show through analysis that the ice protection for the various components of the airplane is adequate, taking into account the various airplane operational configurations. To verify the analysis, one, or more as found necessary, of the following methods must be used:

(1) Laboratory dry air or simulated icing tests, or a combination of both, of the components or models of the components.

(2) Laboratory dry air or simulated icing tests, or a combination of both, of models of the airplane.

(3) Flight tests of the airplane or its components in simulated icing conditions, measured as necessary to support the analysis.

(4) Flight tests of the airplane with simulated ice shapes.

(5) Flight tests of the airplane in natural icing conditions, measured as necessary to support the analysis.

(c) For an airplane certified in accordance with paragraph (a)(2) or (3) of this section, the requirements of § 25.1419(e), (f), (g), and (h) must be met for the icing conditions defined in Appendix O of this part in which the airplane is certified to operate.

(d) For the purposes of this section, the following definitions apply:

(1) *Reversible Flight Controls.* Flight controls in the normal operating configuration that have force or motion originating at the airplane's control surface (for example, through aerodynamic loads, static imbalance, or trim or servo tab inputs) that is transmitted back to flight deck controls. This term refers to flight deck controls connected to the pitch, roll, or yaw control surfaces by direct mechanical linkages, cables, or push-pull rods in such a way that pilot effort produces motion or force about the hinge line.

(2) *Simulated Icing Test.* Testing conducted in simulated icing conditions, such as in an icing tunnel or behind an icing tanker.

(3) *Simulated Ice Shape.* Ice shape fabricated from wood, epoxy, or other materials by any construction technique.

[Amdt. 25–140, 79 FR 65528, Nov. 4, 2014]

§ 25.1421 Megaphones.

If a megaphone is installed, a restraining means must be provided that is capable of restraining the megaphone when it is subjected to the ultimate inertia forces specified in § 25.561(b)(3).

[Amdt. 25–41, 42 FR 36970, July 18, 1977]

§ 25.1423 Public address system.

A public address system required by this chapter must—

(a) Be powerable when the aircraft is in flight or stopped on the ground, after the shutdown or failure of all engines and auxiliary power units, or the disconnection or failure of all power sources dependent on their continued operation, for—

(1) A time duration of at least 10 minutes, including an aggregate time duration of at least 5 minutes of announcements made by flight and cabin crewmembers, considering all other loads which may remain powered by the same source when all other power sources are inoperative; and

(2) An additional time duration in its standby state appropriate or required for any other loads that are powered by the same source and that are essential to safety of flight or required during emergency conditions.

(b) Be capable of operation within 3 seconds from the time a microphone is removed from its stowage.

(c) Be intelligible at all passenger seats, lavatories, and flight attendant seats and work stations.

(d) Be designed so that no unused, unstowed microphone will render the system inoperative.

(e) Be capable of functioning independently of any required crewmember interphone system.

(f) Be accessible for immediate use from each of two flight crewmember stations in the pilot compartment.

(g) For each required floor-level passenger emergency exit which has an adjacent flight attendant seat, have a microphone which is readily accessible to the seated flight attendant, except that one microphone may serve more than one exit, provided the proximity of the exits allows unassisted verbal communication between seated flight attendants.

[Doc. No. 26003, 58 FR 45229, Aug. 26, 1993, as amended by Amdt. 25–115, 69 FR 40527, July 2, 2004]