the assessment of the installation be demonstrated? Is a statement based on engineering judgement considered acceptable as a means of compliance?	

response	Noted
----------	-------

	Please see the response to comment #22.
--	---

<b>3. Proposed amendments — Regulation (EU) 2015/640 — Annex I (Part-26) — 26.410</b>	p. 11
---	-------

comment	8	comment by: <i>Safran Aerosystems</i>
	What will be the date of application ? Or where it will be defined ?	

response	Noted
----------	-------

	The applicability date will be determined before the Commission Implementing Regulation enters into force, and will provide for sufficient time for OEMs and operators to make the necessary changes to their rotorcraft.
--	---



comment	17	comment by: <i>General Aviation Manufacturers Association</i>
	<p>Clarify the applicability as: CAT.IDE.H.320(a) applies to PC 1 or 2 which need Category A certification or equivalent and does not apply to "small" helicopters.</p> <p>We suggest removal of the reference to small helicopters. This requirement includes small helicopters which based on CAT.IDE.H.320(a) are excluded; as CAT.IDE.H.320(a) defines applicability to "helicopters" generally - this would be sufficient.</p>	
response	<p>Not accepted</p> <p>In the proposed amendments to Part-26, EASA has made the link between operational requirements and design requirements. The distinction in this case is when ditching certification is required or not. It is recognised that small CS-27 non-Category A helicopters cannot be operated in PC1 or 2. However, all helicopters that are certified in accordance with CS-27 are classified as 'small helicopters' even if they comply with CS-27 Appendix C and are, therefore, certified as 'Category A'.</p>	

<b>3. Proposed amendments — Regulation (EU) 2015/640 — Annex I (Part-26) — 26.415</b>	p. 11
---	-------

comment	18	comment by: <i>General Aviation Manufacturers Association</i>
	<p>Part 26.415(a)</p> <p>Please clarify applicability, as CAT.IDE.H.320(a) applies to PC 1 or 2, which need Category A certification or equivalent and does not apply to "small" helicopters.</p> <p>We suggest the removal of the reference to small helicopters. This requirement includes small helicopters, which based on CAT.IDE.H.320(a) are excluded, as CAT.IDE.H.320(a) defines applicability to "helicopters" generally - this would be sufficient.</p>	
response	<p>Not accepted</p> <p>Please see the response to comment #17.</p>	
comment	34	comment by: <i>General Aviation Manufacturers Association</i>
	<p>Part 26.415(a)(2)</p> <p>We believe the intent of this requirement is to have 4 seats abreast and direct access for all. Therefore the seats do not always need to be aligned per say, to meet that target.</p> <p>We suggest the modification of the terms: "...seats are aligned..." to "...seats are arranged...".</p>	
response	<p>Partially accepted</p> <p>Text reworded to read '...seats are located...', to be consistent with the CS-26 wording.</p>	



comment	<p>35 <span style="float: right;">comment by: <i>General Aviation Manufacturers Association</i></span></p> <p>Part 26.415(a)(3)</p> <p>We believe the rule text refers to 'side by side' which limits the possibility to have passengers exiting one above the other simultaneously.</p> <p>We suggest that the terms: "<i>side by side</i>" are modified to read "<i>simultaneously</i>".</p>
response	<p>Accepted</p> <p>Text changed to 'simultaneously'.</p>
comment	<p>36 <span style="float: right;">comment by: <i>General Aviation Manufacturers Association</i></span></p> <p>Part 26.415(b)(2)</p> <p>We believe the provision of a HEELS all along the periphery of the exit may not be practicable - the rule intent can be complied with, if the exit are able to be easily identified.</p> <p>We suggest the modification of the terms "<i>...easily identify the periphery of the apertures...</i>" with "<i>...easily identify the location of the apertures...</i>".</p>
response	<p>Not accepted</p> <p>The intent was not to require continuous lighting all along the periphery of the exit. However, it is not sufficient to just identify the location of the aperture; the periphery must be easily identified.</p>
comment	<p>38 <span style="float: right;">comment by: <i>General Aviation Manufacturers Association</i></span></p> <p>CS 26.415 (d)</p> <p>The provision of a HEELS all along the periphery of the exit may not be practicable - the rule intent can be complied with, as the exit are able to be easily identified.</p> <p>We suggest the modification of the terms "<i>...along the periphery...</i>" with "<i>...along the periphery but not necessarily continuously...</i>".</p>
response	<p>Accepted</p> <p>Text changed to read '...along the periphery but not necessarily continuously...'.</p>
comment	<p>68 <span style="float: right;">comment by: <i>Sikorsky Aircraft Corporation</i></span></p> <p>Sikorsky Aircraft Corporation Comment: 26.415(a)(2)(3) should not be applicable to rotorcraft providing search and rescue response. Rotorcraft configured for search and rescue response include crew member(s) in the cabin trained in emergency egress procedures to ensure rapid evacuation of all crew and passengers. The cabins</p>

	<p>of search and rescue rotorcraft are designed to maximize the effectiveness of the crew to rescue and treat injured patients. The requirements defined by 26.415(a)(2)(3) would impact the installation of life saving equipment by restricting the configuration of the cabin. As such, CS 26.415(a)(2)(3) would have the unintended effect of negatively impacting search and rescue capabilities. The safety enhancement proposed by CS 26.415(a)(2)(3) is provided by the trained crew members in the cabin and as such is not applicable to search and rescue rotorcraft.</p>
response	<p>Agreed</p> <p>The Basic Regulation does not apply to search and rescue aircraft since they are classified as 'State aircraft'; therefore, point CAT.IDE.H.320 is not applicable to these aircraft. Therefore, for these operations, point 26.415 of Part-26 will not be applicable to search and rescue rotorcraft.</p>

### 3. Proposed amendments — Regulation (EU) 2015/640 — Annex I (Part-26) — 26.420 p. 11-12

comment	<p>9 <span style="float: right;">comment by: <i>Safran Aerosystems</i></span></p> <p>(a) Define the word "near" and the intended purpose (exemple : along side of the rotorcraft according to AMC CS 27.1415.)</p>
response	<p>Not accepted</p> <p>CS 26.420(a) states that the retaining line of the life raft should keep the life raft 'alongside the helicopter'.</p>
comment	<p>19 <span style="float: right;">comment by: <i>General Aviation Manufacturers Association</i></span></p> <p>Part 26.420 Flight over water emergency equipment</p> <p>We suggest that 26.420 "Flight over water emergency equipment" is rephrased, as follows:</p> <p>Operators of small helicopters and large helicopters that are required to comply with the requirements of points CAT.IDE.H.300, NCC.IDE.H.227 or SPO.IDE.H.199 of Regulation (EU) No 965/2012 shall ensure that:</p> <p>(i) each life raft will remain near the helicopter after inflation.</p> <p>(ii) an additional means to keep the inflated life raft attached to the helicopter further away at a distance that would not pose a danger to the life raft itself or the persons on board.</p> <p>In the event that the helicopter becomes totally submerged, both of these means of retention shall break before the helicopter submerges even when the life raft is empty."Should the liferaft be held close to the helicopter by means of a short lanyard attached to the airframe, the liferaft is more likely to become entrapped under the helicopter in the event of a capsizing toward the liferaft, therefore this retention means should only be introduced if strictly necessary.</p> <p>See the above proposed rewording for amendment to part 26 and CS-26.</p>



