

INDUSTRIAL HEARING TESTING

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Volume 6

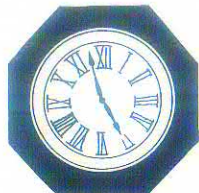
No. 1

HAVE YOU HEARD

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

Hearing Conservation Products & Services

- Noise Surveys
- Customized Employee Training Sessions
- Hearing Protection
- Audiometer Sales
- Equipment Calibration
- Recordkeeping Software
- Posters & Support Literature
- Audiological Referrals



Office Hours

Monday - Friday
8:00 AM - 4:30 PM
Closed weekends
Tel. (508) 832-8484

PERSONALLY SPEAKING

There's this stone in my yard. It's probably always been there, and most likely it's older than me, and it's just heavy enough that I can't quite manipulate it where I want it. Every couple of days, I work on moving this stone closer to serve as Chester's headstone. It has proved to be a therapeutic process, wrestling with the rock, and my grief. It's actually a remotely amusing saga getting my noble canine buried. He was diagnosed with cancer a short while ago.

I had a plan. I asked a friend to dig a hole with the tractor, so that I could put Chester down at home, but that didn't seem a certainty because the tractor broke. I was going to walk down to this hole with all the pets, so they would all know where Chester went. (I know, I know, there is absolutely a limit to anthropomorphism...) When I couldn't find the planned upon hole, I called my vet friend, and sadly told her I had to come into her office to end his life. She met me on a Sunday eve; we did the deed and I left him at the clinic.

When I got home, I found that hole, which had been there all along. By the next morning I was sitting in the driveway of the vet hospital, my hair rather unkempt, muttering, looking like a madwoman. I didn't yet have the courage to go in and ask for him back, afraid she'd be mad at my temporary lapse of reason, so I left without the dog.

During the night I had discovered I could not mentally dissolve this concept of eternity. I hated the thought that my buddy was going to end up in an unmarked mass grave. After all, I had known of Chester's whereabouts most moments of the 12 years that I was his pet.

I attempted to work a few hours that day, but finally ended up back at the vet's asking for my dog back so that I could bury him. She wasn't exactly surprised to see me, just a bit nervous as she cautiously explained he was in a "consolidated position." The thought occurred to me that I was actually happy to have a frozen corpse in my trunk, and wouldn't that make an interesting traffic stop for some unsuspecting police officer...

I had to teach my riding lessons that night, so I figured, Chester could wait till I got home; after all, he was dead. Before I departed, I wheeled him onto my horse trailer for safekeeping,



**Look for the next series of wildlife cards
like this one, coming to you soon,
to help raise awareness about noise!**

Continued on page 2

chuckling to myself that he, in life, was horrified with riding in wheelbarrows. I returned home later that night to conduct his flashlight burial and funeral. My sister helped me move the earth over him as my mom steered the flashlights. Earlier that day I had met a complete stranger, who, after a heavy-hearted conversation, had handed me a piece of paper. When I opened it, it turned out to be a beautiful reading (the one about there's a time to plant, a time to harvest, a time for sorrow, a time to dance...), that we read out loud.

I find it interesting that grief is a journey, certainly not a destination. I admit, I haven't had a lot of it in my life, but I have learned no one should try to judge how heavy or sorrowful someone else's burden may be. For as I struggle to move the stone, each time gets me closer to something.

I know you're probably wondering what any of this has to do with hearing conservation: absolutely nothing. But that's why this column is mine, and the rock and the dead dog perhaps never were.

I think this newsletter is to provide our clients, associates and potential customers a closer look at who we are. (Don't let that thing about the corpse in the trunk scare you off...)

I believe our company members concentrate on providing the best service. All of our job titles are listed with our faces, so that our combined experiences may assist you in something you might need. If there is anything at all we can do to help you with your Hearing Conservation Program, don't hesitate to ask us.

