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EASA prepares to broaden icing certification criteria

By [David Kaminski-Morrow](#)

Europe's safety authority is preparing to assess feedback over a proposed overhaul of icing certification criteria that would broaden the scope to include other hazardous icing phenomena such as supercooled large drops and crystallisation.

The changes are part of an extensive revision on the adequacy of certification in the wake of several fatal accidents.

While the European Aviation Safety Agency highlights, in its proposal, the ATR 72 crash at Roselawn, Indiana in October 1994 - the result of freezing drizzle - it also mentions pitot icing and the possibility that this contributed to the loss of Air France flight AF447 in 2009.

Freezing drizzle and rain constitute an icing environment consisting of supercooled large drops. While EASA has said that these have caused at least six accidents since 1988, they are outside the icing envelope defined by the CS-25 certification standards document for large transport aircraft.

"It has been evidenced that the icing environment used for certification of large [aircraft] and turbine engines needs to be expanded to improve the level of safety when operating in icing conditions," it said in its proposal.

The suggested rules would provide a new section to CS-25, designated appendix O, detailing the size, water content and other characteristics of supercooled large drops and the capabilities aircraft must demonstrate when confronted by such conditions.

Other icing phenomena - mixed phase and crystallisation - have not resulted in fatal accidents but have contributed to engine power loss incidents over the past two decades. "They are considered as a serious safety threat," EASA added in a detailed notice of proposed amendment to CS-25, the consultation period for which closes this month.

EASA said it considered the US Federal Aviation Administration's similar proposed rulemaking of June 2010 but added that, while its objective is to "harmonise as much as possible" the two authorities' regulations, the European proposal contains some differences.

It will apply to all new large aircraft, not be limited to a specific category, as well as all flight instrument external probes. EASA also proposes clarifying and extending provisions for alerting flightcrew when a probe's anti-ice system is not operating normally.

EASA said it looked at using terminal radar and airborne sensors to identify icing zones with supercooled drops, but concluded these were "not mature enough". Another alternative, use of predictive weather tools, was also rejected. Both options would have still required additional rulemaking.