response	Not accepted
	The need for a short retaining line has been widely acknowledged as being necessary, and is included in the CS-27 / CS-29 requirements.
comment	20 <span style="float: right;">comment by: <i>General Aviation Manufacturers Association</i></span>
	Part 26.420(c)
	Please clarify applicability, as CAT.IDE.H.320(a) applies to PC 1 or 2 which need Category A certification or equivalent and does not apply to "small" helicopters.
	We suggest the removal of reference to small helicopters. This requirement includes small helicopters which based on CAT.IDE.H.320(a) are excluded, as CAT.IDE.H.320(a) defines applicability to "helicopters" generally. This would be considered sufficient.
response	Not accepted
	Please see the response to comment #17.
comment	37 <span style="float: right;">comment by: <i>General Aviation Manufacturers Association</i></span>
	CS 26.420
	The break force for the retaining line not stated.
	The break force is defined in ETSO-2C70a - the inclusion of the reference to this standard is suggested as an acceptable means of compliance.
response	Not accepted
	The break force for the retaining line is not included in CS-27 / CS-29 and, therefore, it would not be appropriate to be specified in CS-26.

<b>3. Proposed amendments — Regulation (EU) 2015/640 — Annex I (Part-26) — 26.425</b>	p. 12
---	-------

comment	22 <span style="float: right;">comment by: <i>General Aviation Manufacturers Association</i></span>
	Part 26.425
	The required assessment is not practical for existing designs.
	We suggest that the requested design assessment is too subjective and can lead to extensive design changes. Further, we suggest that the requirement for the design assessment to be deleted.
	An existing, certified flotation system has been shown to be "safe" based on its original certification basis. Unsafe conditions are addressed through requirements which require OEMs to rectify these conditions. To require reevaluation of the system implies that the original findings of compliance are flawed and no longer

	<p>appropriate. Note that new flotation systems are defined as not-significant changes in GM to EASA Part 21 and can comply with earlier requirements, therefore it has been recognized that previous certification specifications are "safe".</p> <p>We also question the scope for EFS (27.802) and sea state statement in AFM - further clarification requested.</p>
<p>response</p>	<p>Design Assessment: Not accepted</p> <p>It is agreed that this requirement is not feasible in retrofit. However, design changes may be feasible for a production cut-in.</p> <p>The aim of this requirement is to evaluate the potential to introduce design changes that will improve occupant safety and survivability in the event of a survivable water impact. Design changes considered practicable should then be implemented in production.</p> <p>The applicant is expected to select the design changes that are practicable and those that are not, including the justification for this classification. A suitable methodology to determine 'impracticality' could be based on the concepts of Part 21 Appendix E to GM 21.A.101 <i>Procedure for evaluating material contribution to safety or impracticality of applying latest certification specifications to a changed product</i>, or alternatively the applicant may propose a suitable criterion.</p> <p>CS 26.430 has been updated, and GM 26.430 added to clarify EASA's expectations.</p> <p>EFS and sea statement: Not accepted</p> <p>For rotorcraft fitted with emergency flotation system (EFS) equipment, as required by point CAT.IDE.H.320(b), the selected sea conditions, substantiated at the time of certification, should be provided to the operator (i.e. published in the rotorcraft flight manual (RFM)) in order for the operator to be aware of the demonstrated performance of the EFS equipment.</p>

**3. Proposed amendments — Regulation (EU) 2015/640 — Annex I (Part-26) — 26.430** p. 12-13

<p>comment</p>	<p>21 <span style="float: right;">comment by: <i>General Aviation Manufacturers Association</i></span></p> <p>Part 26.430(a) &amp; (b)</p> <p>Please clarify the applicability of CAT.IDE.H.320(a) applies to PC 1 or 2, which need Category A certification or equivalent and does not apply to "small" helicopters.</p> <p>We suggest the reoval of the reference to small helicopters. This requirement includes small helicopters which based on CAT.IDE.H.320(a) are excluded; further, CAT.IDE.H.320(a) defines applicability to "helicopters" generally; this would be considered sufficient.</p>
<p>response</p>	<p>Not accepted</p>



Please see the response to comment #17.

comment	<p>23 <span style="float: right;">comment by: <i>General Aviation Manufacturers Association</i></span></p> <p>Part 26.435 (a) &amp; ( b)</p> <p>The required assessment is not practical for existing designs.</p> <p>We suggest that the requested design assessment is too subjective and can lead to extensive design changes. Further, we suggest that the requirement for the design assessment to be deleted.</p> <p>An existing, certified flotation system has been shown to be "safe" based on its original certification basis. Unsafe conditions are addressed through requirements which require OEMs to rectify these conditions. To require reevaluation of the system implies that the original findings of compliance are flawed and no longer appropriate. Note that new flotation systems are defined as not-significant changes in GM to EASA Part 21 and can comply with earlier requirements, therefore it has been recognized that previous certification specifications are "safe".</p>
response	<p>Not accepted</p> <p>Please see the response to comment #22.</p>

comment	<p>28 <span style="float: right;">comment by: <i>General Aviation Manufacturers Association</i></span></p> <p>CS 26.430(b)</p> <p>There is no criteria for what design changes are practical. Design changes that are considered by EASA to be practicable based upon the determination above must be subsequently incorporated into the design - either add criteria or remove the requirement.</p> <p>Experience has shown that what may be deemed practical by EASA may not be deemed practical by TC or STC holders. The term "practical" is too subjective without some criteria.</p>
response	<p>Accepted</p> <p>The applicant is expected to select the design changes that are practicable and those that are not, including the justification for this classification. A suitable methodology to determine the 'impracticality' could be based on the concepts of Part 21 Appendix E to GM 21.A.101 <i>Procedure for evaluating material contribution to safety or impracticality of applying latest certification specifications to a changed product</i>, or alternatively the applicant may propose a suitable criterion.</p> <p>CS 26.430 has been updated, and GM 26.430 added to clarify EASA's expectations.</p>