My brother Scott wants me to mention that we now have two new trailers on the road, bringing the count to eight. We replaced the smaller unit in Maine with a new eight person capacity rig,

and we sent the newest trailer to a new hub in Vermont. We now have what we like to call our customer's "insurance policy." This includes a spare trailer assigned to fill in for any emergency situation, and ten trucks to service any trailer, so we can get to the scheduled job as promised. Our area of coverage still includes the nine northeastern states in case you have any other facilities needing service.

Dr. Hengen officially retired from his private practice, and we congratulate him for those 24 years, though we won't let him off the hook that easily. He will be dedicating more of his time to IHT, delivering the reports to meet our new clients. And for those of you who talk to Steve, and are familiar with his engineer's precision personality, he recently built a new house, probably funded from his continued top sales performance!

In this issue you will find a chart to help understand a range of noise levels from the lawn mowers to gun shots. Post this somewhere your employees can see it. Hopefully it will help emphasize the importance of hearing protection both on the job and at home. There is a pull-out feature article comparing the existing OSHA, the new MSHA, and proposed NIOSH regulations. MSHA requires implementation as of September of 2000. NIOSH has no definitive consensus yet on any deadline, but there are great ideas put forth by this group which strive to go beyond the minimum of the existing OSHA requirements, hopefully preventing more noise-induced hearing loss.

Yours,

ANDI HENGEN, Editor

Work is a mysterious thing; many of us claim to hate it, but it takes a grip on us that is so fierce that it captures emotions and loyalties we never knew were there.

HONOR ROLL CLUB

As is our custom, we like to give honorary mention to those clients of ours that have passed the 10 year mark with an Hearing Conservation Program intact. We would also like to extend our sincere gratitude and appreciation for their patronage through these years as well.

American Insulated Wire

Sandra Rinebolt

Barber Foods

Peter Bickford

Brimfield Precision

Mike Moriarty

Comtran Corp.

Brad Exoo

George Dean Co.

Wendy Wilhelm

J. D'Addario & Co. Inc.

Edna Chu

Dav-Tech Plating

Avery Dennison/Fastener Div.

Ray LeBlanc

Gloucester Co. Inc.

John Krauth

Echo Industries

Maynard Southard

Empire Industries Inc.

Ron Schauster

Killeen Machine Tool Co.

Dean Meersman

Lavigne Press, Inc.

Denise Phipps

Loos & Co

Michele Integlia

Lydall & Fould Inc.

Chris Scranton

Madison Wire & Cable

Nikki Deary

Mercury Wire Products

Scott Bishop

Montrose Products

Jon DeGon

N-E-D Corp.

Dave Stoddard • Dave Wheeler

Package Industries

Miriam Sanderson

Parker & Harper Mfg. Co.

Dave Pare

Prolerized New England Co.

Andy Morrison

George Saad & Sons, Inc.

Darryll Saad

Specialty Aluminum Inc.

Ralph Dahlgren

Titeflex

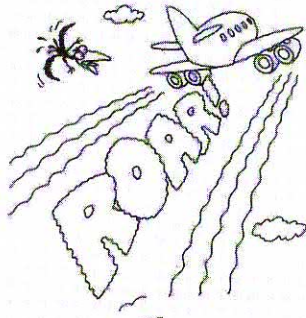
Richard Steinert

Don't ever take a fence down until you know why it was put up.

