


EASA	COMMENT RESPONSE DOCUMENT
	<p>Proposed Special Condition to define the MMEL requirements as Certification Basis for non-complex motor-powered helicopters.</p>

Commenter 1: Bell Helicopter –Michael Deer– 26-Oct-2015

Comment # 1

I have reviewed the proposed SCA. The only comment I have is whether; Approach Aids for VFR in Section 34-32-1 and Extended Squitter in Section 34-54-1 should also be included as being applicable to Helicopters.

EASA response:

Agreed. EASA will add in the SC table of reference using the sub-item 34-32-1B from CS-GEN-MMEL that is applicable to VFR only. 34-54-2-2 Extended Squitter (ADSB OUT) Transmissions is already covered as a sub-item of 34-54-2.

Commenter 2: Agusta Westland – Gino Gianluigi – 28-Oct-2015

Comment # 1

AgustaWestland welcome the publication of the Special Condition SC-GEN-MMEL-Non-Complex-Helicopters (draft published on October 8th 2015) aiming to fill the gap between CS-GEN-MMEL and CS-MMEL. The proposal of considering two different scenarios for Non-Complex-Helicopters is deemed adequate in principle.

Nonetheless, the following changes are proposed in section “*Special Condition SC-GEN-MMEL-Non-Complex-Helicopters*”:

EASA Special Condition	AgustaWestland position
<p>For single engine helicopters certificated:</p> <ul style="list-style-type: none"> ▪ for a maximum take-off mass of 3175 kg or less, and ▪ for a maximum passenger seating configuration of nine or less, and ▪ for operation with a minimum crew of one pilot, and ▪ for operation under VFR Day/Night and no flight in know icing conditions <p>the applicable certification specifications are constituted of:</p> <ul style="list-style-type: none"> ▪ CS-GEN-MMEL Initial Issue Book 1 & 2 where “aeroplane” is replaced by “helicopter” at each occurrence in the text, and provided ▪ the CS-GEN-MMEL Initial Issue Appendix IV – Item list applicability is limited to the items as defined in Table 1 below, and complemented by items of the CS-MMEL Appendix 1 to GM1 MMEL.145 MMEL ITEMS GUIDANCE BOOK, as defined in Table 1 below. 	<p><u>Comments:</u></p> <p>Suggestion is to modify the initial statement in order to include also CS-27 Multi engine rotorcraft (i.e. "Single /Multi Engine Helicopter"). It would be worth to expand the applicability of the Special Condition (and therefore of the CS-GEN-MMEL) to all CS-27 rotorcraft whose certification process does not mandate, in the frame of the relevant and applicable 1309 requirement, a safety process based on quantitative requirements as per CS29. Therefore for all those scenarios where CS27.1309 (b) or CS27.1309 (c) only applies (i.e. no Cat A operation or IFR), the certification requirement implies that the "rotorcraft must be designed to prevent hazards to the rotorcraft in the event of a probable malfunction or failure" (independently from the number of engines).</p> <p>Applicability of CS-MMEL which is based on the notion of hazardous and catastrophic failure conditions (with the relevant quantitative requirements) may result in discussing in the frame of MMEL approval, safety analyses not required and consequently discussed in the frame of the certification process or in the inability for the TCH to consider all possible candidate MMEL item.</p> <p><u>Proposal:</u></p> <p>WAS</p> <p><i>“For single engine helicopters certificated:</i></p> <ul style="list-style-type: none"> ▪ [...] <ul style="list-style-type: none"> ▪ <i>for operation under VFR Day/Night and no flight in know icing conditions”</i> <p>PROPOSAL TO BECOME</p> <p><i>“For single/multi engine helicopters certificated:</i></p> <ul style="list-style-type: none"> ▪ <i>for a maximum take-off mass of 3175 kg or less, and</i> ▪ <i>for a maximum passenger seating configuration of nine or less, and</i> ▪ <i>for operation with a minimum crew of one pilot, and</i>