comment	<p>24 <span style="float: right;">comment by: <i>General Aviation Manufacturers Association</i></span></p> <p>Part 26.435(a)</p> <p>Please clarify the applicability of CAT.IDE.H.320(a) as it applies to PC 1 or 2 which need Category A certification or equivalent.</p> <p>We suggest the change of "CAT.IDE.H.320(a)" to "CAT.IDE.H.320" if applicability is meant to include all helicopters subject to ditching requirements.</p>
response	<p>Not accepted</p> <p>Although it is noted that non-Category A small helicopters cannot operate under CAT.IDE.H.320(a), this requirement is added to ensure complete consistency with the Certification Specifications, which require auto-deploy of the emergency flotation system (EFS) for all small helicopters. It is not intended to apply this requirement to helicopters that operate under CAT.IDE.H.320(b) where the installation of EFSs only is sufficient.</p>
comment	<p>25 <span style="float: right;">comment by: <i>General Aviation Manufacturers Association</i></span></p> <p>Part 26.435(b)</p> <p>We believe that "Auto-arm" is not practical for existing designs.</p> <p>In most cases, an auto-arming system would require to meet FDAL Level A based on potential hazards related to inadvertent inflation at high speed. The design assurance and certification effort is not commensurate with the level of safety.</p> <p>We suggest the deletion of "<i>and shall not rely on any pilot action during flight.</i>".</p> <p>The RMT working group did not agree on the feasibility of the "auto-arm" feature. It was argued that making this retroactive for older types would require significant effort due to the potential hazards. Although a previous design is quoted it was determined by the WG that it did not meet the reliability criteria but had been accepted via trade off with the perceived safety benefit. See additional comments on the CBA.</p>
response	<p>Not accepted</p> <p>The text 'Shall not rely on any pilot action during flight' included in point 26.435(b) does not mandate the installation of an auto-arming system. Some rotorcraft currently in operation do not have any limitations on the arming of the emergency flotation system (EFS) and, therefore, already meet this requirement without the need to install an auto-arming system.</p> <p>EASA has carefully considered the inputs from the RMT working group and carried out a detailed cost-benefit analysis for this requirement. Even when considering an increased development cost of 1.5M EUR per type and removing the benefits from auto-deployment of the EFS, the cost-benefit analysis still remains positive for this requirement.</p>

**3. Proposed amendments — CS-26 — CS 26.415**

p. 13-14

comment	<p>26 <span style="float: right;">comment by: <i>General Aviation Manufacturers Association</i></span></p> <p>CS 26.415(c)</p> <p>The specified means of compliance is not practical for existing designs, as the required test, demonstration or analysis is too subjective.</p> <p>We request the clarification of the test, demonstration or analysis is conducted with the helicopter in the upright position but must consider obstructions that may be present if capsized.</p> <p>Such a subjective requirement can be subject to interpretation which can lead to disagreement on the acceptable MoC. The AMC provided in CS-27 and CS-29 does not provide acceptable criteria. For example, does a test underwater need to be conducted to demonstrate compliance?</p>
response	<p>Accepted</p> <p>GM 26.415 has been amended to provide additional clarification on the acceptable compliance demonstration.</p>

comment	<p>69 <span style="float: right;">comment by: <i>Sikorsky Aircraft Corporation</i></span></p> <p>Sikorsky Aircraft Corporation Comment: 26.415(a)(2)(3) should not be applicable to rotorcraft providing search and rescue response. Rotorcraft configured for search and rescue response include crew member(s) in the cabin trained in emergency egress procedures to ensure rapid evacuation of all crew and passengers. The cabins of search and rescue rotorcraft are designed to maximize the effectiveness of the crew to rescue and treat injured patients. The requirements defined by 26.415(a)(2)(3) would impact the installation of life saving equipment by restricting the configuration of the cabin. As such, CS 26.415(a)(2)(3) would have the unintended effect of negatively impacting search and rescue capabilities. The safety enhancement proposed by CS 26.415(a)(2)(3) is provided by the trained crew members in the cabin and as such is not applicable to search and rescue rotorcraft.</p>
response	<p>Agreed</p> <p>The Basic Regulation does not apply to search and rescue aircraft as they are classified as ‘State aircraft’ and, therefore, point CAT.IDE.H.320 is not applicable for these operations, and point 26.415 of Part-26 will not be applicable to search and rescue rotorcraft.</p>

**3. Proposed amendments — CS-26 — CS 26.430**

p. 15

comment	<p>10 <span style="float: right;">comment by: <i>Safran Aerosystems</i></span></p>
---------	--



response	<p>b) Sentence not clear enough (length)</p> <p>Accepted</p> <p>CS 26.430(b) has been moved to the new CS 26.431(a), and has been significantly reworded.</p>
comment	<p>11 <span style="float: right;">comment by: <i>Safran Aerosystems</i></span></p> <p>(b) "Design change that are considered by EASA...." How it will be evaluated fairly ?</p>
response	<p>Noted</p> <p>Please see the response to comment #22.</p>
comment	<p>12 <span style="float: right;">comment by: <i>Safran Aerosystems</i></span></p> <p>b) "As far as practicable..." =&gt; Requirement = Mandatory it looks like a guideline rather than a requirement too much room for interpretation.</p>
response	<p>Not accepted</p> <p>The use of the concept of ‘practicality’ is a well-established means to evaluate the safety benefits of the inclusion of design features or changes taking into consideration the degree of effort required to implement it in terms of different factors (e.g. cost, additional weight, physical limitations, operational restrictions, etc). This is not to be confused with cost or affordability alone. Without the term ‘as far as practicable’, this would oblige the OEM to consider and include all ‘possible’ design changes without determining first whether they would provide a tangible safety benefit when weighed against the impact of the design change. EASA believes that this is not the wish/intention of the commentator.</p> <p>Please, see also the response to comment #22.</p>
comment	<p>27 <span style="float: right;">comment by: <i>General Aviation Manufacturers Association</i></span></p> <p>The required assessment is not practical for existing designs and can lead to extensive design changes - the requested design assessment is too subjective.</p> <p>We suggest that the requirement for the design assessment to be deleted.</p> <p>The RMT working group agreed that water impact loads on the flotation system could not be defined, therefore Industry argued that this requirement should not be included. It requires a “subjective design review” to identify potential failure points / features. What has been suggested is flexible charge lines, lines not susceptible to “guillotine” type loads, etc. The problem with this is the subjectivity and therefore proving that you meet this requirement.</p>
response	<p>Not accepted</p>



Please see the response to comment #22.

comment	<p>72 <span style="float: right;">comment by: <i>Sikorsky Aircraft Corporation</i></span></p> <p>Sikorsky Aircraft Corporation Comment:</p> <p>26.430(a)(b) is met by meeting CS 29.801(c)(1) at Amdt. 5. AMC 29.801(c)(1)(iii)(D) provides guidance stating the design of the flotation system “where practicable” must meet “crash” loads but does not define the required loads. AMC 29.801(a) cites 29.563, is the agency intending the applicant apply 29.563 to the entire flotation system and not just the provisions? The regulation or the AMC needs to clearly define the criteria to which the flotation system is to be analyzed.</p>
response	<p>Not accepted</p> <p>The related specifications in CS-27 and CS-29 from Amendment 5 onwards require design considerations to be taken with regard to the emergency flotation system (EFS) design to minimise the effects of a water impact (crash) on the functionality of the EFS.</p> <p>Design considerations are provided in the associated AMC. ‘Crash’ loads are not specifically defined. This proposed regulatory text is consistent with CS-27 and CS-29.</p>

### 3. Proposed amendments — CS-26 — CS 26.435

p. 16

comment	<p>29 <span style="float: right;">comment by: <i>General Aviation Manufacturers Association</i></span></p> <p>CS 26.435(b)</p> <p>We believe that "Auto-arm" is not practical for existing designs. In most cases, an auto-arming system would require to meet FDAL Level A based on potential hazards related to inadvertent inflation at high speed. The design assurance and certification effort is not commensurate with the level of safety.</p> <p>We suggest the deletion of "...and shall not rely on any pilot action during flight."</p> <p>The RMT working group did not agree on the feasibility of the “auto-arm” feature. It was argued that making this retroactive for older types would require significant effort due to the potential hazards. Although a previous design is quoted it was determined by the WG that it did not meet the reliability criteria but had been accepted via trade off with the perceived safety benefit. See additional comments on the CBA.</p>
response	<p>Not accepted</p> <p>Please see the response to comment #25.</p>

