

INDUSTRIAL HEARING TESTING

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WAVELENGTH

Volume 5

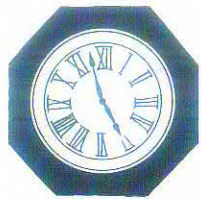
No. 1

HAVE YOU HEARD

We have moved to new digs! Please take a moment to change your records with our new phone, fax & address.

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- Hearing Protection
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- Recordkeeping Software
- Posters & Support Literature
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PERSONALLY SPEAKING

I'll bet you think you are looking at a picture of a cute, seemingly innocent . . . kangaroo, but actually he's a killer! I know I tend to digress sometimes from my assigned topic of hearing issues, but I need to warn my readers! So let me just tell you this little story.

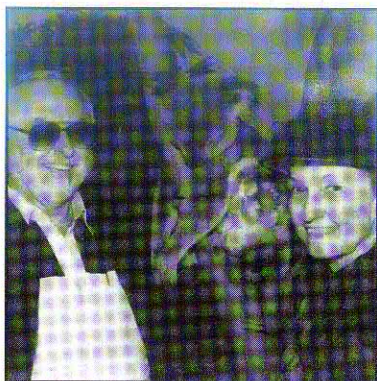
While my parental units were in Australia recently, my mom got attacked by this perpetrator in a wildlife park! Her version is that the signs instructed them to remain on the designated path. As my parents strolled through the park marvelling at the wildlife, two of the kangaroos approached, hopping straight towards them, closer and closer, directly in their path. My parents froze on the sidewalk, somewhat concerned with roo's approach, yet diligently trying to convince the Australians that some American tourists can follow directions. One of these kangaroos hopped up to my mom, just about her height, (they stand up on their strong hind legs), and grabbed her arms with his sharp claws on his front feet.

The good news is that when the killer kangaroo would not release his wife, Dr. Hengen fearlessly grabbed the roo by the neck and wrestled him off balance, forcing him to release his lady . . . my mom! (He wrote this paragraph.)

Apart from the shock of it all, Mardy escaped with only a mildly serious claw scratch to one arm. The park ranger "treated and released" her at their first aid clinic, only a bit worse for wear.

Meanwhile, at work, my brother Scott and I, disillusioned ourselves into thinking our folks had gone to attend the World Conference on Noise in Sydney, Australia, you know . . . working. Dr. Hengen claims he was collecting data to assess the hearing of some of the wildlife. Our accountant informed him however, that this was not sufficient research for an official tax write off . . . I would have thought that after a 28 hour plane ride, wearing their Noise Stopper ear plugs, they should have been plenty well rested to attend to business.

I can relay some of their sightseeing experiences; like seeing the world's smallest penguins, the Fairy Penguins, who are just 18 inches tall. These mini-penguins emerge from the ocean to parade up the beach to their burrows on Phillip Island, on the southeastern tip of Australia. It's a seemingly exhausting hike at the end of each hunting day, as they file in a perfect line towards the sand dunes of their homes, stopping to rest frequently, then shuffle on. Apparently, they have especially good hearing because they follow their chicks calls to find their burrows, some up to a half a mile off shore.



Dr. Hengen was having trouble getting an accurate assessment of the Koala Bears' hearing however, as he reports that they tend to be oblivious and passive to those around them. Since they sleep nearly 20 hours a day, and sit on a limb and eat eucalyptus leaves the remainder of the day, I personally suspect the crunching leaves block out all other sounds. Apparently these marsupial beings have the luxury to cater to their two priorities in life - eating and sleeping!

Continued on page 2



Australia is known to be the most advanced country in the world regarding hearing research. They have a nationally subsidized publicity campaign about possible damage from too much noise and the effects on human hearing. This national effort begins at the earliest levels in the public school system, and continues into every market segment throughout adulthood. According to the statistics presented, everyone in Australia has become aware of the problems of hearing loss. Articles included in this news-letter will review some of the current research that was presented by experts from around the world.

Also coming up in this issue, some hot topics about the NIOSH recommendations for reforming the Hearing Conservation Standard 1910.95. Most dramatically, there is a proposal being considered for all manufacturing sites to have a formal sound survey completed **every two years**. This might shake some folks up, as many locations are not even aware that they need to have an initial survey on file. This means, documentation of time weighted average exposures of all potentially noise hazardous areas in the workplace to determine who must be included in program! Casual "walk-throughs" with instantaneous sound level meters do not meet the intention of this law. Also, instrumentation, as always, must be a type II meter or better. Steve has designed a comparison chart of some of these proposed changes from the current federal regulation.

For all of our customers, I would like to remind you of our new "on-line" capabilities which include e-mail and a website for industry updates. We have, of course, addressed all of the "Y2K" concerns within our computer system, so be assured we can keep up with the demands of the new millennium and recordkeeping issues.