~ Robert Frost

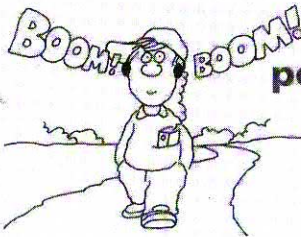
Noise destroys your hearing

Decibels (A weighted) - dB(A)



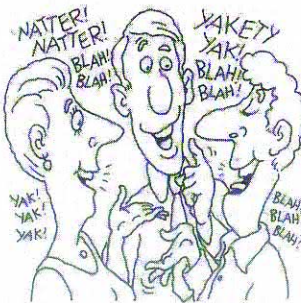
jet aircraft takeoff

(25m away)



angle grinder
personal stereo

(maximum volume)



conversation

microwave oven



quiet office
conference room

library

bedroom

gun shot

rattle gun

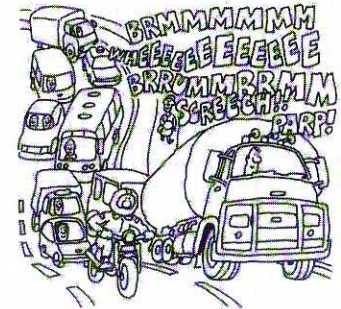
pneumatic hammer
noisy disco



chainsaw

circular saw

ride-on mower
jigsaw



busy road

loud radio

vacuum cleaner

business office

washing machine

dishwasher
living room



countryside

leaves rustling

sound studio



100dB	1 minute
90dB	15 minutes
87dB	30 minutes
84dB	1 hour
81dB	2 hours
78dB	4 hours
75dB	8 hours

How much noise is too much in one day?

The World Health Organisation recommends a maximum continuous noise exposure of **85dB(A) for 8 hours per day**. Hearing damage risk is negligible below 75dB(A). For each extra 3 decibels louder, the noise is **twice** as strong and so the exposure time should be **halved**.

threshold of normal hearing
(this does not mean that there is no sound)

NOTE:
The above noise level values are approximate only and should not be taken as specifying the noise level of a particular machine, device or event. Values indicated should be taken as a guide only.