### 3. Proposed amendments — CS-29 — CS 29.801

p. 17



comment	71	comment by: Sikorsky Aircraft Corporation
	Sikorsky Aircraft Corporation Comment:	
	<b>1) Add clarification to AMC 29.801</b>	
	Recommend updating AMC CS 29.801 by adding reference to 29.563: (c)(1)(iii)(D) – When showing compliance with CS 29.801(c)(1), and where practicable, the design of the flotation system should consider the likely effects of water impact (i.e. crash) loads [defined by 29.563.]	
response	Not accepted	
	The loads defined by CS 29.563 are those for a ditching scenario. The intent of CS 29.801(c)(1) is the consideration of the design of the emergency flotation system (EFS) to minimise the effects of a water impact (crash) on its functionality. 'Crash' loads are not specifically defined.	

### 3. Proposed amendments — AMC/GM — GM 26.415(a)(1)

p. 19

comment	40	comment by: General Aviation Manufacturers Association
	The GM does not specify the guidelines and targets which are not controls to open the exit, may remain in different colour than yellow/black.	
	It is proposed to delete the GM text: " <del>Any other operating feature, e.g. highlighted 'push here' decal(s) for openable windows, should also incorporate black and yellow striped markings.</del> " [struck-through for emphasis].	
response	Not accepted	
	This is consistent with the AMC material contained in Amendment 5 to CS-27 and CS-29, and does not constitute a significant burden.	

### 3. Proposed amendments — AMC/GM — GM 26.415(b)(1)

p. 19

comment	30	comment by: General Aviation Manufacturers Association
	This GM does not provide expected environment for the demonstration. The requirement under CS 26.415(c) implies upright and submerged.	
	Please clarify the expected environment for this demonstration in the upright condition.	
response	Accepted	
	Please see the response to comment #26.	





comment	<p>39 <span style="float: right;">comment by: <i>General Aviation Manufacturers Association</i></span></p> <p>"Underwater emergency exits"</p> <p>The possible design solution and the fail/pass criteria for acceptability of the cabin windows as a usable egress route is provided in the GM. It would be better to include this material in AMC to associated CS 26.415. Using this approach, the CS can be referred to in the certification programme and the proposed possible design solution recognised as AMC to this CS.</p> <p>We suggest the transfer of the GM 26.415(b)(1) into an AMC to CS 26.415.</p>
response	<p>Not accepted</p> <p>Due to the unique regulatory framework of Part-26, CS-26 only contains:</p> <ol style="list-style-type: none"> <li>1. acceptable certifications specifications that can be used for compliance demonstration in the event that the certification basis for the product does not already address the design provisions;</li> <li>2. references to acceptable certification specifications that can be used for compliance demonstration when already included in the certification basis for the product;</li> <li>3. guidance material to assist with the interpretation of the certification specifications mentioned in (1).</li> </ol>
comment	<p>70 <span style="float: right;">comment by: <i>Sikorsky Aircraft Corporation</i></span></p> <p>Sikorsky Aircraft Corporation:</p> <p><b>1) Add paragraph to AMC CS 26.415(b):</b>  (b) Compliance with points 26.415(a)(2) and (3) of Part-26 is demonstrated by complying with CS 27.807(d)(1) of CS-27 at Amendment 5 or later or the equivalent or CS 29.807(d)(1) of CS-29 at Amendment 5 or later or the equivalent respectively.</p> <p>[For rotorcraft which have demonstrated compliance with 26.410, 26.425, 26.430, and 26.435, cabin openings (passenger cabin windows) which do not meet the dimensions of CS 29.807(a)(4) may be certified as underwater emergency exits for passengers when it can be proven through test, demonstration, or analysis their ability to provide for rapid escape with the helicopter in the upright floating position and must not require exceptional effort (&lt;50lbf) to open with the helicopter cabin flooded. Requirement for analysis considering a flooded cabin is to define the analysis of the force required to open the window is completed when there is equal pressure on both sides of the window.]</p>
response	<p>Partially accepted</p> <p>Windows smaller than the specified size are acceptable provided that the exit can facilitate the rapid escape by passengers with the maximum shoulder size that are permitted to be seated in that location. This can be demonstrated by test or analysis. CS26.415(b) has been updated to reflect this.</p>

**3. Proposed amendments — AMC/GM — GM 26.435(b)**

p. 20

comment	<p>31 <span style="float: right;">comment by: <i>General Aviation Manufacturers Association</i></span></p> <p>The "Auto-arm" is not practical for existing designs. The GM further illustrates the complexity and hazards associated with the "auto-arming" feature.</p> <p>We suggest the deletion of aspects relating to the auto-arming feature but retain the automatic deployment on water entry.</p> <p>The RMT working group did not agree on the feasibility of the "auto-arm" feature. It was argued that making this retroactive for older types would require significant effort due to the potential hazards. Although a previous design is quoted it was determined by the WG that it did not meet the reliability criteria but had been accepted via trade off with the perceived safety benefit. See additional comments on the CBA.</p>
response	<p>Not accepted</p> <p>Please see the response to comment #25.</p>

**4. Impact assessment (IA) — 4.1. What is the issue**

p. 21-27

comment	<p>2 <span style="float: right;">comment by: <i>Aeronautical Data Systems Inc.</i></span></p> <p>Comments to EASA NPA 2020-16 "Helicopter ditching and water impact occupant survivability" December 26, 2020</p> <p>Section 4.1 Page 21: What is the issue</p> <p>As noted in this document there is a direct correlation between survival and exposure times at sea should occupants survive a ditching event. Due to cold water and the effects of hypothermia in northern and southern latitudes exposure times in cold water due to hypothermia can cause death within minutes. Although this document focuses more on equipment and its functionality, it also concludes survivability is dependent on a time of rescue.</p> <p>As pointed out in Appendix A (see attached) it is obvious there is a time limit on exposure in the water and the true and ultimate goal for any ditching is rescue .....not recovery. The success of any rescue is directly correlated to time of exposure and this should be equally weighted against emergency equipment.</p> <p>There are two parts to this problem under discussion and they are a successful ditching-surviving the water landing and getting into a lift raft.....and the other component is being rescued within a certain time frame.</p> <p>The quicker the rescue.....the greater the increase in occupant survivability.</p> <p>For any pilot, and this will include helicopter and fixed wing, time of rescue can be achieved by translating altitude into distance. For high altitude aircraft at 45,000 feet this could be over 150 miles reducing rescue time from days into minutes. For rotor craft this could mean hours to minutes. Regardless of the exact time, the point here is if the pilot is empowered to have AIS data available in a useful format this is the beginning of reducing rescue time.</p>
---------	---



Up until now AIS information is available to the coast guard, RCC, AMVER and other type agencies and is essential for SAR operations, but think of how much the safety envelop can be expanded if the pilot had this information available and was employed as part of their flight planning process as well as emergency procedures. If the pilot was required to have this AIS data available ditching procedures for aircraft which are currently day VFR can now be expanded to ditching at night, or in low visibility or low ceiling conditions. Inserting ship location into the aircraft navigation system could allow the aircraft to fly to a ship within range and ditch by that ship using the aircraft automation much in the same way aircraft fly instrument approaches to airports in poor weather conditions. The pilot no longer needs to see the vessel to ditch the aircraft. This process will significantly decrease time of rescue and pilot task saturation during critical times of flight while at the same time increase situational awareness.

