

THRESHOLD LEVEL

# The THRESHOLD

A T K GROUP PUBLICATION DEVOTED TO OCCUPATIONAL HEARING LOSS PREVENTION AND PROGRAM MANAGEMENT

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We are conducting a certification/re-certification class January 8-9-10, 2014 in Cherry Valley, IL.

If you wish to participate, contact Beth Minnick at (815) 332.3460

## ANNOUNCEMENT

### Occupational Health Services

T K Group is pleased to announce that we have expanded our depth of mobile occupational health services by acquiring Concentra Mobile Medical Division based in Houston, TX. This strategic purchase allows current and future T K Group clients to obtain mobile, on-site multiphasic occupational health testing throughout the United States.

Multiphasic exams cover a wide range of medical services available on board our occupational trailers. Exams include, but are not limited to, audiograms, respiratory PFT and Fit test, vision, EKG, x-ray, laboratory blood tests, flu shots and other vaccinations, and physical examinations.

Your current T K Group sales professional will assist in quoting an occupational mobile on-site program tailored to your requirements. You may also contact Leslie Johnson, who will answer your questions and develop a program or battery of exams which might be required to meet certain regulations. Her direct number in our Houston, TX office is 713-280-0430. Her email: [Lesliejohnson@tkgrouphearing.com](mailto:Lesliejohnson@tkgrouphearing.com).

T K Group, Inc. is a premier provider of mobile medical services nationwide, serving more than 5,000 locations of American industry. With this strategic purchase, T K Group has added 13 staff and operates 42 mobile testing units.

In addition to our hearing conservation services, we also have both a certified industrial hygienists (CIH) and certified safety professionals (CSP) on staff with substantial experience in managing occupational health, safety and medical services.

## Treatment Of Negative Threshold Values

T K Group will occasionally be asked “why negative thresholds were not entered to our system”. By default, all negative thresholds values migrate to 0 dB (HL).

CFR 29 1910.95 in fact makes no mention of required tone presentation intensities whatsoever. It is however universally accepted in the realm of Occupational hearing testing that the range of intensities covered is 0-95 dB. Any threshold above 95 dB migrates to NR (No Response) at T K Group.



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The Threshold is written by Robert Williams, A.u.D.

## Take Ownership Of Your Hearing Loss Prevention Program

CFR 1910.95 (The Hearing Conservation Amendment) and CFR 1904 (Recording Occupational Illnesses and Injuries) are arguably among the most challenging and time consuming OSHA standards due to the required paperwork and time sensitive follow-up actions.

Whether you receive reports in paper form, CD, or web-based, you must read the reports as soon as you are notified so that proper follow-up actions may be initiated.

For paper and CD report recipients, go directly to the Program Summary Report. This report gives you all the information you need to initiate proper follow-up compliance. Web users should generate the Program Summary Report electronically.

Of primary importance, the Program Summary Report lists those employees having sustained a 10 dB STS, and a potentially OSHA Recordable shift event. All persons listed in these two sections should be retested within 30 days of the shift event. (Coincidentally, a 10 dB STS listing is given to the site contact upon conclusion of mobile test operations).

The Program Summary Report will also inform you of retest results and Work Relatedness Determination outcomes.

Accounting is key to maintain proper OSHA compliance. For mobile test clients that opted not to receive on-board test notifications, the site coordinator must at a minimum assure that all employees having sustained a 10 dB STS sign the Employee Notification Letter provided to them by T K Group. The same applies for in-house clients without an in-house test notification system.

Retests, while optional, are strongly recommended and should be scheduled promptly within the 30 day retest period.

If an OSHA Recordable shift occurs and you anticipate a 30 day retest, posting to the OSHA log is not required; only after a Recordable shift is confirmed by retest are you required to post the event. Posting must be completed within 47 days of the initial shift event. *DO NOT wait three or four months to submit a determination request IF you have not posted it to the 300 log T K Group sees this practice often.*

A Work Relatedness Determination may then be requested. If A Recordable shift event is deemed non-work related, you may line that event off the OSHA 300 log.

Keeping up with these two standards is hard work and requires timely attention to the details. Do not make the mistake of procrastination, as this will only complicate future interpretation of test results and may potentially bring on citations upon OSHA audit.

Lastly, please read the reports. The reports will guide you to successful compliance of these two noise standards.

## Dual Hearing Protection Does Not Double Attenuation

The notion of dual hearing protection seems a logical response for any worker exposed to high noise. One might think, for example, that wearing an earmuff with a noise reduction rating (NRR) of 28 dB combined with an earplug having a NRR of 28 dB would provide a total attenuation of 56 dB. However, this logic does not hold true in “real world” situations given what we know about hearing protector attenuation and a phenomenon known as bone conduction.

Sound is normally channeled to cochlea in one of three ways, by air conduction (as in the standard pure-tone air-conduction hearing test), bone conduction or air/bone conduction combined. However, if noise levels are sufficiently high, sound may bypass the outer and middle ears to stimulate the cochlea directly via vibration, made possible due to the conductivity of the human skull and associated tissues. The sound pressure level at which noise is transmitted to the cochlea directly via bone conduction may vary from person to person due to human variability of bone mass and tissue makeup. In real world industrial environments, risk of bone conduction transmission is presents, although damage to the cochlea is unlikely at noise levels at or below 85 dB.

High-level noise is heavily weighted; low to middle frequency acoustical energy is significant. Noise level attenuation provided by earplugs alone is lesser in the low to mid frequency range. Given this knowledge, logic would follow that the earmuff-earplug combination would suffice in high noise environments.

So what is a correct formula to use when fitting dual hearing protection? Currently, there is none. Fitting dual hearing protection is unfortunately a “flying by the seat of your pants” methodology. Elliott Berger states, “no easy rule of thumb could be devised to predict combined attenuation” In the end, it is documented that dual protection adds but only 5 to 10 dB of attenuation.

So what message can be taken these findings? When planning work activity, remember to take into account the benefits of dual hearing protection. When confronted with high-level noise exposure, take into account, however, the known limitations of dual protection.

(Source: Elliott Berger: Earlog 13: Attenuation of Earplugs Worn In Combination With Earmuffs, Aearo Company)