Damage your hearing and it won't come back

ISSUE	DESCRIPTION & DEFINITION	OSHA 29 CFR 1910.95	MSHA 30 CFR PART 62	NIOSH PUB. NO. 98-126
Action Level (AL)	The time-weighted average (TWA) exposure which requires program inclusion, hearing tests, training, and optional hearing protection.	AL = 85 dBA TWA. AL is exceeded when TWA \geq 85 dBA, integrating all sounds from 80 - 130 dBA.	Similar to OSHA, except integration is for all sounds from 80 to at least 130 dBA.	Does not have AL; rather has a single Recommended Exposure Limit (REL, see next row) for hearing loss prevention, noise controls, and HPDs.
Permissible Exposure Limit (PEL)	The TWA, which when exceeded, requires feasible engineering and (MSHA) or (OSHA) administrative controls, and mandatory hearing protection.	PEL = 90 dBA TWA. PEL is exceeded when TWA $>$ 90 dBA, integrating all sounds from 90 - 140 dBA, as inferred from Table G-16 of 1910.95(b).	Similar to OSHA, except integration range is explicit in the reg. (62.101, Definitions), and is for all sounds from 90 to at least 140 dBA.	REL = 85 dBA TWA. REL is exceeded when TWA \geq 85 dBA, integrating all sounds from 80 - 140 dBA.
Exchange Rate	The rate at which exposure accumulates; the change in db TWA for halving/doubling of allowable exposure time.	5 dB	Same as OSHA.	3 dB
Ceiling Level	The limiting sound level above which employees cannot be exposed.	No exposures $>$ 115 dBA SPL; generally interpreted as "no unprotected exposures" to give credit for HCP, HPDs and feasible engineering controls.	"P" code violation issued for any protected or unprotected exposures $>$ 115 dba SPL.	No protected or unprotected exposure to continuous, varying, intermittent, or impulsive noise $>$ 140 dBA.
Impulse Noise	Noise with sharp rise and rapid decay in level, \leq 1 sec. in duration, and if repeated, occurring at intervals $>$ 1 sec.	To be integrated with measurements of all other noise, but <i>should</i> not exceed 140 dB peak SPL.	To be integrated with measurements of all other noise.	To be integrated with measurements of all other noise, but not to exceed 140 dBA.
Monitoring	Assessment of noise exposure.	Once to determine risk and HCP inclusion; from there as conditions change resulting in potential for more exposure.	Mine operator must establish system to evaluate each miner's exposure sufficiently to determine continuing compliance with rule.	Every 2 years if any exposure \geq 85 dBA TWA.
Noise Control	Investigation and implementation of feasible engineering and administrative control measures.	Feasible controls required where TWA $>$ 90 dBA; subsequent compliance policy (which may be changed/revoked by OSHA at any time) permits proven effective HCP in lieu of engineering where TWA $<$ 100 dBA.	Feasible engineering and administration controls required for TWA $>$ 90 dBA; even if controls do not reduce exposure to the PEL, they are required if feasible (i.e. \geq 3 dBA reduction). Administrative controls must be provided to the miner in writing and posted.	Feasible controls to 85 dBA TWA. Administrative controls must not expose more workers to noise.
Hearing Protection	Exposure requirements and conditions for use of hearing protection devices (HPDs).	Optional for \geq 85 dBA TWA; mandatory for $>$ 90 dBA TWA, or for \geq 85 dBA TWA for workers with STS. Protect to 90 or to 85 with STS. Choices must include a "variety" which is interpreted as at least 1 type of plug and 1 type of muff.	Use requirements same as OSHA, but amount of protection not specified, and choices must include 2 plugs and 2 muffs. Double hearing protection (muff plus plug) required at exposures $>$ 105 dBA TWA.	Mandatory for \geq 85 dBA TWA; must protect to 85. Double hearing protection (muff plus plug) recommended at exposures $>$ 100 dBA TWA.
Evaluation of Hearing Protector Effectiveness	Method of assessing adequacy of HPDs.	Use manufacturers' labeled NRRs to access adequacy, but subsequent compliance policy stipulates 50% derating of NRRs to compare relative effectiveness of HPDs and engineering controls.	No method included in standard. Preamble to regulation indicates that compliance guide will follow with suggested procedures.	Labeled NRRs must be derated by 25% for muffs, 50% for foam plugs, and 70% for other ear plugs unless data available from ANSI S12.6-1997 Method B.
Supervisor of Audiometric Testing	The person who is responsible for the conduct of audiometric testing, and is the reviewer of audiograms.	Licensed or certified audiologist, otolaryngologist, or other physician.	Licensed or certified audiologist, or physician.	Audiologist or physician.
Audiometric Technician	The person who conducts audiometric testing and review.	Must be responsible to supervisor (see above). CAOHC certified, or has demonstrated competence to supervisor. When microprocessor audiometers are used, certification not required.	Must be under direction of supervisor (see above). Must be certified by CAOHC or equivalent certification organization.	Must be under direction of supervisor (see above). Must be certified by CAOHC or equivalent certification organization.