In February last year a cargo flight from Nassau in the Bahamas in a Convair (C131) was enroute to Opa-Locka airport located within the Miami TCA. Approximately 9 miles off the coastline of Miami the Convair experienced a rare loss of both engines. The aircraft ditched and the copilot was found and rescued in a life raft. The captain was lost at sea and never found. Using historic AIS data overlayed on the aircraft route and radar returns where the aircraft ditched, there was a ship within a few miles behind them that if this information was available the pilot could have maneuvered the aircraft to land in the vicinity of this ship had they knew the ships location.

In today's world where this information is available, it should be a part of every overwater flight segment just as a matter of principal. Information will increase the success for any water landing and that is my comment for this committee.

response

Not accepted

The scope of this RMT is limited to improvements in the airworthiness of newly certified rotorcraft (CS-27 and CS-29), newly produced (and previously certified) rotorcraft, and existing rotorcraft (Part-26 / CS-26) in the event of ditching or a survivable water impact event.

The suggested additional technology for AIS data is not within the scope of airworthiness neither of this RMT. The suggested amendments would need to be addressed by amending the equipment required by rotorcraft operators that conduct operations overwater as mandated by Regulation (EU) No 965/2012, which is not within the scope of this RMT.

comment

3 comment by: *Aeronautical Data Systems Inc.*

[Attachment #1](#)

response

Noted  
Please see the response to comment #2.



comment	<p>33 <span style="float: right;">comment by: <i>General Aviation Manufacturers Association</i></span></p> <p>Section 4.1.3</p> <p>We believe the reasons for not complying with latest certification specifications is incomplete. Please list the reasons for not complying with the latest CS amendment; this should include the fact that the additional of EFS is a 'not-significant change' per EASA GM 21.A.101 Classification of design changes.</p> <p>We suggest the addition of the 'not-significant' guidance contained in GM 21.A.101 as a reason. Further, additional clarification may be required on CS-26 and applicability of 21.101 (CPR).</p>
response	<p>Not accepted</p> <p>It was not felt necessary to list the reasons for not complying with the latest certification specifications, and references to GM 21.A.101 would not have strengthened the case. In this case, the text simply describes how the issue could evolve if no regulatory action were taken.</p> <p>EASA does not systematically reissue NPAs and RIAs, unless fundamental and significant shortcomings in the text and reasoning are discovered.</p>

comment	<p>41 <span style="float: right;">comment by: <i>General Aviation Manufacturers Association</i></span></p> <p>Section 4.1.1 Safety Risk Assessment, Accident statistics, Figures 4.1, 4.4 and 4.5</p> <p>Occurrences data reported in Figures 4.1, 4.4 and 4.5 should be better presented as 'rates'.</p> <p>If the overall EU offshore activities were significantly reduced in the period 2013-2018, those figures could effectively present a misleading trend. We recommend that occurrence data is expressed as a 'rate' (dividing the total occurrences by the total hours effectively flown by the EU fleet).</p>
response	<p>Not accepted</p> <p>EASA is not in receipt of annual flying hours for EU rotorcraft fleets; therefore, it would not be possible to express the occurrence data as a 'rate'. It is hoped that in the future EASA will receive this information.</p>

#### 4. Impact assessment (IA) — 4.2. What we want to achieve — objectives

p. 27-28

comment	<p>1 <span style="float: right;">comment by: <i>Aeronautical Data Systems Inc.</i></span></p> <p>Section 4.2 Page 27: What we want to achieve</p> <p>There is inexpensive technology already developed using COTS (components off the shelf) that will cover this aspect and should not be overlooked.</p>
---------	--



	<p>There is a concentrated effort currently to “reactivate” the maritime and aviation communication between ship and aircraft. Testing automation which will allow a direct link from an aircraft into the existing maritime DSC system is currently under evaluation before the IMO/ICAO JWG.</p> <p>But there is already technology on the market to provide AIS data, voice communication using iPad technology, and provide automated distress messages without pilot input that should be considered as part of this document.</p> <p>Empowerment of the pilot to make these split decision choices are essential and available. Not providing this data will impede the rescue process. I strongly urge this committee to consider making AIS a part of all overwater flight.</p>
response	<p>Not accepted</p> <p>Please see the response to comment #2.</p>

comment	<p>42 <span style="float: right;">comment by: <i>General Aviation Manufacturers Association</i></span></p> <p>We consider Option 2 "best design practices" is too subjective. We suggest that the design assessment is too subjective.</p> <p>We suggests that the requirement for the design assessment to be deleted.</p> <p>The RMT working group agreed that water impact loads on the flotation system could not be defined, therefore Industry argued that this requirement should not be included. It requires a “subjective design review” to identify potential failure points / features. What has been suggested is flexible charge lines, lines not susceptible to “guillotine” type loads, etc. The problem with this is the subjectivity and therefore proving that you meet this requirement.</p>
response	<p>Not accepted</p> <p>Please see the response to comment #22.</p>

<b>4. Impact assessment (IA) — 4.3. How it could be achieved — options</b>	p. 28-41
--	----------

comment	<p>43 <span style="float: right;">comment by: <i>General Aviation Manufacturers Association</i></span></p> <p>Table 1 / 4.3.2 Option 2: Determination of robustness of the EFS</p>
---------	--



response	<p>The criteria on the basis of which the result of the assessment would be considered, such that design changes will be considered feasible/worth for introduction on newly produced helicopters are unclear. Items from (a) to (d) provide a guideline for the assessment but there is no criteria to select which design changes should be introduced on newly design helicopters.</p> <p>We suggest the removal of the request for the design assessment or define criteria.</p> <p>Not accepted</p> <p>Please see the response to comment #22.</p>
comment	<p>44 <span style="float: right;">comment by: <i>General Aviation Manufacturers Association</i></span></p> <p>Table 1 / 4.3.4 Option 4: Irregular wave testing</p> <p>Alternatively, it would be reasonable to expect existing EFS designs to be able to maintain upright stability in Sea State 4 (4m significant wave height)'. No rationale is presented within the document to support the assumption that use of the current EFS should be limited to sea state 4. There is no evidence within the document that the already certified EFS cannot offer proper performances up to the sea state for which they have been certified.</p> <p>We question why the use of sea state 4? Many discussions during the WG were about reducing by 1 sea state from the certified performance (for which also there was no solid argument).</p> <p>We suggest that the reference to "<i>...inability of certified EFS to provide the performance for which they have been certified...</i>" should be adequately substantiated or removed from the NPA.</p>
response	<p>Partially accepted</p> <p>This was an error in the NPA. The sentence should read: 'Alternatively, it would be reasonable to expect existing EFS designs to be able to maintain upright stability in Sea State 5 (4 m significant wave height). A limitation in the RFM for a helicopter type could be introduced as an alternative to conducting the wave tank testing using the irregular-wave criterion and methodology. This would subsequently impose an operational limitation on operators, as they would not be able to operate in sea conditions that are in excess of Sea State 5.'</p> <p>This reduction to 'Sea State 5' was not proposed in the NPA.</p> <p>Please, see also the response to comment #64.</p>
comment	<p>45 <span style="float: right;">comment by: <i>General Aviation Manufacturers Association</i></span></p> <p>Table 1 - Option 2 "best design practices"</p> <p>The statement "<i>best design practices</i>" is too subjective. We believe the requested design assessment is too subjective.</p>

