PART I—METEOROLOGY

In this Appendix icing conditions are defined by the parameters of altitude, vertical and horizontal extent, temperature, liquid water content, and water mass distribution as a function of drop diameter distribution.

(a) Freezing Drizzle (Conditions with spectra maximum drop diameters from 100μm to 500 μm):

(1) Pressure altitude range: 0 to 22,000 feet MSL.

(2) Maximum vertical extent: 12,000 feet.

(3) Horizontal extent: Standard distance of 17.4 nautical miles.

(4) Total liquid water content.

NOTE: Liquid water content (LWC) in grams per cubic meter (g/m^3) based on horizontal extent standard distance of 17.4 nautical miles.

(5) Drop diameter distribution: Figure 2.

(6) Altitude and temperature envelope: Figure 3.

(b) Freezing Rain (Conditions with spectra maximum drop diameters greater than 500 μm):

(1) Pressure altitude range: 0 to 12,000 ft MSL.

(2) Maximum vertical extent: 7,000 ft.

(3) Horizontal extent: Standard distance of 17.4 nautical miles.

(4) Total liquid water content.

NOTE: LWC in grams per cubic meter (g/m^3) based on horizontal extent standard distance of 17.4 nautical miles.

(5) Drop Diameter Distribution: Figure 5.

(6) Altitude and temperature envelope: Figure 6.

(c) Horizontal extent.

The liquid water content for freezing drizzle and freezing rain conditions for horizontal extents other than the standard 17.4 nautical miles can be determined by the value of the liquid water content determined from Figure 1 or Figure 4, multiplied by the factor provided in Figure 7, which is defined by the following equation:

$S = 1.266 - 0.213 \log10(H)$

Where:

S = Liquid Water Content Scale Factor (dimensionless) and

H = horizontal extent in nautical miles