I'd like to thank our customers for referring your business friends and colleagues to us. Much of our business is generated in this way, so thanks. We have just built rig number 6, which has been placed in the Rochester, NY area. For those of you who might have other facilities around the Northeast, a reminder that we are operating in nine states now . . . all of New England, NY, PA and NJ.

Finally, the most important news for our customers is that **WE HAVE MOVED OUR OFFICES** from Worcester to Auburn, Massachusetts. We have a new address and phone number listed on the front cover. Please take a moment to change your records now while you're thinking of it. As always, we're available for any issues or questions. Don't hesitate to call our office. Meanwhile, I'll remind you to continue to convince everyone around you to wear their ear plugs in all hazardous noise! We can make a difference for peoples' healthy living!

Yours,

ANDI HENGEN,
Editor

***If it goes
without saying,
then don't say it.***

SOUND SURVEY ON FILE?

One of the more common oversights that we run across with customers, is a lack of having a comprehensive noise measurement on file. Perhaps the vague, rather loose verbiage that the CFR1910.95 uses in reference to this requirement is a contributing factor. Let me clarify it for you.

I will focus in this article on the current requirements. The regulation states that "when information indicates that an employee's exposure may equal or exceed an 8-hour time-weighted average of 85 decibels, the employer shall develop and implement a monitoring program." Unlike hearing testing which is required annually, the regulation only says that "monitoring shall be repeated whenever there is a change in production, process, equipment or controls." The reality is that employees' noise exposures may change quite frequently due to high mobility on the job, varying processes or volumes, etc. Unfortunately, the regulation is not designed to require annual noise surveys, **thus** allowing a somewhat lax system to determine who to include or add to your program.

The danger in this, of course, is that a noise survey done years ago may not accurately represent the current

exposures of your work force, thereby perhaps allowing for further damaging noise exposures. An example of this would be improper selection of hearing protection and miscalculated NRRs (noise reduction ratings), based on outdated sound level records.

NIOSH has now formally proposed a criteria which would require a complete sound survey to be conducted every two years. Their point is that this potential oversight could omit many workers who should have been in a Hearing Conservation Program sooner. This would enable those employment environments with a high worker mobility and variability in job functions to better protect these workers, with more "real time" data. (See the article in this issue regarding proposed NIOSH recommendations for more details of how this could affect industry.)

If you find yourself reading this, and have not yet conducted a survey at all, this is a step you must take. Surveys allow for establishing a time weighted average over an 8 hour work day. If you have shifts longer than 8 hours, a mathematical calculation will adjust these longer shifts, to calculate the same end result; what an 8-hour time-weighted average is.

NIOSH RECOMMENDED CRITERIA FOR A NEW NOISE STANDARD

In 1970 Congress passed the Occupational Safety and Health Act. Its purpose was to assure safe and healthy working conditions for all working men and women. In this Act, the National Institute for Occupational Safety and Health (NIOSH) is tasked with researching health and safety hazards and exposures in work environments that may cause workers to suffer diminished health, functional capacity, or life expectancy. NIOSH is then responsible to report research findings and recommend standards to regulatory agencies such as the Occupational Safety and Health Administration (OSHA).

the Occupational Noise Exposure Standard, currently being enforced by OSHA, to the recent recommended standard by NIOSH.

If the proposed standard is adopted by OSHA, several aspects of your current hearing conservation program will need revision. IHT has already taken the necessary steps to assist with your compliance. For example, all noise surveys conducted by IHT in 1999 will have been conducted under the criteria of both the current OSHA standard, as well as the proposed standard. The data collected using the NIOSH criteria can be made

OSHA

- Noise Survey - Initial monitoring must be conducted to identify exposures exceeding 85 dBA TWA
- 85 dBA TWA Action Level - Requires annual audiometric testing employee training, and recordkeeping. Hearing protection must be made available but not enforced.
- 90 dBA TWA Permissible Exposure Limit - Level at which hearing protection must be enforced when engineering or administrative controls are not feasible.
- 5 dB Exchange Rate - Every increment of 5 decibels results in double the sound energy therefore requiring half the allowable exposure time.
- Standard Threshold Shift - Average change in hearing threshold level of 10 dB or more at 2k, 3k, and 4k Hz, relative to the baseline.

NIOSH

- Noise Survey - Initial monitoring must be conducted to identify exposures exceeding 85 dBA TWA.
- Monitoring must be repeated every 2 years for all workers exposed to 85 dBA TWA or greater.
- 85 dBA Recommended Exposure Limit - Requires annual audiometric testing, employee training, and recordkeeping. Hearing protection must be enforced.
- 3 dB Exchange Rate - Every increment of 3 decibels results in double the sound energy, requiring half the allowable exposure time.
- Significant Threshold Shift - Change of 15 dB in hearing threshold level at any frequency.

