EASA	COMMENT RESPONSE DOCUMENT
	EASA PAD No. 14-089 **[Published on 30 May 2014 and officially closed for comments on 20 June 2014]**

Commenter 1: Civil Aviation Bureau of Japan (JCAB) – Hiroshi Yoshigai – 17/06/2014

Comment # 1

My name is Hiroshi Yoshigai, I am in charge of rotorcraft program management in Civil Aviation Bureau of Japan(JCAB). JCAB has an inquiry and some concerns for this PAD, the detailed ones are follows.

/Inquiry/

JCAB would like to clarify the reason why AS365N2, EC155B1, AS332L2 and MBB-BK117 C-2 etc. are applied for this PAD based on EASA review. According to this PAD, these type of rotorcraft which are installed EFS are operated primarily for offshore or other over-water operation. However, JCAB believes that there are other rotorcrafts such as EC135 which is installed EFS and EC135 can operate for offshore or other over-water operation similar to applicable type of rotorcrafts.

/Concerns/

JCAB believes that EASA position seems to have a point. However, the guidance of FAR25.801 in FAA AC29-2C states “demonstration of compliance with the ditching requirements for at least sea state 4 water conditions is considered to satisfy the reasonably probable requirement” and “the information pertinent to the limitations applicable to the ditching approval should include the range of sea state conditions that has been demonstrated for water entry and flotation stability.”, which does not require explicitly sea state condition to be included in the limitation section of RFMS.

JCAB has a concern for demonstrated sea state to be included in the limitation section of the RFMS because operators might interpret information on demonstrated sea state in a different way. For example, some operators might interpret such information as prohibiting operation for offshore in the clear weather(i.e. good visibility) but steep wave over the demonstrated sea state, but other operators not. In addition, the operator might be imposed the over requirement depend on the result of this PAD because these rotorcrafts doesn’t ditch normally unless this one is certified as a sea multi turbine rotorcraft.

EASA response:

/Inquiry/

The EASA AD aims at addressing the helicopter population at highest risk which, as explained in paragraph Reason of the PAD, is deemed to be the Large Rotorcraft (i.e. CS-29 products) as those consist in the helicopter fleet primarily operated for offshore public transport and other commercial air transportation or services over water. In that respect, smaller helicopters have been assessed as a less critical fleet. However, the latter are still under consideration and EASA may decide to take further actions for them.

/Concerns/

The comment is disagreed: it is EASA reading of AC29-2C Ch2, AC 29.801, that the demonstrated sea state should be entered in the RFM as an information pertinent to the limitations of the ditching certification. Such an understanding of the guidance material is shared by the main European helicopter manufacturers as

the demonstrated ditching sea state is referenced, with texts equivalent to those proposed by the PAD, in the Limitations Section of the RFM of their most recently certificated helicopters (e.g. AW139, AW189 and EC175, models which have therefore been excluded from the PAD Applicability). Other commenters also concur with similar opinion in expressing their support to the EASA initiative for this PAD (see below comments #4 from EHA and #5 from Airbus Helicopters).

Commenter 2: NHV – Mark Boumans – 19/06/2014

Comment # 2

With reference to the PAD No 14-089, NHV would like to inform EASA concerning the implications of the proposed PAD.

After carefully studying the PAD, NHV acknowledges the common interest to increase the Industry Safety Standards and appreciates the effort to streamline the Flotation Sea state aircraft certification to the actual operational use of the helicopter. This is the first time the "Authority" (EASA or its predecessors) actually makes this link (JAR-OPS/EU-OPS).

However there is no direct link between the PAD and the Certification Specification of EASA (CS-29). Therefor the development of an STC is questionable; to what standard (in terms of CS29, G-load impact, speed, attitude etc) should the industry prove compliance? Before such AD can be issued the standard should be first be defined in the CS-29 to offer OEM and Part-21 organisations the opportunity to develop alternatives.