ISSUE	DESCRIPTION & DEFINITION	OSHA 29 CFR 1910.95	MSHA 30 CFR PART 62	NIOSH PUB. NO. 98-126
Audiometry	Initial and ongoing hearing tests used to assess the efficacy of hearing conservation measures.	Required annually for all workers exposed \geq 85 dBA TWA. Baseline test within 6 months of exposure; 12 months if using mobile testing service, with HPD in the interim.	Same as OSHA but choice of whether or not to take an audiogram is at miner's discretion.	Required for all workers exposed \geq 85 dBA TWA. Baseline test pre-placement or within 30 days of exposure. Best practice is to test workers exposed $>$ 100 dBA TWA twice per year.
Quiet Period Prior to Baseline Audiogram	Period of non-exposure to workplace noise required prior to baseline audiogram.	14 hrs; use of HPDs acceptable as alternative.	Same as OSHA.	No exposure to noise \geq 85 dBA for 12 hrs; HPDs can not be used as alternative.
Background Noise	Permissible noise in audiometric test chamber during testing.	Levels specified as 40 dB @ 500 and 1000 Hz, 47 dB @ 2000 Hz, 57 dB @ 4000 Hz, and 62 dB @ 8000 Hz.	According to scientifically validated procedures.	Per ANSI S3.1-1999 or latest revision; 19 dB more stringent than OSHA at 500 Hz, and 13 to 25 dB more stringent at other frequencies.
Audiogram Review and Employee Notification	Required actions following audiograms.	Not specified unless STS is detected; See STS follow up.	Audiograms must be reviewed within 30 days and feedback in writing for each miner within 10 days thereafter.	Not specified unless STS is detected; see STS follow up.
STS (OSHA/MSHA-Standard Threshold Shift; NIOSH - Significant Threshold Shift)	A change in hearing compared to an earlier (baseline) hearing test that requires follow-up action.	\geq 10 dB average shift from baseline hearing levels at 2000, 3000 and 4000 Hz in either ear.	Same as OSHA.	\geq 15 dB shift for the worse from baseline at any test frequency, in either ear, confirmed with follow-up test for same ear/frequency.
STS Retests	Follow-up audiogram that is permitted or required when initial STS is detected.	May obtain retest within 30 days and substitute for annual audiogram.	Same as OSHA.	Must provide confirmation audiogram within 30 days.
STS Follow-up	Required actions when an STS is detected.	Notify worker within 21 days; unless STS is not work-related, must fit or re-fit employee with HPDs and select higher attenuation if necessary, refer for audio/otological exam if more testing needed or problem due to HPDs, and inform employee of need for exam if problem unrelated to HPD usage is suspected.	Notify worker within 10 days; unless STS is not work-related, must retrain the miner, provide miner an HPD or a different HPD, and review effectiveness of any engineering and administrative controls to correct deficiencies.	Notify worker within 30 days; must take action such as explain effects of noise, reinstruct and refit with HPDs, provide additional training in hearing loss prevention, or reassign to quieter area.
Baseline Revision	Procedures for revising the baseline audiogram to reflect changes in hearing.	Annual audio substituted for baseline when STS is <i>persistent</i> or thresholds show significant improvement.	Annual audio substituted for baseline when STS is <i>permanent</i> or thresholds show significant improvement.	Annual audio substituted for baseline when confirming audiogram validates on STS.
Presbycusis or Age Correction	Adjustments for hearing Levels for anticipated effects of age.	Allowed.	Same as OSHA.	Not allowed.
Recordable or Reportable Hearing Loss	Amount of hearing loss triggering reporting requirements on workplace injury/illness logs.	By OSHA directive, \geq 25 dB average shift from original baseline at 2000, 3000 and 4000 Hz in either ear, w/ age correction; rule change pending.	\geq 25 dB average shift from baseline, or revised baseline, at 2000, 3000, and 4000 Hz in either ear.	Not indicated.
Training and Education	Description of the annual training and educational component of the hearing conservation program.	Annual for all employees exposed \geq 85 dB TWA on effects of noise, HPDs, and purpose and explanation of audiometry.	Same as OSHA, except must begin within 30 days of enrollment in HCP, and include description of mine operator and miner's responsibilities for maintaining noise controls.	Same as OSHA, but must also include psychological effects of noise, and roles and responsibilities of both employers and workers in program.
Warning Signs and Postings	Requirements to post signs for noisy areas or to post regulations.	Hearing conservation amendment shall be posted in workplace.	No requirements for posting reg., but when administrative controls are utilized the procedures must be posted.	Signs must be posted at entrance to areas with TWAs routinely \geq 85 dBA.
Record Retention	Specification on retention of data, and transfer requirements if employer goes out of business.	Noise surveys for at least 2 yrs., hearing tests for duration of employment, with requirement to transfer records to successor if employer goes out of business.	Employee noise exposure notices and training records for duration of enrollment in HCP + 6 months, and hearing tests for duration of employment + 6 months, with requirement to transfer records to successor mine operator.	Noise surveys for 30 yrs., hearing tests for duration of employment + 30 yrs., calibration records for 5 yrs., with record transfer per 29CFR1910.20(h).

