

Industrial Hearing Testing

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Volume 9
No. 1

Hearing Conservation Products & Services

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

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We're on the web!

industrialhearing.com

Office Hours

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

Personally Speaking....

Can You Help Prevent Noise Induced Hearing Loss?

I hope you will share a few minutes of your time with me. Take a break from the endless list of duties of your safety management jobs to embark on this short journey as we investigate your sense of hearing. Perhaps you've not heard from me, or our company or our people before, or perhaps you've read some or all of my newsletters . . . then you know we love to talk about safety of workers, and eventually, I get to our most important mission, protecting our hearing!



But just for a moment . . . close your eyes right there at your desk or the mailbox you pulled this from. As you shut off your sense of vision by closing your eyes, start to focus on what you hear. Perhaps you've worked at your office so long, you think you know all the sounds dancing to your ears . . . the copy machine, the telephone ringing, the intercom, and yes, Susan's footsteps in that kitchen room . . .

Ah, but listen. What would life be like without your ability to hear those seemingly minor or incidental background sounds that add so much incredible detail to your life? You would be missing so many cues to your feelings about your environment without the sounds around you.

Now, take this next step. Try to concentrate on voices. Do you hear someone talking? Where is that voice? Who is it? Is it someone you recognize or does it sound as if it is a stranger? Usually, these impressions are answered and processed mentally for us without much pause.

If hearing loss prevented you from experiencing these small, soft background sounds, what feelings would you lose? Certainly you would lose your orientation in space with the others around you and your environment. Maybe it's windy or raining outside; perhaps more clues that we sometimes take for granted would be lost.

Hearing loss changes people. It changes their personalities in ways hard to imagine. Now if this loss affected even louder sounds, such as normal speaking nearby as in everyday conversation, what would that be like? Loss of hearing fractures the spoken message you thought you heard. Loss begins to force the person struggling to watch people as they talk, maybe trying to read their lips or expressions, gleaning as many visual clues as possible. It would leave you wondering why some messages made no sense. So you would learn to smile at the talker: to smile as if you understood what was said when in fact you were only trying to make a good guess, not really hearing the

Continued on page 2

Personally Speaking (cont.)

details of the sounds that make words. It becomes increasingly difficult to socialize. It becomes even harder to listen! How do you listen if you hear poorly?

People who hear poorly begin to feel alone and isolated from every day conversation. Eventually family members discover you no longer wish to socialize as you once did. Music loses its luster and movies, radio shows become unclear. The fight to turn down the television becomes not worth it for some of the people near you. This lack of clarity leads to lack of interest in all things auditory. For most, it forces them into a deeper emotional isolation. Perhaps some of you safety and health experts recognize your own parents or family members suffering from some of these symptoms.

The most common cause of hearing loss among the general population is presbycusis, which is sensorineural hearing loss due to the natural aging process. The onset and magnitude vary greatly among individuals. The second most common cause is NOISE INDUCED hearing loss. About 10% of the general population overall has some loss of hearing. Among those who work in noise, the incidence of hearing loss ranges from 40% to 80%. So it appears that those who work in noise have a much higher rate of loss than those who work in quiet.

A symptom of noise induced hearing loss is tinnitus. This is a ringing in one's ears that becomes more and more constant over time and more exposure. Did you know that Beethoven's career as one of the more incredible piano players and composers was shortened from his struggle with a disease that caused him to be completely deaf for the last 10 years of his life? The beginning of his malady was an occasional whistling or buzzing in his ears, tinnitus, which eventually became constant, followed by not being able to hear speech. He avoided socializing early in his time of fame, and was able to compose music on paper rather than hear it. He left a written document called the "Heiligenstadt Testament" not to be opened before his death, but in the document expressed his sorrow at being socially misunderstood from his "lasting malady," his deafness. "With joy I hasten to meet death, for he shall free me of constant suffering."

Studies have begun to reveal correlations between noisy classrooms and noise induced hearing loss patterns of both teachers and elementary grade students. Sporting events, auto races, and music concerts favored by youth forewarn us of the deterioration of hearing sensitivity of young people due to high levels of noise exposure.

As we mature into the workforce we must be aware of the preventative measures available to us to protect our hearing. It seems, too, that as wise and informed parents and safety experts, we need to protect our children and our employees from the excessive noise of their everyday lives.

So the message rings loud and clear (to those who hear normally - pun intended), that **NOISE INDUCED HEARING LOSS IS PREVENTABLE!** Please read through the rest of this newsletter to see if there are any helpful suggestions to help strengthen your Hearing Conservation Programs, and perhaps you'll also appreciate some of the record keeping clarifications found in this volume. We offer our help of course with any of these issues or questions that you may have in our mission to try and prevent noise induced hearing loss.