The applicability is limited to only 3 OEM's and a limited amount of aircraft types, we kindly request EASA to explain the exclusion of the other OEM's and airframes (Such as Bell 212/412, Sikorsky S76/S92/S61 , AgustaWestland AW139/AW189, Airbus Helicopters EC135).

Based on the suggested implementation date (14 days after release of the AD), the PAD will have great operational impact of the affected helicopters and therefor creating an Commercial and in the end Safety Risk.

Currently NHV has a fleet consisting of 11x AS365 Dauphin, 6x EC155B1 & 2x AS332L2 helicopters forming the majority of our (offshore) fleet. Among our customers and mission are:

1) Oil & Gas Transport

2) Pollution Control (Governmental)

3) Piloting Services (Governmental)

4) Search & Rescue (Governmental)

Some of these Operations are directly linked to bad weather conditions and therefor are directly affected (and as such should be stopped), after the implementation of the PAD.

As some of the operations are of public interest (such as SAR), there is a direct link with the safety of all people offshore. Due to the time constraint, neither NHV nor the competition will be able to offer alternatives.

Due to the fact that the proposed PAD appendices will be added to the aircraft limitation section, the limitation are not "only" affecting the Commercial Air transport Operations (as is the clear intention of the PAD), but also affect the "Non" AOC related operations.

After release of the PAD, we immediately involved Airbus Helicopters too jointly offer an acceptable solution. Attached you will find the proposed Roadmap for increasing the AS365/EC155 sea state certification.

According to Airbus Helicopters the current demonstrated afloat ability is already for the AS365 at Seastate 7 and for the EC155 Seastate 6!

As Safety is the most important core value in NHV's strategy, NHV support the PAD proposal, however suggest to include a realistic time frame to offer the OEM's sufficient time to demonstrate the Seastate capability of the affected airframes. Next to the time frame, we expect that the CS-29 needs to be updated and approved to offer a level playing field for all OEM's and review the current seastate certification against the CS29.

As conclusion NHV request EASA to suggest a reasonable implementation date or trajectory of the PAD (in close cooperation with the OEM's) and to clearly state the type of operation in the limitation section to exclude operations such as SAR etc.

EASA response:

The comment is partially agreed.

1. *Although not literally quoted in the PAD, the airworthiness requirement for ditching addressed by the PAD is JAR/FAR/CS 29.801 for which the associated guidance material under consideration is AC 29.801 of AC29-2C Ch2 dated 25/04/2006 (for further details, see the Regulations analysis below provided in comment #5 from Airbus Helicopters). This is the current applicable certification standard for approval of whatever Emergency Flotation System as optional kit for ditching provision from the helicopter Manufacturer or by a Supplemental Type Certificate (STC).*
2. *The other non-EU Large Rotorcraft have been similarly addressed by another distinct PAD as per EASA policy on Airworthiness Directives for foreign products. Final EASA ADs for EU and non-EU large rotorcraft must have the same effective date.*
3. *The AW139 and AW189 models have been excluded from the Applicability of the PAD as those helicopters already have the demonstrated ditching sea state correctly referenced in the Limitations Section of their RFM, with texts equivalent to the proposals of the PAD. For smaller helicopters like the EC135, EASA may decide to take further actions (see EASA response to comment #1).*
4. *With reference to Art.1.(2)(a) of basic Regulation (EC) No. 216/2008, certain operations are excluded by default from the scope of responsibility of EASA. Clearly stating exclusion of those operations like SAR, etc. is therefore unnecessary as products, parts, appliances, personnel and organisations are not subject to EASA regulatory framework "while carrying out military, customs, police, search and rescue, firefighting, coastguard or similar activities or services".*
5. *The final EASA AD is modified to allow implementing flexibility for the update of the RFM through increase of the compliance time initially proposed within 30 days in the PAD.*

Commenter 3: Heli-Union – Armelle Tarrieu – 19/06/2014

Comment # 3

Further to notification of Proposal to issue an Airworthiness Directive PAD n° 14-089 dated 30/05/2014, please find Heli-Union comments relative to this PAD.

