

## Noise in Two Acts - Act 1

**Work-related noise-induced hearing loss** is two things: a very long descriptive phrase; and something you should never have at your operations. Well, maybe that's not 100 percent true, for reasons you'll read in a bit. But certainly we can prevent almost all future work-related hearing loss.

There are three reasons to try and prevent work-related hearing loss:

- 1) There is the humanitarian aspect, in that you do not want people to go deaf;
- 2) There is the compliance aspect in that US OSHA and other country agencies have noise exposure regulations; and
- 3) the potential Worker's Compensation claim for hearing loss.

The first thing is to identify noise-exposed individuals. For US OSHA, that is everyone exposed over 85 decibels (dB) average, for an 8-hour day, any one day a year. At this level people need to be included in a Noise Program, above 90 dB average they must wear hearing protection.

And yes, unlike Lead or Asbestos regulations that need more than 30 days of exposure for the standard to apply, noise is any one day.

Also be aware this 85 dB applies to an 8-hour day or 40-hour week. For people working a 10-hour day, as an example, the 85 dB cutoff drops to 83.4 dB.

This evaluation can be done by noise dosimetry, or by an area "noise map". Dosimetry is nice because it gives you the persons average noise exposure for the day. Be aware if you are using a percent dose readout, at 50% dose you're at 85 dB.

However a noise map is useful as well, because you can get more data on more people by showing where the noisy areas are. And in many locations, if a personal works all or most of the day in that noisy zone, they should be in your hearing conservation program.

As stated, OSHA's cutoff is 85 dB, however most sound level meters (SLM) have an accuracy of +/-2 dB so if you are measuring 83, it might really be 85 dB.

A measurement cutoff around 83 is recommended, to be sure you get all your exposed populations. We have seen reports where someone said that 84.9 dB was okay, as that's below 85; but that is thinking is silly.

Once the population is identified, ensure employees get annual hearing tests (audiograms), training on the hazards of noise, and a check on the hearing protection's fit and efficacy.

Audiograms are a fun topic because sometimes you get a very accurate hearing test that is 100% not in compliance with OSHA! If this information is not in the hearing test, or in the report somewhere, the data, for compliance purposes, is useless:

- name and job classification of employee;
- date of the audiogram;
- examiner's name;
- date of last acoustic or exhaustive calibration of the audiometer;
- employee's most recent noise exposure;
- records of the measurements of the background sound pressure levels in audiometric test rooms.

**Act 2 next month**

## App Corner - SoundMeter

Last month we mentioned the NIOSH noise measuring app, which is not bad. One of the best SLM is Faber Acoustical's SoundMeter.

This app actually measured the most accurately when NIOSH did their App study, and parenthetically when we did an unofficial study 5-6 years before that.

Besides an in-App purchase that adds Octave Band Analysis, SoundMeter can be remotely controlled by the Apple Watch, and has very robust data logging and export tools. It will also allow the use of calibrated microphones, which makes it very accurate.