	<ul style="list-style-type: none">▪ <i>for operation under VFR Day/Night and no flight in know icing conditions; and</i>▪ <i>for operation other than Cat A”</i>
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<p>For all other non-complex motor powered helicopters, the applicable MMEL certification requirements are defined in CS-MMEL, initial issue, notwithstanding the Applicability of this CS which shall be disregarded.</p>	<p><u>Comments:</u></p> <p>For CS-27 multi-engine rotorcraft certified for Cat A operation and/or IFR operation, the notion of failure conditions which must be shown to be extremely improbable applies (refer to CS29.1309 b) 2) i) as per Appendix C of CS-27). This results in a quantitative requirement (e.g. 1E-9/FH) for catastrophic failure conditions only, a therefore fault tree analyses and Minimum Cut Sets may not be available for Hazardous failure conditions. Applicability to CS-MMEL "as is" to such rotorcraft, may also result in discussing in the frame of MMEL approval, safety analyses not required and consequently discussed in the frame of the certification process or in the inability for the TCH to consider all possible candidate MMEL item.</p> <p>Additionally, it will be worthy to differentiate between newly certified rotorcraft for which a safety process based on the guidelines of AC29-2C or ARP4761 may be agreed with the Authority in the frame of the certification process and rotorcraft whose first TC has been issued before such guidelines were published and implemented by Industry or whose safety process, as agreed with the Authority at the time of TC, was not implementing such guidelines.</p> <p><u>Proposal:</u></p> <p>WAS <i>"For all other non-complex motor powered helicopters, the applicable MMEL certification requirements are defined in CS-MMEL, initial issue, notwithstanding the Applicability of this CS which shall be disregarded"</i></p> <p>PROPOSAL TO BECOME <i>"For multi-engine helicopters certificated:</i></p> <ul style="list-style-type: none"> ▪ <i>for a maximum take-off mass of 3175 kg or less, and</i> ▪ <i>for a maximum passenger seating configuration of nine or less, and</i> ▪ <i>for operation with a minimum crew of one pilot, and</i> ▪ <i>for operation under IFR and/or Cat A operation</i> <p><i>the applicable MMEL certification requirements are defined in CS-MMEL initial issue, with the exception of references/requirements to Hazardous failure conditions , notwithstanding the Applicability of this CS which shall be disregarded.</i></p> <p><i>In addition, for helicopters certified without following a safety process based on the AC29-2C or ARP4761 guidelines, alternative justification methods can be proposed by the Applicant for agreement with the Agency"</i></p>
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EASA response:

EASA partially agrees with the comments. EASA agrees that the CS-MMEL.145 requirements for quantitative analysis may not be practical on some certificated products when no such analysis is available from the aircraft type certification standpoint. However the current applicability of the CS-MMEL encompass all complex helicopters for which the above consideration also applies.

CS MMEL.145(d) provides prerequisites for a quantitative assessment in order to support a specific case which will not meet CS MMEL.145(c)(2)... "Under MMEL conditions, single failures leading to a potentially hazardous or catastrophic failure condition are normally not allowed at dispatch." as specified in new paragraph CS MMEL.145(c)(3) and when the conditions of CS MMEL.145 (d) (1) and (2) are met.

CS MMEL .145(d) was introduced together with associated specific risk criteria included at GM level in order to standardize the approach for MMELs in accordance with the final report of ARAC ASAWG.

EASA therefore agrees that the MMEL certification basis may need to be defined, based on the intent of the applicable type certification requirements through dedicated Special Condition or Equivalent Safety Finding, as applicable.

However due to the urgent need for issuance of this SC for the purpose of defining the certification basis for non-complex single engine helicopters, EASA proposes to consider the Agusta proposal for future use.

In the meantime the SC will be updated not to refer to the CS-MMEL for "other non-complex motor powered helicopters". Applicant may elect to comply to CS-MMEL if desired so.

Nevertheless, EASA agrees with the above proposal and the special condition applicability will be extended to enable the use of the generic MMEL process for multi engines non-complex helicopters certificated for VFR and other that Category A requirements.