In June of 1998, NIOSH submitted to OSHA recommendations for a new Noise Standard. The revised recommendations are based on an evaluation of the latest scientific data and serve to update the recommendations previously made in NIOSH's 1972 publication. If the new standard is adopted, NIOSH feels the risk of developing an occupational noise-induced hearing loss (NIHL) would be reduced to 8%, considerably lower than the current risk of 25% for the permissible exposure limit (PEL) being enforced by OSHA.

The publication recommends several major changes to the current OSHA standard. The following list compares

available if necessary. If you have any questions regarding this new proposal, our staff is always eager to assist you.

~ Steve Yany, *Operations Manager*

On a very cold, snowy Sunday in February, only the pastor and one farmer arrived at the village church. The pastor said, "Well, I guess we won't have a service today." The farmer replied, "Heck, if even one cow shows up at feeding time, I feed it." The pastor obliged and did the entire service. As the farmer was leaving, the pastor said, "How did I do?" "It was OK," the farmer replied, "but if only one cow shows up at feed time, I don't drop the full load on it."

A PREGNANT PAUSE

I received a call the other day from a Hearing Conservation Program Administrator who is also an occupational health nurse at a large manufacturing plant. She posed a very interesting question. A pregnant employee who works regularly in a hazardous noise area expressed her concerns to this nurse about any possible damaging effects on the development of her child. I passed this question on to Dr. Hengen, our audiologist, who gathered some research on it from the Australian conference.

He found that a recent study on sheep has just been published. (At first I thought sheep were selected because of their ears being most human-like for comparison. Actually, chinchilla ears have that quality.) Pregnant ewes were subjected to high noise levels. After delivery, their offspring were found to have loss of hearing. Autopsies on their inner ear revealed damage to the cochlea. These results are not particularly surprising since it has been known that in humans, sound from the outside environment easily crosses the intrauterine wall to the fetus.

Additional data from a very large study conducted in China gives one pause to wonder about noise exposure and its related effects upon the female reproductive system. Over 26,000 young women workers in the textile industry were studied. Noise intensity levels were found to have negative effects upon: their menstrual cycle function, impacting regularity, flow rates, ability to become pregnant, and ability to carry to term.

In another study, birth weight was investigated. The incidence of abnormally low birth weight increased among babies born to mothers exposed to noise during their pregnancy. Within the population studied, on average, 7% of babies born weigh less than 2000g. Those born to noise-exposed mothers had a low birth weight incidence of 9.1%, considered to be a significant increase over the 7% average.

Though these studies suggest that noise exposure at

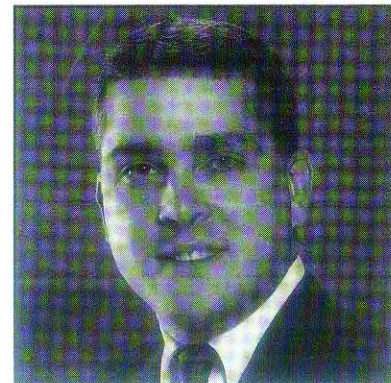
levels of 90dBA and above may have a negative effect upon female reproductive function, pregnancy, and hearing levels of the fetus, there is not yet a final conclusive verdict.

So with that challenge, the nurse in this story took this information back to management. She noted that there were many successful pregnancies at this facility previous to this incident, with no problems that she was aware of. Of course, development of policies is an ongoing process within management, and a delicate balance to find. One must interpret these findings and their unfounded potential, and of course do what's best for both the exposed employee, yet within the parameters of how much the employer is able to reasonably accommodate for their workforce. They began working on a policy at their plant. They decided to focus most immediately on women in their third trimester, taking many things into consideration for example, trying to relieve lower back strain, quieter work area, and less stressful conditions where as a noise level can at times be stressful. The nurse is now happy to report that they are now currently working on an outline for a policy to ensure the safety of the expectant mothers and their babies. She commends her management for their willing and pro-active attitudes.

DID You KNOW?

In our ongoing efforts to maintain quality controlled service, we have developed a corporate policy over time that our customers will not have to contend with voice mail! We insist upon providing a pleasant, live receptionist (Barbara) who can forward your calls promptly and appropriately, or take a detailed message. From our point of view, this is a positive feature for our customers! We hope you enjoy!

If no one ever took risks, Michelangelo would have painted the Sistine floor.



Supervisor of Information Systems

Joe Houle

• CAOHC Certified

• Sound Surveys • Mobile Unit Scheduling

W E L C O M E

A warm welcome goes out to Joe Houle, who has joined our company as Supervisor of Technology. Joe will be involved in sales and customer service issues. He will dedicate much of his time to projects such as keeping our new website updated with useful information for our customers, and keeping our computer community running smoothly to provide the best service for our customers! Joe comes to us with over 13 years management experience and extensive expertise in internet communications. We welcome him warmly, and look forward to a long career with IHT.

We've Moved!



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