Yours,
ANDI HENGEN, *Editor*

**"There are only two ways to live your life.
One is as though nothing is a miracle.
The other is as though everything is."
Albert Einstein**

2005 CAOHC COURSE COMING!

3 Day Certification Class

August 16, 17 & 18, 2005

Auburn, Massachusetts

1 Day Recertification Class

October 19, 2005

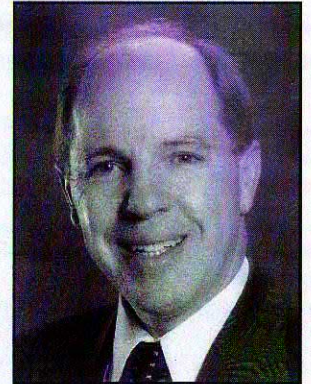
Auburn, Massachusetts

Call IHT 508-832-8484 for more information.

Check our website for additional dates!

Hearing Loss Prevention - Program Management

Dr. Steven Fournier



In my role as Corporate Audiologist for our clients, I am dedicated to the identification of hearing loss; especially noise induced hearing loss because this is a **preventable** injury. It is so important to interpret the audiological test results accurately, so that you may react to prevent any further damage to the noise-exposed workforce. There is no substitute for normal hearing.

It seems there has been some confusion about what credentials are necessary to have in the management of a company's hearing conservation program. CFR1910.95 **mandates** that an audiologist or physician oversee these programs. This role is to review problem audiograms and determine whether there is a need for further evaluations. This person must be knowledgeable about the OSHA regulations, hearing loss recordkeeping, STS calculations and act as the professional supervisor to the people who may be gathering this data. At our Auburn office I review audiograms collected by our CAOHC technicians, and look for any pattern that may be a warning. The professional supervisor's role is a critical component of this program for success.

Every new customer receives his or her first report delivered by us in person. My job and our company's role is to help the safety manager understand OSHA's minimal mandates within the law, and help you to implement the most appropriate program strategies for a successful hearing conservation program. At this report delivery meeting, we review the test results, discuss any questions, and review any necessary follow-up actions your company must take. We have a team of experts who are knowledgeable in every facet of the law. We at our company, look forward to the prospect of working with you to help your employees protect and preserve their hearing!

I am a certified Course Director for Council for Accreditation in Occupation Hearing Conservation, (CAOHC), and will be continuing with Dr. Hengen's and Industrial Hearing Testing's tradition of providing CAOHC certification courses. The value of the certification cannot be overstated. We encourage all safety personnel who may be involved with your company's hearing loss prevention efforts to apply themselves to this course.

CAOHC is a non-profit organization whose mission is to promote healthy hearing by enhancing the quality of occupational hearing conservation programs. Certification provides nationally recognized credentials as a certified occupational hearing conservationist, (COHC), for which the certification is applicable for five years. Then, a COHC need only take a 're-certification' (refresher course) every 5th year to stay abreast of any regulatory changes or necessary updates.

This training includes the following:

- Basic anatomy & physiology of the ear
- Type and use of audiometric instrumentation
- Causes of hearing loss
- Audiometric testing and follow-up of significant findings
- Employee feedback and criteria for referral
- Basic concepts of noise measurement and control
- Selection, fitting, and use of hearing protection
- Employee education and motivation in hearing conservation
- Hearing conservation standards and regulations
- Recordkeeping

I am pleased to announce that our next certification courses have been scheduled and there are still more to come. Please check our website or call for additional course availability.

Dr. Steven Fournier, Corporate Audiologist for IHT, has had nearly 30 years experience in Hearing Conservation and Clinical Audiology & Rehabilitation. Dr. Fournier served 23 years as Director of Audiology at University of Massachusetts Medical Center Hospital. He has been on the faculties of University of Massachusetts School of Medicine and Worcester State College.

Improvements in Customer Services

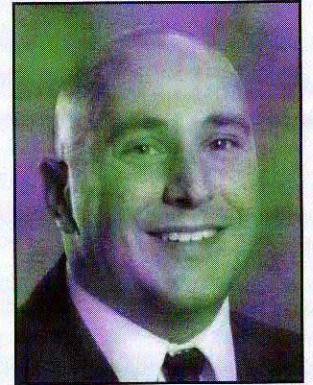
By Steven A. Yany, B.S.M.E.

