APPENDIX 3

EQUIPMENT NOISE BACKGROUND CALCULATION GUIDE

Background

To calculate background noise, you need to consider the sound pressure level in a given environment emitted by various sources. This can be done in terms of measuring the general sound pressure level (SPL) and calculating the impact on the equipment you are measuring. Here's a basic approach to calculating background noise:

Step 1: Measure the sound pressure level (SPL) of noise emitting equipment

1. Use a sound level meter to measure the noise in the environment. The sound level meter measures in decibels (dB).
2. Ensure that the meter is calibrated and placed in the area where you are measuring background noise.
3. Record the average sound level over a period of time of the noise emitting equipment. (*This can be continuous or a series of measurements over intervals, depending on how dynamic the environment is, done as described in the Noise Measurement guidance note.)*

Step 2: Measure the ambient noise

1. Use a sound level meter to measure the noise in the environment, at the position you want to know the sound pressure level impact. The sound level meter measures in decibels (dB).
2. Ensure that the meter is calibrated and placed at the position you want to know the background sound pressure level impact to the measured equipment.
3. Record the average sound level over a period of time of the average background noise with the noise emitting equipment switched off. *This can be continuous or a series of measurements over intervals, depending on how dynamic the environment is.*

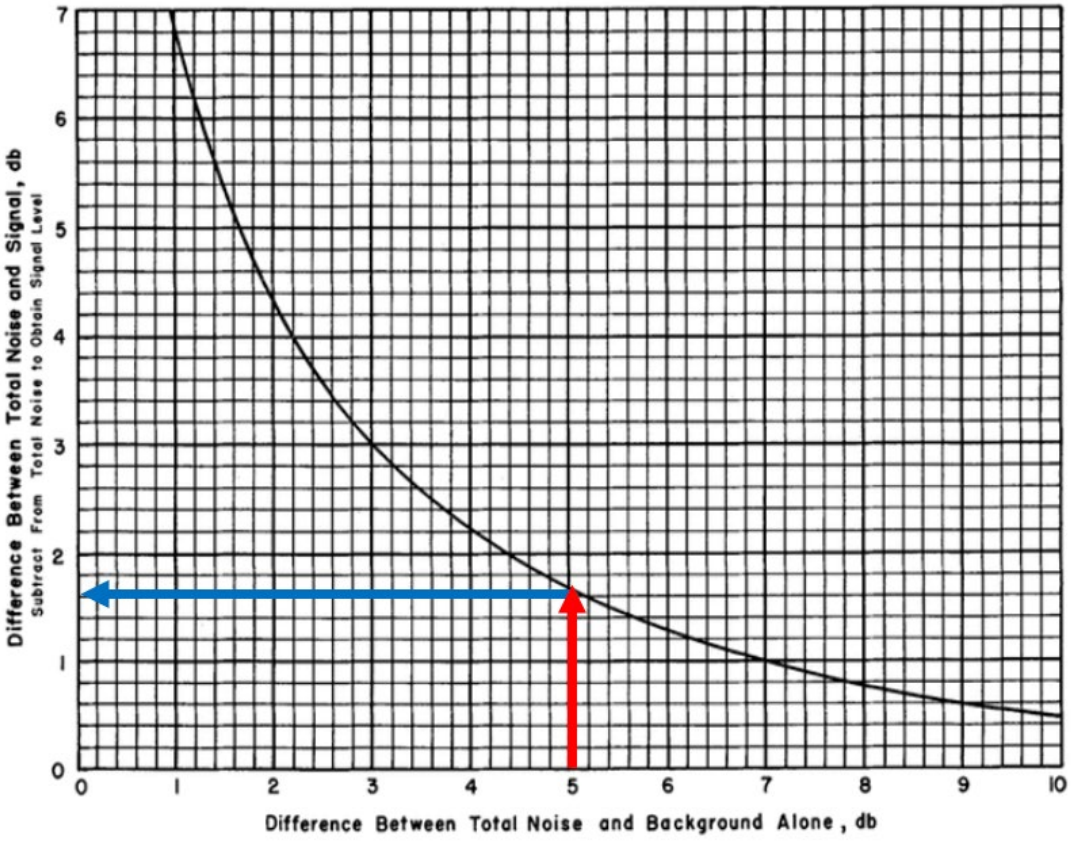
Step 3: Calculating the Background Noise Level

1. If you are calculating total background noise, you can also calculate the value using the graph below:

   The chart facilitates the calculation of the sound pressure level of a particular noise alone (Noise emitting equipment) from measurements of the total noise level (Noise emitting equipment plus background noise) and of the background noise level (Noise emitting equipment turned off).

PROCEDURE:

- Measured noise level as indicated in Step 1 above substrate the measured noise level as indicated in Step 2 above.
- Enter the chart on the horizontal scale at the value of the difference in these levels.
- Pass to the curve.
- Read the value from the vertical scale, the correction which is to be subtracted from the total noise level to obtain the level for the noise emitting source alone.



Example:

- Total noise = 104 dB
- Background noise = 99 dB
- Difference = 5 dB *(Enter the horizontal scale at this difference)*
- Correction = 1.6 dB *(Read from the vertical scale the correction)*
- Noise emitting equipment alone = 104 dB – 1.6 dB = 102.4 dB

Step 4: Interpretation

1. When the difference between the background noise and the noise emitting equipment exceed 10 dB the background impact could be ignored.
2. When the background noise is higher than the source noise, the origin needs to be determined and measured as a noise source and recorded as such.