NEWBORN INFANTS

As of July 1, 2000 Connecticut implemented the **Universal Newborn Hearing Screening Program (UNHS)** with assistance from the Department of Public Health (DPH). Early detection of hearing loss is the key to successful rehabilitation of infants and toddlers.

Through this initiative all infants will be screened for hearing loss at the facility of birth, prior to discharge. With this new mandate, it is expected that 450-900 infants (1-2%) will be referred for diagnostic hearing testing. For more information on this wonderful new program contact DPH at **860-509-8081** or Birth to Three at **800-505-7000**.

MUSIC MEN!

You never know all of the talents that your fellow employees have. Most of the time these talents remain secret until... Surprise they suddenly surface with a flourish. This happened recently with, not one - but two, of our Audiometric Technicians.

Dave St. George and Chuck Squire recently surprised all of us, here at the office, by appearing in a production of **MUSIC MAN** at Stageloft Theater in Sturbridge, MA. We knew that they sang together in a barbershop quartet, but had no idea they had acting talents as well.



The revues came back very favorably from all the attendees from the office, as well as the dramatic critic from the Worcester Telegram.

It's amazing to find out that the people you work with are more than just faces across from you at work. We all tend to take a lot for granted in life. Most of us never stop to realize that the person you work with actually has a life outside of work. When we add to our basic knowledge of "that" individual, we become a little closer as a family.

At **INDUSTRIAL HEARING TESTING** we think of ourselves as "Family." When we first started out, we were a small family business. As we have grown over the last few years and have added personnel, we still consider each and every one here to be family. And we are extremely proud of every one of our family members, both on and off the job.

Thank you Dave and Chuck for giving us even more to brag about!

JUST IN CASE...

Sometimes an employee misses the test on the date the mobile unit is on your premises. Remember, if these employees are exposed to 85dB TWA, you must somehow ensure they are still included in the program. Make-up tests and training for absentee employees, or those you may wish to retest, can be acquired either of two ways: we offer a "return visit" with the trailers, already notated on your contract for a reduced fee, or you may select a local clinic or hospital for these retests.

If you have the trailer out for retests, we will again provide the training portion. Since you must complete testing on any absentees, this may be a more cost efficient option than you first thought. You do have a choice on retesting those employees with any standard threshold shift (STS) in their results, though we encourage you to retest them if you are able. Just call our scheduling department to arrange for this return visit.

Should you choose the latter, certainly review these items when making the test arrangements elsewhere: 1) verify the price of course, 2) tell the agency you wish prompt service at the appointment time you are given so the employee's time is not wasted, and 3) be sure to tell them the frequencies to be tested to meet the OSHA requirements. You'll need 500, 1000, 2000, 3000, 4000 and 6000 Hz and these thresholds need to be reported back to you in numerical form. If any single frequency is omitted, the test is worthless for use to satisfy OSHA rules, and results in useless data and wasted time and money. Of course, if you are local to the Worcester area, you can send employees to our Auburn office for these retests.

Finally, find out if the educational component will be covered at this visit and documented.

Be sure to send our office the data, as we will put these tests into the master database and provide a letter back to you and the employee regarding their results.

are you **PREPARED** for the **MSHA** NOISE STANDARD?

www.industrialhearing.com

As of September 13, 2000, MSHA's final rule requiring a Hearing Conservation Program must be in place.

how **loud** is it?



Do you have a current sound survey on file? We can help get you started!



WE MOVED!

Please update your address files!

**19 Midstate Drive • Suite 220
Auburn, MA 01501-1865**

508-832-8484 • Fax 508-832-3199

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Website: www.industrialhearing.com

Please forward to Hearing Conservation Program Administrator

RETURN SERVICE REQUESTED



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