response	<p>We suggest that the requirement for the design assessment to be deleted.</p> <p>The RMT working group agreed that water impact loads on the flotation system could not be defined, therefore Industry argued that this requirement should not be included. It requires a “subjective design review” to identify potential failure points / features. What has been suggested is flexible charge lines, lines not susceptible to “guillotine” type loads, etc. The problem with this is the subjectivity and therefore proving that you meet this requirement.</p> <p>Not accepted</p> <p>Please see the response to comment #22.</p>
comment	<p>46 <span style="float: right;">comment by: <i>General Aviation Manufacturers Association</i></span></p> <p>Table 1 - Automatic Arm and Automatic Deploy</p> <p>We believe that the "Automatic Arm" and "Automatic Deploy" should be evaluated separately. Both features are combined and assessed together. Whereas Automatic Deployment is common, Automatic Arming is not, and is much more complex and costly.</p> <p>We recommend that "Automatic Arm" and "Automatic Deploy" should be evaluated separately. A recommendation based on safety incidents should provide separate recommendations for an automatic deployment and arming feature. Whereas automatic arming is fully supported, however, the more complex change is with the development of a safe and reliable system for automatic arming in combination with automatic deployment. By grouping the two features together it has skewed the data to show that both features are supported by the cost benefit data. In isolation, the CBA would likely not support the auto-arming feature.</p>
response	<p>Accepted</p> <p>Please see the response to comment #25.</p> <p>Removing the benefits from the auto-deployment of the emergency flotation system (EFS) from the cost–benefit analysis still results in a positive analysis for the auto-arming of the EFS (i.e. no pilot action).</p>
comment	<p>47 <span style="float: right;">comment by: <i>General Aviation Manufacturers Association</i></span></p> <p>Section 4.3.1</p> <p>Please clarify the applicability as most changes identified on Part 26 and CS 26 specifically identify CAT.IDE.H.320(a) which is limited to helicopters operated in PC 1 &amp; 2.</p>
response	<p>Noted</p> <p>Please see the response to comment #16.</p>

comment	<p>48 <span style="float: right;">comment by: <i>General Aviation Manufacturers Association</i></span></p> <p>Section 4.3.1.1</p> <p>We believe the effort required to open each emergency ‘egress route’ shall not be exceptional mandated for CS-27 Category A and CS-29 only. The NPA introduces maximum effort criteria to open each egress route openings based on the fact the current Air OPS Regulation does not define the criteria for an exit to be ‘openable’. Furthermore, the Part 26 applicability is linked with CAT.IDE.H.320, while the rules for openings are located in SPA.HOFO.165, with a different scope of applicability. It is therefore arguable to set such a criteria in the Part 26.415 which relates to CAT.IDE.H.320(a) applicability. In other terms, all operators subject to CAT.IDE.H.320(a) requirement are subject to SPA.HOFO.165.</p> <p>It is suggested that the criteria for effort required to open other than certified emergency exits are directly introduced at Air OPS level in AMC to SPA.HOFO.165(h), instead of being published in GM to Part 26 regulation?</p>
response	<p>Not accepted</p> <p>For proportionality reasons, this requirement was deliberately limited to CS-27 Category A and CS-29 rotorcraft.</p> <p>The ability for an exit to be ‘openable’ is not determined by the type of operation performed by the rotorcraft. This was the reason why this requirement was linked to point CAT.IDE.H.320, and not just point SPA.HOFO.165.</p> <p>Furthermore, it would not be appropriate to include design criteria in the AMC to SPA.HOFO.165(h). The most appropriate place to provide such criteria is Part-26 / CS-26 as this relates to the design of the rotorcraft.</p>
comment	<p>49 <span style="float: right;">comment by: <i>General Aviation Manufacturers Association</i></span></p> <p>Section 4.3.1.1</p> <p>The first sentence is misleading as the requirements in Part 26 do not cover ALL aircraft for which ditching approval is required. According to the proposed changes to Part 26, not all aircraft that require ditching approval are affected.</p> <p>This sentence should be modified to read: "<i>The following will be required for certain over water helicopter operations under CAT, NCC or HOFO.</i>" Example: Yellow and black markings are only required for PC 1 &amp; 2 with ditching. Life raft tethering is required based on time over water (not specifically ditching). Remote Life Raft Deploying is based on operations in accordance with SPA.HOFO.</p>
response	<p>Noted</p> <p>EASA does not systematically reissue NPAs and RIAs, unless fundamental and significant shortcomings in the text and reasoning are discovered.</p>



It is noted that the head sentence of the first paragraph of Section 4.3.1.1 is not fully explicit in the description of the applicability of the required design changes. It should also be noted that Section 4.3.1.2 also describes the split between requirements for 'ditching' and requirements for 'emergency flotation system'.

Detailed information on the applicability of design changes under Option 1 can be found in the regulatory text in Section 3, and the description in Section 4.3.1.1 is sufficient for discussion at the level of the RIA.

comment 50 comment by: *General Aviation Manufacturers Association*

Section 4.3.1.2

Items listed under 4.3.1.2 are not all for >10 min from land. Per Part 26.420(c), life preservers are only required for operations IAW CAT.IDE.H.320(a) (i.e. PC 1 & 2).

We suggest the removal of 'life preservers' from the list.

Response Noted

EASA does not systematically reissue NPAs and RIAs, unless fundamental and significant shortcomings in the text and reasoning are discovered.

It is noted that the head sentence of the first paragraph of Section 4.3.1.1 is not fully explicit in the description of the applicability of the required design changes.

Detailed information on the applicability of design changes under Option 1 can be found in the regulatory text in Section 3, and the description in Section 4.3.1.1 is sufficient for discussion at the level of the RIA.

Comment 51 comment by: *General Aviation Manufacturers Association*

Section 4.3.2 Determination of robustness of the EFS

Item (b): the meaning of redundant in the AMC should be clarified to indicate that it refers to pipes/hoses and not to the quantity of gas necessary to inflate floats. Full redundant systems are likely not the intent of this and would not necessarily increase the robustness of the systems due to the relevant increase of complexity of design and the number of components.

We suggest that the statement be reword to read "...use redundant or distributed piping/hose assemblies...".

Response Not accepted

Section 4.3.2 describes and references the AMC to CS 29.801(c); therefore, in this context, it is a direct citation from the AMC and it would not be appropriate to amend this text as any change would not reflect what is actually stated in the AMC.

In addition, the AMC to CS 29.801(c) paragraph (c)(2)(ix) provides additional indication of redundancy.