Heli-Union is a French operator founded in 1961 with past experience in more than 40 countries worldwide and present today in 10 countries : Angola, Argentina, Australia, Cameroun, Congo, Gabon, Libya, Myanmar, Nigeria and Uruguay.

Heli-Union has logged over 1,200,000 flight hours and operates today more than 30 helicopters : 2 EC225, 2 AS332L1, 7 S76C++, 14 AS365 Dauphin N3, 5 AS365 Dauphin N, 2 EC145 and 1 AS350 B3 and on firm order for 2014 : 1 more EC225 and 4 EC175. The 2013 annual turnover is 110 Millions €.

Heli-Union is very concerned by this PAD as 100% of operations are offshore and the major part of our fleet is constituted by Dolphin (19 of 33 helicopters) plus the 2 EC145.

We have estimated that the issuance of this AD will have as a consequence the cancellation of more or less 25 % of our flights (those between Sea State 5 and 6), that will constitute a catastrophic loss of revenue for Heli-Union. Before this PAD, no information except compliance with FAR/CS 29 certification was mentioned in the

Airbus Helicopters (AH) RFM, it means Emergency Flotation System (EFS) certification for at least Sea State 4.

Following our meeting with AH on 11/06/2014, we were informed by AH that they are working for upgrade to Sea State 6 of EFS certification of EC155 first and will do it after for the AS365 N3, then AS365 N and then EC145.

AH estimate that the issuance of a SB will probably take place not before 3 to 4 months for the EC155. The application of the modification will take several additional months, so Heli-Union requests that the effective date of the applicability of the AD is postponed sufficiently to take in consideration the feasibility of the SB and its application to retrofit the concerned fleet of at least 21 helicopters, it means applicability not before 2015 at least.

Additionally, AH informed Heli-Union about another PAD relative to non European helicopters, and in this case, Heli-Union will be impacted in the same way for the 7 S76C++.

EASA response:

The comment is partially agreed.

See EASA response to comment #2, point 2. (distinct PAD for non-EU Large Rotorcraft issued) and point 5. (some implementing time flexibility is introduced in final EASA AD).

Commenter 4: European Helicopter Association (EHA) – Elisabetta Dalla Benetta – 20/06/2014

Comment # 4

With reference to the PAD 14-089 concerning the EASA proposal to issue an AD which requires amendment of the applicable RFM or RFMS to incorporate information pertaining to the sea state conditions demonstrated during EFS certification as helicopter ditching provisions, EHA would like to comment that, although agreeing with the proposal, a suitable/feasible implementing time should be allowed in order not to create unnecessary disruptions in the operations. This also in light of the fact that we believe there have been no real accidents where the sea state certification has contributed to fatalities.

EASA response:

1. *EHA's agreement with the EASA initiative for this PAD is noted.*
2. *See EASA response to comment #2, point 5. (some implementing time flexibility is introduced in final EASA AD).*

Commenter 5: AIRBUS HELICOPTERS – Thierry Marquet – 20/06/2014

Comment # 5

Comments addressed by AIRBUS HELICOPTERS regarding this Proposal for an Airworthiness Directive

1. Risk of unfair competition

For avoiding any unfair competition between European and non-European manufacturers, AIRBUS HELICOPTERS (AH) consider that the EASA AD has to cover consistently all manufacturers with the same effectivity date.

2. Not immediate application of Sea State Limitation

§29.801 “Ditching” introduced under amendment 12 in 1976 states that “it must be shown that, under reasonably probable water conditions, the flotation time and trim of the rotorcraft will allow the occupants to leave the rotorcraft and enter the liferafts”.

§29.563 “Structural ditching provisions” amendment 29-30 in 1990 added specific structural conditions to be considered to support the overall ditching requirements of § 29.801 regarding water entry phase.

