

A36.3.4.1 In the absence of wind and for sinusoidal sounds at grazing incidence, the insertion loss caused by the windscreen of a stated type installed around the microphone must not exceed  $\pm 1.5$  dB at nominal one-third octave midband frequencies from 50 Hz to 10 kHz inclusive.

A36.3.5 *Microphone system.*

A36.3.5.1 The microphone system must meet the specifications in sections A36.3.5.2 to A36.3.5.4. Various microphone systems may be approved by the FAA on the basis of demonstrated equivalent overall electroacoustical performance. Where two or more microphone systems of the same type are used, demonstration that at least one system conforms to the specifications in full is sufficient to demonstrate conformance.

NOTE: An applicant must still calibrate and check each system as required in section A36.3.9.

A36.3.5.2 The microphone must be mounted with the sensing element 4 ft (1.2 m) above the local ground surface and must be oriented for grazing incidence, *i.e.*, with the sensing element substantially in the plane defined by the predicted reference flight path of the aircraft and the measuring station.

The microphone mounting arrangement must minimize the interference of the supports with the sound to be measured. Figure A36-1 illustrates sound incidence angles on a microphone.

A36.3.5.3 The free-field sensitivity level of the microphone and preamplifier in the reference direction, at frequencies over at least the range of one-third-octave nominal midband frequencies from 50 Hz to 5 kHz inclusive, must be within  $\pm 1.0$  dB of that at the calibration check frequency, and within  $\pm 2.0$  dB for nominal midband frequencies of 6.3 kHz, 8 kHz and 10 kHz.

A36.3.5.4 For sinusoidal sound waves at each one-third octave nominal midband frequency over the range from 50 Hz to 10 kHz inclusive, the free-field sensitivity levels of the microphone system at sound incidence angles of 30°, 60°, 90°, 120° and 150°, must not differ from the free-field sensitivity level at a sound incidence angle of 0° (“normal incidence”) by more than the values shown in Table A36-1. The free-field sensitivity level differences at sound incidence angles between any two adjacent sound incidence angles in Table A36-1 must not exceed the tolerance limit for the greater angle.