EASA does not systematically reissue NPAs and RIAs, unless fundamental and significant shortcomings in the text and reasoning are discovered.

Comment	<p>52 comment by: <i>General Aviation Manufacturers Association</i></p> <p>Section 4.3.2</p> <p>Option 2: "best design practices" is too subjective.</p> <p>We suggest that the requirement for the design assessment to be deleted.</p> <p>Further, previous service history could be used in lieu of a complete design assessment.</p> <p>The working group agreed that water impact loads on the flotation system could not be defined, therefore Industry argued that this requirement should not be included. It requires a "<i>subjective design review</i>" to identify potential failure points / features. What has been suggested is flexible charge lines, lines not susceptible to 'guillotine' type loads, etc. The problem with this is the subjectivity and therefore proving that you meet this requirement.</p>
Response	<p>Not accepted</p> <p>Please see the response to comment #22.</p>

comment	<p>53 comment by: <i>General Aviation Manufacturers Association</i></p> <p>Section 4.3.2</p> <p>The second to last paragraph implies the requirement is for all helicopter requiring ditching approval. Part 26.430 is only applicable for PC1 &amp; 2 in a hostile environment &gt; 10 mins from land.</p> <p>We suggest that the second to last paragraph should be revised to state the requirements are for aircraft that operate per CAT.IDE.H.320(a).</p>
response	<p>Not accepted</p> <p>Please see the response to comment #17.</p>

comment	<p>54 comment by: <i>General Aviation Manufacturers Association</i></p> <p>Section 4.3.3 Automatic arming and deployment of the EFS</p> <p>We believe the statement: "<i>It is essential that a means of automatically arming and disarming the EFS is provided</i>" is not consistent with the changes introduced in amdt. 5. The requirement is not for automatic arm but for no action of the pilot to arm the flotation and liferaft system when in flight.</p>
---------	---

response	<p>We suggest that this statement should read: "It is essential that no action of the pilots for arming and disarming the EFS is required during flight".</p> <p>Noted</p> <p>Although this text does not exactly quote the text from CS-29, it is believed that for the purposes of a RIA, this text describes the intent of the option and is appropriate for explanatory purposes. The text in the other paragraphs clearly states that the design solution should ensure that 'no action of the pilots for arming and disarming the EFS is required during flight'.</p> <p>EASA does not systematically reissue NPAs and RIAs, unless fundamental and significant shortcomings in the text and reasoning are discovered.</p>
comment	<p>55 <span style="float: right;">comment by: <i>General Aviation Manufacturers Association</i></span></p> <p>Section 4.3.3</p> <p>We believe the Automatic Arm and Automatic Deploy should be evaluated separately. Both features are combined and assessed together. Whereas Automatic Deployment is common, Automatic Arming is not.</p> <p>We suggest that the Automatic Arm and Automatic Deploy should be evaluated separately. The recommendation is based on safety incidents, provide for separate recommendations for automatic deployment and arming. Whereas automatic arming is fully supported, the more complex change is with the development of a safe and reliable system for automatic arming in combination with automatic deployment. By grouping the two features together it has skewed the data to show that both features are supported by the cost benefit data. In isolation, the CBA would likely not support the auto-arming feature.</p>
response	<p>Accepted</p> <p>Please see the response to comment #46.</p>
comment	<p>56 <span style="float: right;">comment by: <i>General Aviation Manufacturers Association</i></span></p> <p>Section 4.3.3</p> <p>We believe the example for automatic arming may not meet the reliability requirements in the NPA and therefore is not a good example.</p> <p>Information shared during the WG implied that the cited example would not meet the reliability required per the NPA and therefore is not a good example.</p>
response	<p>Not accepted</p> <p>It is believed that the comment relating to a design solution in this Section is the following:</p>

*'Additionally, one helicopter type is known to have a system for automatic arming and disarming of the EFS ('auto-arm') based on flight speed.'*

This is not cited in the RIA as an 'example', but instead a statement of fact that for the purposes of the RIA (and the cost-benefit analysis), 5 helicopter types (4 with 'no restrictions' and 1 with 'arming/disarming' based on flight speed) would not need to be modified.

comment 57 comment by: *General Aviation Manufacturers Association*

Section 4.3.5.3

The second item applicability is not correct. The item is NOT applicable for non-CAT Part 27, whereas applicability states it is.

We suggest that the applicability is revised.

response Not accepted

EASA individually reviewed all design specifications that were included in Amendment 5 to CS-27 and CS-29 for their retrospective application. EASA considered CS 27.805(c), which is only applicable to CS-27 non-Category A rotorcraft, for retrospective application and decided that it would not be appropriate because only a limited number of helicopters would benefit from this safety improvement.

For CS-27 Category A rotorcraft and CS-29 rotorcraft, this requirement is covered by CS 29.811(h).

Therefore, the statement below, in the context of CS 27.805(c), is true:

*'CS-27 non-Category A only; not applicable to CS-27 Category A and CS-29 rotorcraft. Reference CS 27.805(c).'*

#### 4. Impact assessment (IA) — 4.5. What are the impacts

p. 42-51

comment 58 comment by: *General Aviation Manufacturers Association*

Section 4.5.4.4

We believe tha the Automatic Arm and Automatic Deploy features should be evaluated separately. The benefits of auto-deployment and auto-arming are independent and should be evaluated separately.



response	<p>The cost for the development of the auto-arming feature is significantly more than the cost for auto-deployment, yet the benefits for auto-deployment are greater. In isolation, the CBA would likely not support the auto-arming feature. We suggest that the proposed approach is revised accordingly.</p> <p>Accepted</p> <p>Please see the response to comment #46.</p>
comment	<p>59 <span style="float: right;">comment by: <i>General Aviation Manufacturers Association</i></span></p> <p>Section 4.5.4.4</p> <p>The quantity or number of aircraft types with the auto-arm feature is not consistent. Previous comments have stated that one type is known to have auto-arming, whereas the CBA states five. Which is correct? Using 15 aircraft types makes the CBA marginal. Just a 10% change in the assumed development costs would make the CBA negative. Please review using improved data and adjust accordingly.</p>
response	<p>Not accepted</p> <p>It is clearly explained in Section 4.3.3 (page 34) that there are 5 rotorcraft types that already comply with the requirement for no pilot action to be necessary to arm the EFS because they have either no flight envelope restrictions on the deployment of the EFS (4 cases) or an 'auto-arm' system has been installed (1 case).</p> <p>As part of the public consultation of the NPA, stakeholders were invited (page 51) to provide data if they felt that the economic data used in the cost–benefit analysis was not appropriate.</p> <p>No alternative data was provided on the rotorcraft fleet; therefore, 16 rotorcraft types have been identified that will need to be modified.</p>
comment	<p>60 <span style="float: right;">comment by: <i>General Aviation Manufacturers Association</i></span></p> <p>Section 4.5.4.4</p> <p>We believe as OEMs that the development costs for Level A SW are low. A more accurate cost for development of Level A SW on an existing platform is closer to 1M Euros, plus hardware and modification design costs. Therefore, the cost of 1.5 M Euros should be used for the CBA. If this is the case the CBA is negative. Please review and adjust accordingly.</p>
response	<p>Not accepted</p> <p>Please see the response to comment #25.</p>
comment	<p>61 <span style="float: right;">comment by: <i>General Aviation Manufacturers Association</i></span></p> <p>Section "4.5.1.5 Option 4: Irregular wave testing</p>

