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Comment Response Tool

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Title	Helicopter Vibration Health Monitoring
NPA Number	NPA 2013-22

UK CAA (European.Affairs@caa.co.uk) has placed **5** unique comments on this NPA:

Cmt	Segment description	Pag	Comment	Attachm
3	(General Comments)	0	**Page No:** All **Paragraph No:** All **Comment:** General comments regarding HUMS (Health and Usage Monitoring System) regulatory action: 1. When originally introduced, it was expected that large helicopters should not be able to comply with the Design Assessment requirement without HUMS; however, HUMS was not explicitly required in order to avoid prescription. If the Design Assessment were being applied rigorously then any rule change to include onshore helicopter operations in an explicit HUMS mandate should have no effect. 2. Note that the recently completed UK CAA review of technical accidents shows evidence of an increasing prevalence of design/certification related causes in the technical accidents in which rotor and transmission failures predominate (i.e. the main target areas for HUMS). 3. Not mandating HUMS for onshore large helicopters creates an inconsistency – emergency landings onshore can be just as hazardous or even more so than offshore; e.g. over cities, forests, mountains. On what basis is a lower safety standard justifiable/acceptable?	
4	2. Explanatory Note — 2.1. Issue — 2.1.1. Overview of the issues to be addressed	4	**Page No:** 4 **Paragraph No:** 2.1 **Comment:** The original requirement was developed as a JAA task to accommodate current VHM requirements adopted by the UK and Norway under operations regulations for large helicopters operating in the hostile	

			areas of the North Sea and elsewhere, when conducting offshore operations in support of the oil and gas industry. Additionally it was recognised that there would be a safety advantage if the fitment and operation of VHM systems was extended to all complex helicopters whether operated over water or not. This would reflect the recommendation made within ICAO Annex 6 Part III. However, the principle used for extending the scope of VHM was very much predicated on future fitment by OEMs rather than retrospective fitment, due to costs and difficulties in developing the appropriate technologies. The NPA acknowledges this and recommends that for other than offshore activity (covered by NPA 2013-10 HOFO) the fitment of VHM should be encouraged on a voluntary basis by EHEST. The UK CAA supports Option 2 but it is felt that this should be aimed more at the OEMs to encourage them to encompass the benefits of VHM and other health monitoring systems into their aircraft, in order to provide safety and maintenance enhancements for future helicopters wherever they are operated. The aim should also be to extend the benefits to Part-27 helicopters too. **Justification:** Best use of technology to improve the safety and airworthiness of future helicopters.	
5	2. Explanatory Note — 2.1. Issue — 2.1.3. Safety risk assessment — (a) General	4 - 5	**Page No:** 4 to 8 **Paragraph No:** 2.1.3 **Comment:** The following general comments on the Safety Risk Assessment are made: 1. The sample size in terms of flight hours for the onshore large helicopter fleet is very small in statistical terms, so any conclusions drawn need to be treated with caution. 2. Technical accidents are the same wherever they occur so isolating onshore operations and shrinking the data set is unhelpful and illogical. 3. The Safety Risk Assessment should have included all rotorcraft of MTOW >3,175kg or MOPSC >9 in order that it be based on the largest representative data sample available.	
6	2. Explanatory Note — 2.1. Issue — 2.1.3. Safety risk	4 - 5	**Page No:** 4 **Paragraph No:** 2.1.3 (a) **Comment:** There is significant circumstantial evidence of	

	assessment — (a) General		a positive safety benefit of HUMS. **Justification:** Analysis of the accident data for UK offshore helicopter operations from 1976 to 2012 covering 3.5 million flight hours shows a clear and significant reduction in technical accidents, coincident with the voluntary introduction of HUMS by the industry in the early 1990s. **Proposed Text:** Modify the last sentence of the first paragraph to read: “Although it is difficult to conclusively quantify whether a safety improvement was attributable to HUMS, there was a significant reduction in the technical accident rate coincident with the introduction of HUMS in UK offshore oil and gas support operations.”	
7	2. Explanatory Note — 2.4. Analysis of impacts — 2.4.5. Proportionality issues	10	**Page No:** 10 **Paragraph No:** 2.4.5 **Comment:** The proposition that option 1 “may create an undue higher burden for small operators in comparison to larger operators.” is questionable. **Justification:** The cost per aircraft is essentially the same regardless of fleet size, and the burden of supporting HUMS would fall to the rotorcraft OEM if HUMS were to be mandated. **Proposed Text:** Modify the text to read: “The potential cost impact of option 1 should not create an undue higher burden for small operators in comparison to larger operators. This is therefore a neutral factor for all three options.” Also, Table 8 should be amended accordingly.	

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