European Aviation Safety Agency

Comment Response Document (CRD) on Consultation paper nr. 20 of 10 September 2003

CS-29 Certification Specifications for Large Rotorcraft

Foreword to the Comment Response document (CRD)

To give a rapid overview of the CRD, the following keywords were used in responding to comments:

- "Carried": The proposed amendment is wholly transferred to the revised text.

- "Noted": The comment is acknowledged and where needed the text has been improved.

- "Deferred": The comment requires further assessment by the Agency under its future rulemaking programme.

- "Disagreed": The comment is not shared by the Agency.

CRD CS-29, Book 1 & 2

General comments

Para.

99 / CAA UK

Comment

There are a number of places in the document where “appendix”, as in “this Appendix”, and “figure”, as in “Figure 1” are print
without a capital A or capital F. See, for example, CS 29.141(c) and Appendix C. A word search should be undertaken to
ensure the consistent use of capitals i.e. “Appendix” and “Figure” throughout.

Response

Deferred. The Agency will define its "drafting convention" in due time.

99 / CAA UK

Comment

Use of SI units
Strict observance of the SI system of units is not compatible with current western world practice for some units in which da
are scheduled in Flight Manuals and displayed on the corresponding flight deck instrumentation. Commonly:
Airspeed knots
Wind speed knots
Distance (long) nautical miles
Altitude feet
Elevation feet
Height feet
Vertical speed ft/min

are used and recognised in ICAO Annex 5 as acceptable non-SI alternative units. No dates have been agreed for the
termination of their use.

The use of these non-SI units is very widespread throughout Europe and much of the rest of the world. Since it is also requi
that the AFM units and flight deck instrumentation be consistent, it is illogical (and potentially unsafe) for these parameters
expressed in other units.

Response

Noted.
The comments received on this issue can be split up in four categories:
a. The non-SI alternative units knot, nautical mile and foot, allowed by ICAO Annex 5, should not be converted in SI units;
b. The conversions made, are not accurate enough;
c. Not all units are converted;
d. correcting of mistakes.

With regard to these comments the following remarks can be made:
a. The comment is agreed in principle, however it should be noted that ICAO Annex 5 allows the use of these non-SI
alternatives, but lists the SI units as the “primary units” (see table 3-4 of Annex 5). Therefore the conversion to SI units in
these cases is still valid, bearing in mind that the non-SI alternative units, quoted between brackets, may continue to be us
b. As explained under 2. above the units were converted using the “equivalent tolerance” principle, which is believed to be th
right approach in general. It is however noted that some of the figures in the airworthiness codes serve only as an input to
calculations and do not reflect an actual requirement to be met (e.g. CS 25.415(a)). In such case the figure has to be treate
a figure with no tolerance, and the conversion should be as accurate as possible.
From some of the comments it is also clear that people have used the figures with “old” units with a tolerance that was not
reflected in the figure. There may have been a good reason to do so, but it may also have been for no good reason. It will be
necessary to review all the figures to check if the tolerance as implied by the figure is sufficient for the purpose of the
requirement.
c. It is acknowledged that due to lack of time and resources it was not possible to convert the units in certain formula’s and i
graphics. This is a task which needs to be taken up by the Agency.
d. The necessary corrections are made.

101 / ENAC Italy

Comment

Following discussion and agreement at the RSG, I would like to propose changes to the EASA Certification Specifications w
were not originally adopted by the Core Group, but which are intended to resolve a long standing issue and to maintain
harmonisation with the FAA.

Firstly, You will recall that rotorcraft “Critical Parts” was the subject of much debate and deliberations over the last few year
The original output from the Rotorcraft Critical Parts WG was not universally accepted and caused one NAA to send a forma
letter of objection to the JAA. This initiated a follow-on activity to resolve the specific issues of controversy and resulted in
revised AC material being developed which all parties accepted. This material has been formally approved by the FAA and
published on their web site and is already in use by the JAA for an on-going validation programme. It would be in everyone’s
interest if this latest material provided the basis for showing compliance, and the original material referenced within the draf
CSs was removed.

A second issue relates to acceptance of the latest AC material. Currently Book 2 of the draft CSs refer to AC 27-1B and A
2C and not to the latest revision (Change 1) which was developed by the RSG under the terms of the FAA/JAA agreed “
Rotorcraft AC Material, Revision Development and Acceptance Plan”. Change 1 has been adopted by the FAA, but on the J
side, two NPAs (27-19 and 29-25) have yet to receive formal approval. If this approval could be accomplished quickly, or
CSs were amended in anticipation of being approved, this would enable full harmonisation to be retained.

To progress these two issues, the following changes are proposed:

1. Amend page 2-0-1 of CS-VLR to refer to FAA AC 27-1B Change 1 and delete the date.

General comments

Para.

2.Amend page 2-0-1 of CS-27 to refer to FAA AC 27-1B Change 1.
3.Amend page 2-0-1 of CS-29 to refer to FAA AC 29-2C Change 1.
4.Delete AMC VLR-602, AMC 27.602 and AMC 29.602.
5.If there is likely to be any delay in publication of the CSs, then amend the JARs accordingly.

Response

Noted for point 3. The Agency will refer to FAA AC 29-2C Change 1 dated 12 February 2003.

Deferred for point 4. The Agency should launch a specific NPA on critical part in due time.

B1-SUB F - CS 29.1401

Para. ***(e)***

99 / CAA UK

Comment

CS 29.1401(e) The formula that should be in sub-paragraph CS 29.1401(e) has become incorrectly misplaced into sub-paragraph (a)(2).

Response

Noted. The formula is now in sub-paragraph CS 29.1401(e).

B2-AMC-29602

Para.

99 / CAA UK

Comment

AMC 29.602 is a copy of the original ACJ text published in JAR-VLR, JAR-27 and JAR-29.

Rotorcraft Critical Parts has been the subject of much debate and deliberations over the last few years. The original output f the Rotorcraft Critical Parts WG was not universally accepted and resulted in the UK-CAA sending a formal letter of objecti the JAA and the formation of a follow-on HWG to resolve specific issues of controversy. The outcome from this HWG has be revised AC material which all parties have accepted.

The FAA have now formally approved and issued the new AC material and there is on-going work by the RSG to formally adc this material within the JARs. The material is already being used by the JAA in the certification/validation process.

It would be in everyone's interest if this material could be included within the rotorcraft CSs (VLR, 27 & 29) as it provides greater clarity with respect to the rule, represents the agreed text which all parties have accepted, and would provide harmonisation both with the other CSs (if adopted) and with the associated FARs.

Response

Deferred. The Agency should launch a specific NPA on critical parts in due time.

other

Para. ***CS 29.143(b)***

99 / CAA UK

Comment

CS 29.143(b) Formatting error – insert line above sub-para (b)(1).

Response

Carried.

Para. ***CS 29.143(c)***

99 / CAA UK

Comment

In CS 29.143(c), 17 knots has been converted to 8.7m/s (rather than 31 km/h) whereas elsewhere, knots are converted to km/h. This may have arisen because .143(c) refers to a wind velocity rather than an airspeed. However, when the test poir for .143(c) are flown, the aircraft is usually manoeuvred over the ground in zero wind at a ground speed of 17 knots. Hence, not withstanding the use of SI units, if we have to go with something other than knots, the consistent use of km/h would be more appropriate.

Response

Carried.

other

Para. ***CS 29.143(d)***

99 / CAA UK

Comment

CS 29.143(d) Formatting error – insert line between sub-paras (c) and (d).

Response

Carried.