AC29 mentions that FAA/AUTHORITY has determined that a sea state 4 is representative of reasonably probable water conditions to be encountered

AC29-2A, in 1995, stated that the Rotorcraft Flight Manual (RFM) should include (among others) “the information pertinent to the limitations applicable to the ditching approval”

AC29-2C, in 2006, stated that the Rotorcraft Flight Manual should include (among others) “the information pertinent to the limitations applicable to the ditching approval should include the range of sea state conditions that has been demonstrated for water entry and flotation stability”

Even if none of the AIRBUS HELICOPTERS rotorcrafts listed in this PAD mentioned the sea state information in their RFM, it was a common understanding that the ditching performance was guaranteed under reasonably probable water conditions and all these rotorcrafts have been certified in this way.

AIRBUS HELICOPTERS fully support EASA in their decision to amend the corresponding RFMs and to provide the information of the certificated sea state but wish to consider the following elements :

- All aircrafts with a demonstrated ditching sea state 4 have demonstrated this sea state for the water entry under the conservative impact conditions given by the AC while in reality, pilot performing a ditching has most of the time (occurrence in daylight condition, ditching with power available on a twin-engine helicopter) the possibility to control the water entry and to reduce the impact energy

- Most of these aircrafts have demonstrated a higher sea state (sea state 6) for flotation after landing which is the period lasting several minutes during which stability has to be ensured to allow the occupants to leave the rotorcraft

- For the whole AH fleet in service addressed by the PAD, there has never been a controlled ditching with EFS normally inflated leading to fatalities

- All the AH aircrafts with a demonstrated ditching sea state 4 have been certified a long time ago without any state limitation inside the RFM

So AH request is to have a 6 month time from the AD effective date for introducing the certificated sea state in the Limitation Section of the RFM. In the meantime, AH propose to immediately inform the operators of the certificated sea state via a Safety Information Notice, which could be covered by an EASA Safety Information Bulletin, and will propose a roadmap to EASA in order to increase the certificated sea state. This analysis which has been already launched could lead to design change of the Emergency Flotation System or supporting structure, or definition of landing procedure, consideration of associated limitations.

3. Case of specific missions

Regulation n° 1108/2009 of the European Parliament states that the EASA regulation “shall not apply to products, parts, appliances, personnel and organisations while carrying out military, customs, police, search and rescue, firefighting, coastguard or similar activities or services”.

Introduction of a sea state limitation in the Limitation Section of the RFM of a helicopter type will interfere with these missions where the operator has to decide to fly or not, whatever the sea state conditions are. No pilot is allowed not to respect a FLM Limitation, so what could be said to an operator needing to overpass this limitation ?

An appropriate wording should be found in order to allow these operators to decide to fly or not over water, over the certificated sea state, without being out of law but AH consider that giving the information of the performance of the EFS in the FLM would be more appropriate.

EASA response:

The comment is partially agreed.

1. *Risk of unfair competition.*
   See EASA response to comment #2, point 2. (distinct PAD for non-EU Large Rotorcraft has been issued; final EASA ADs for EU and non-EU Large Rotorcraft must have the same effective date).
2. *Not immediate application of Sea State Limitation.*
   - *Airbus Helicopters' full support to the EASA initiative for RFM amendment to incorporate information pertaining to the demonstrated sea state is noted.*
   - *See EASA response to comment #2 point 5. (some implementing time flexibility is introduced in final EASA AD).*
3. *Case of specific missions.*
   As correctly reminded by the commenter, certain operations are excluded by default from the scope of responsibility of EASA. Pursuant to Art.1.(2)(a) of Basic Regulation (EC) No. 216/2008, as amended by Regulation (EC) No. 1108/2009, Operators and Pilots are not subject to the EASA rules, hence don't become outlawed from those, "while carrying out military, customs, police, search and rescue, firefighting, coastguard or similar activities or services". Approved flight manuals are not required to underline any opt-out disclaimer about EASA legal framework and it is not intended to just highlight it for this particular airworthiness instance. Furthermore, the Agency has no authority to allow operations that are out of its legal remit.

Commenter 6: European Helicopter Association (EHA) – Elisabetta Dalla Benetta – 20/06/2014

Comment # 6

After extensive consultation with the Off-Shore community, we would like to add an additional comment to our previous one which we kindly ask you to take into account.

