

August 04, 2011.
GCH-0087/2011 – 1/2
MVRO/jra



Embraer S.A.

Av. Brigadeiro Faria Lima, 2.170
12227-901 - S.J. dos Campos - SP
Brazil

Phone: (55 12) 3927-0543
Fax: (55 12) 3927-1184
PC: 179

Process Support
Rulemaking Directorate
EASA
Postfach 10 12 53
D-50452 Cologne
Germany

Subject: *Comments to NPA 2011-03: Large Aeroplane Certification Specifications in Supercooled Large Drop, Mixed phase, and Ice Crystal Icing Conditions.*

Gentlemen,

Embraer appreciates the opportunity to send the following comments already sent to FAA for your consideration in NPA 2011-03 about Large Aeroplane Certification Specifications in Supercooled Large Drop, Mixed phase, and Ice Crystal Icing Conditions.

CS 25.1420

Paragraph 25.1420(b) uses the phrase "simulated icing tests" and "simulated ice shapes" in various subparagraphs, but the FAA's Advisory Circular 25-XX defines simulated ice as fabricated ice shapes. To be consistent with this definition, subparagraphs CS 25.1420(b)(1) and (b)(2) should use the phrase "artificial ice" as defined in FAA AC 25-XX.

CS 25, Appendix O, Figures 2 and 5

To aid the reader to understand Figures 2 and 5 of Appendix O to CS 25 Embraer proposes to add a definition of Cumulative Mass:

Percentage of total water mass made up of drops whose median volume droplet diameters are less than or equal to a certain value.

CS 25, Appendix O, Part II(b)(1)(ii)

To make clear in the definition for en route ice that the applicant needs to consider only the conditions within Appendix O intended for operation, Embraer suggests to revise Appendix O, Part II(b)(1)(ii) to state:

(ii) The ice accumulated during the transit of one cloud with a horizontal extent of 17.4 nautical miles in the most critical of the icing conditions for the defined operational envelope in part I of this appendix and one cloud with a horizontal extent of 17.4 nautical miles in the continuous maximum icing conditions defined in appendix C of this part.

CS 25, Appendix O, Part II(b)(2)(ii)

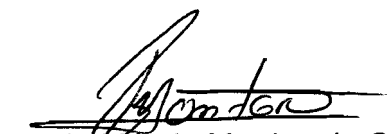
Embraer believes that that the total exposure time to holding ice should be limited to 45 minutes, therefore the last sentence in Appendix O, Part II, Subparagraph (b)(2)(ii) should be applicable to the whole of Subparagraph (2), and not just to the transit time through one appendix O cloud and one appendix C cloud. This would be better shown as a separate subparagraph (2)(iii) that says "The total exposure to the icing conditions need not exceed 45 minutes."

CS-E, Appendix D

Because engine sensors can be equally affected by ice crystals as airframe components like airspeed sensors, Embraer recommends that the conditions of Appendix D to CS-E be modified to encompass the ice crystal conditions of Table 1 of 25.1323.

Without this modification, the engine sensors, like Po/To probes can be subject to the same ice crystal effects as pitot-static systems.

Best Regards,



Paulo Márcio Martins de Góes Monteiro
Regulations & Flight Standards Manager