

New Icing Regulations

Effect on Icing Operations

Presented at: Friends/Partners in Aviation Weather

By: Tom Bond, FAA – Aircraft Icing Technical Advisor

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Federal Aviation
Administration



Background – How did we get here (1/2)

- **1994 American Eagle ATR-42 Roselawn accident: NTSB recommendations (1996) to the FAA were to review the icing environments and account for conditions that exceed current Appendix C icing certification standards.**
 - FAA tasked the Aviation Rulemaking Advisory Committee to identify working groups to address a number of icing harmonization tasks, and specifically look at supercooled large drops (SLD), mixed phase, and ice crystal icing conditions.
 - Working Group (WG) Actions:
 1. Determined flight research needed for winter weather environments to characterize SLD icing conditions – NASA, EC, and NRCC
 2. Meteorology sub-group developed new engineering standard for SLD icing conditions certification (Appendix O)
 3. Engine WG determined convective weather high altitude ice crystal conditions effect turbine engines - developed new engineering standard for ICI conditions certification (Appendix D).

Background – How did we get here (2/2)

New rulemaking proposal submitted by ARAC to the FAA –
Notice for Proposed Rulemaking (NPRM) in June 2009:

- Expands icing conditions for aircraft certification to include
 - SLD icing conditions for transport category airplanes most affected by these icing conditions
 - Mixed phase and ice crystal conditions for all transport category airplanes, and
 - SLD, mixed phase, and ice crystal icing conditions for all turbine engines
- New regulations became effective January 5, 2015
- § 25.1420 describes expanded icing environment for Supercooled Large Drops (SLD); large airplane icing conditions in Appendix O

New Icing Regulations

- Choices for certification to § 25.1420 in icing conditions
 1. Certify to Appendix C only - no SLD conditions
 - Detect and exit all SLD conditions
 2. Certify to a portion of SLD conditions
 - Detect and exit SLD conditions not certified to
 3. Certify to unrestricted operations in icing conditions
 - Consider whole App C and App O icing environments
- Part 25 aircraft can now have a certification basis to operate in different icing conditions, e.g. Appendix C, freezing drizzle, and freezing rain
 - *Will now need to provide environmental icing conditions weather information for flight mission planning and ground icing operations*