	<p>The NPA reports a "<i>Probability of a sea condition greater than Sea State 4: 0.098*</i>", referencing to previous NPA 2016-01. In NPA 2016-01, the probability of exceeding SS4 is actually 29.4% (<u>0.294</u>) (ref.: Table 4 of NPA 2016-01 (page 205). The risk of capsizes should therefore be 1e-6/FH rather than 3.33e-7/FH.</p> <p>We believe the referenced input data to be incorrect.</p> <p>Please suggest a further review the Table 4 of NPA 2016-01 for appropriate input data and adjust calculation for capsizes risk accordingly.</p> <p>Note: Extract from NPA 2016-01 (pag. 205): "<i>Probability of a sea condition greater than Sea State 4: 0.098*</i>"</p> <p>Note*: Reference NPA 2016-01 was used for consistency between the RIAs of Phase 1 and Phase 2. Based upon a review of the occurrences since NPA 2016-01, it was established that there was no need to adjust the probability of a ditching event.</p>
response	<p>Partially accepted</p> <p>The calculation should be based on the probability of a sea condition of greater than Sea State 5 (significant wave height Hs = 4.0m).</p> <p>Please see comment #62 for the corrected calculation.</p>
comment	<p>62 <span style="float: right;">comment by: UK CAA</span></p> <p>Attachment <a href="#">#2</a></p> <p><b>Page No:</b> 45</p> <p><b>Paragraph No:</b> 4.5.1.5 Option 4: Irregular Wave Testing</p> <p><b>Comment:</b> The probability of a sea condition greater than Sea State 4 quoted of 0.098 appears to be incorrect. With reference to Table 4 on page 205 of EASA NPA 2016-01, the correct probability is 0.294. It is suspected that the content is a misunderstanding of an analysis presented by CAA while a member of RMT.0120. In addition, the derivation of the assumed number of fatalities per capsizes is not stated.</p> <p><b>Justification:</b> It is important that the derivation of the probability of capsizes and number of fatalities per capsizes are clearly explained as these figures can significantly affect the outcome.</p> <p><b>Proposed Text:</b> 4.5.1.5 Option 4: Irregular Wave Testing</p> <p>Based on evidence derived from irregular wave testing of existing helicopter types (see <a href="#">CAA Paper 2005/06</a> (right click link to open or see attached) Appendix A), the capsizes threshold of existing helicopters is estimated to be a maximum of a</p>

significant wave height (Hs) of 4.0 m (or Sea State 5). Assuming that the probability of capsize at wave heights up to and including Hs = 4.0 m meets the CS 27/29 Amendment 5 target of 0.03, that the probability of capsize at greater wave heights is 1.0, and that operations do not take place when Hs ≥ 6.0 m:

- Probability of capsize following a ditching in Hs ≤ 4.0 m = 0.03
- Probability of capsize following a ditching in 4.0 m ≤ Hs ≤ 6.0 m = 0.068 (see Table 1 on page 212 of NPA 2016-01)
- Overall probability of capsize following a ditching = 0.03 + 0.068 = 0.098

Applying this probability to the exposure assumed in NPA 2016-01 (for consistency):

- Probability of ditching event = 3.4e-6 per FH
- Probability of capsize = 3.33e-7 per FH

Based on typical CS-29 seating arrangements (S-92 = six rows of 3, AW139 = three rows of 4) and:

- all passengers seated next to an exit will successfully egress
- 50% of the remaining passengers will also successfully egress the helicopter with the use of EBS

The number of fatalities assumed per capsize is 3.

This was input to the CBA and was assumed as the safety benefit of preventing fatalities (caused by drowning) due to the capsize of a ditched helicopter, based upon the probability of the helicopter ditching used for NPA 2016-01.

response

Accepted

The overall capsize probability of 3.33e-7/FH and number of fatalities per capsize remains unchanged from the NPA. Therefore, no modification to the cost–benefit analysis is necessary.

comment

63

comment by: UK CAA

**Page No:** 50

**Paragraph No:** 4.5.4.5 Option 4: Irregular Wave Testing

**Comment:**

The figure of 2.8, for the number of prevented fatalities for the period 2022 to 2048 appears to be too low.

We recommend that the CBA needs to be reworked by EASA

**Justification:**

Pre-Covid, the UK fleet of 102 aircraft was flying approximately 80,000 flight hours per year. If the European fleet of 337 aircraft has the same utilisation, a total of 264,000 hours (or 2.64 x 10e5) are flown each year. Given a capsize rate of 3.33e-7 per FH and 3 fatalities per capsize gives 0.264 fatalities per year or 6.9 fatalities over



response	<p>the 26-year period 2022 to 2048. This is more than double the figure presented and would more than halve the cost per prevented fatality.</p> <p>Not accepted</p> <p>The calculation of the cost–benefit analysis is not as straightforward as suggested by the commentator for the following reasons:</p> <ul style="list-style-type: none"> <li>— The model calculates benefits based on production cut-in. Therefore, the benefit is not applied to already in-service rotorcraft, but only to those that enter service as from the applicability date.</li> <li>— A full retrofit analysis was not carried out, which would result in benefits similar to those of the UK CAA calculation.</li> <li>— The cost–benefit analysis also includes consideration of newly certified aircraft entering service, which are fully compliant, leading to the retirement of the older fleets.</li> </ul>
comment	<p style="text-align: right;">comment by: UK CAA</p> <p><b>64</b></p> <p><b>Page No:</b> 50</p> <p><b>Paragraph No:</b> 4.5.4.5 Option 4: Irregular Wave Testing</p> <p><b>Comment:</b></p> <p>The assumptions employed for the CBA do not consider the alternative approach of downgrading existing ditching certifications not performed to the CS 27/29 Amendment 5 procedure from Sea State 6 (Hs = 6.0 m) to Sea State 5 (Hs = 4.0 m).</p> <p><b>Justification:</b></p> <p>Downgrading the ditching certification may have a much smaller economic impact.</p> <p><b>Proposed Text:</b></p> <p>It is recommended the following is added to the bottom of page 50:</p> <p>“Alternatively, the certificated ditching performance of existing helicopters could be reduced from Sea State 6 to Sea State 5.”</p> <p>In addition, it is also recommended that EASA should perform a CBA for this alternative approach. It has been estimated that downgrading existing ditching certifications from Sea State 6 to Sea State 5 would lead to a loss of annual revenue of approximately 0.5%. Details are available if required.</p>
response	<p>Not accepted</p> <p>This would result in an operational restriction, which is not within the scope of rulemaking nor within the scope of this RMT which focuses on the amendments to Part-26 / CS-26 to address the airworthiness aspects of helicopter ditching.</p>





### 3. Appendix — Attachments

 [cold water survival.pdf](#)

Attachment #1 to comment [#3](#)

 [CAA PAPER 2005-06.PDF](#)

Attachment #2 to comment [#62](#)

