New Icing Regulations

Effect on Icing Operations

Presented at: Friends/Partners in Aviation Weather
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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).
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
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• 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*