EHA is asking EASA to consider the following arguments:

1. The area of non-OEM STCs should be explored (or at least acknowledged) in the AD as their existence may need to be brought into the scope of the AD.

2. We assume that National Operational Rules apply for flight over water operations; such latitude will potentially undermine the purpose of the AD in that we will continue to see the application of sea states defined on a national level – if the rationale behind sea state limitations is sound, it should ideally be applied equally across all jurisdictions covered by EASA.

3. For avoiding uncertainty between the different helicopter types constructed by European and non-European manufacturers, EHA requests that the EASA AD is required to cover all manufacturers with the same effectivity date.

4. Sea State is a flawed parameter as it takes no account of the wave steepness and so the rate of change of rolling/tipping moments. It is actually the steepness of the waves which causes capsizing rather than the amplitude. This is why the sector (Helicopter Operators Offshore) has gone to Heave Rate rather than Heave Amplitude for moving helideck limits.

5. There is an active RMT looking into these specific topics, in which they will change from Sea State to SWH, which has happened in UK already and will be reflected in the NPA of the RMT. There is also the requirement for a revision to the requirements for frequency spectrum testing. Steve Rowe (ex BMT Fluid Mechanics and a long time provider of oceanographic data and testing input) is a member of the RMT working group and is providing the draft testing spec to be inserted in the NPA.

6. Another option would be to get the OEMs to adopt a wave frequency spectrum for testing which replicates the short period steep waves typical of the N Sea. This would then give latitude in open areas of water where large amplitude waves with a longer period present less of an issue. Some areas of the world such as S Australia

(where we might soon all have operations) have large amplitude waves (10m) but with very long periods and so are quite benign post ditching. The principal topic is that the dangers of ditching are much more dependent only on sea state, significant wave height and the frequency spectrum are much more influential. This should all be taken into account properly.

7. Has EASA performed any assessment of these consequences in terms of limitations to operations, increased stress on the operations, increased cost and also implications to the competitive landscape? There will be a direct effect on the operation in the North Sea outside the UK area, where the national CAAs have NOT subscribed to the outcomes and recommendations of the CAP1145.

Based on the above comments, EHA kindly asks EASA to evaluate the possibility:

- to align the Proposed Airworthiness directive with already ongoing Rule Making Tasks within EASA
- to change from sea state to Significant Wave Height and amend the certification material on those matters (also pending outcome of the RMT)
- to investigate the impact and the possible gains of amendments to present legislation (EASA goal is to increase safety and it would only amend legislation and requirements if safety is at stake so one should wait for the outcome of the RMT)

Our request is to delay the implementation time until the NPA of the RMT.0120 on “Ditching occupant survivability” has been completed and possible new GM and certification rules have been developed and implemented.

EASA response:

The comment is partially agreed.

- *Non-OEM STCs are already addressed: see PAD Applicability and required actions in paragraph (2) of the PAD.*
- *See EASA response to comment #2, point 2. (distinct PAD for non-EU Large Rotorcraft has been issued; final EASA ADs for EU and non-EU Large Rotorcraft must have the same effective date).*
- *The proposed safety action with an AD is done from aircraft continuing airworthiness standpoint without conflicting or hampering any OPS provisions of Commission Regulation (EU) No. 965/2012. This safety action is based on the ditching certification standard as applicable nowadays (see EASA response to comment #2, point 1.) The Agency has no authority for anticipating implementation of some aspects of on-going Rulemaking Tasks like RMT.0120 and regulating through an Airworthiness Directive. As an unsafe condition has been determined, EASA also cannot delay the implementation time of AD safety action until RMT.0120 process is completed. However as responded to previous comment #4 of the commenter, some implementing time flexibility is introduced in the final EASA AD (see EASA response to comment #3, point 5.).*
- *After RMT.0120 has been completed and possible new certification rules and guidance material will become applicable, EASA may decide to take further safety actions.*