The staff and founders of IHT have always taken great pride over the years delivering a service focused on protecting the hearing of the many workers exposed to noise every day on the job. For those of you who are not aware, our company mission statement is as follows: *IHT strives to provide the highest-quality Hearing Conservation service available by constantly improving our technological capabilities, as well as the performance of our staff.*

As our company develops and matures, many innovative changes have been implemented with the above mission statement in mind. I thought I would take this opportunity to illustrate some of these changes designed to further prevent occupational hearing loss and make the overall deliverance of the service smoother for you. Here are some of the highlights:

- **New audiometric equipment & software installed on all 12 trailers in the fleet.** Each audiogram includes the test frequency of 8K Hz and double tone presentation for improved response. Employee personal information is protected by encryption of data.
- **Employee notification letters available in Spanish.** You may have noticed there is a place on the employee questionnaires to indicate preferred language. The duplicate copy is in English.
- **Audio test instructions may be given in Spanish.** Instructions on the purpose, and proper procedures for taking an audiometric test can be provided in Spanish.
- **Significant Threshold Shifts will be verified on the same day.** Employees demonstrating an average threshold shift that exceeds 30 dB will immediately be asked to return to the trailer for a verification retest.
- **On board Notification Letters – Makes life easy** – This is an option for those companies who need instantaneous results for that day's testing only.

- **CAOHC Courses are back!** We have two course directors on our staff, Dr. Fournier & Dr. Hengen. Check our website for course dates and locations across the Northeast, or call 508-832-8484 for current updates of additional courses.



- **IHT has increased our presence across the Northeast with additional mobile units!** We now have 12 mobile units stationed in 11 major cities, providing a local presence in **Worcester, MA; Littleton, MA; Springfield, MA; Providence, RI; White River Jct., VT; Portland, ME; Waterbury, CT; Albany, NY; Syracuse, NY; Rochester, NY; Allentown, PA.**
- **All trucks have been replaced for greater durability and dependability.** This includes additional spare trucks for any breakdown coverage. Our growth and expansion continues!



IHT celebrates with a Holiday Lunch.

Visit our Web Page!
industrialhearing.com

Frequently Asked Questions...

By Jennifer DeSimone, B.A.

Q: What does the term STS mean?

A: STS is the abbreviation of standard threshold shift. STS signifies an average change in hearing of 10 dB or greater over the frequencies of 2K, 3K and 4K Hz when current test results are compared to the baseline test.

Q: Why is one of my employees recommended for a retest due to STS but he/she is not OSHA recordable?

A: When an employee demonstrates an STS, retesting is recommended. However, there are 2 criteria for OSHA recordability. STS and hearing levels other than normal will identify an employee as OSHA recordable. If the employee has demonstrated an STS, but his/her hearing level is within normal limits, the employee will not be OSHA recordable.

Q: Do I have to retest my employee if there is an STS?

A: You are not required by law to retest. A retest will be recommended to take place within 30 days of notification. If you decide not to retest, you must re-fit hearing protection, re-train on the use and care of hearing protection, mandate the use of hearing protection until the employee is retested.

Q: Do I have to retest my employee if he/she is OSHA Recordable?

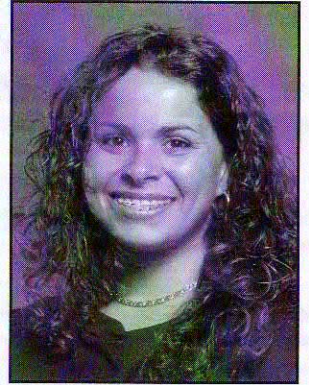
A: You are not required by law to retest. A retest will be recommended to take place within 30 days of notification. If you decide not to retest, you must place the employee information on the OSHA 300 log. Re-fit hearing protection, re-train on the use and care of hearing protection and mandate the use of hearing protection until the employee is retested.

Q: If I have documentation for an employee that states the hearing loss is not work related, is he/she still OSHA recordable?

A: No. The documentation from the physician or audiologist must state that the hearing loss is caused by a medical condition, and is not due to occupational noise in the workplace.

Q: How do I know if my employees are wearing the best hearing protection for their area?

A: Referencing your company's Noise Level Measurement report will help you. It is important to know the noise exposure level of the area in which the employees are working. By calculating the actual Noise Reduction Rating (NRR), you can determine if the protector being used is the best choice for any particular area in your plant.



Q: Can I re-use my foam plugs?

A: Foam plugs are to be disposed of after each use.

Q: Do I have to test all of my employees if they have tested in the past?

A: Employees whose Time Weighted Average (TWA) equals or exceeds 85dBA must be included in the hearing conservation program. If an employee has tested in the past, and is no longer working in an area where a Hearing Conservation Program is required, he/she is not required to continue testing.

Q: What does STA mean? What does AVG mean?

A: STA stands for Standard Threshold Average. This number reflects the average of hearing threshold results at 2K, 3K and 4K with age correction. AVG stands for average. This number reflects the hearing threshold average of results at 2K, 3K and 4K with no age correction.

Q: Can employees refuse to take a hearing test?

A: No. If you comply with OSHA standards, employees are not allowed to refuse because compliance with safety and health regulations is the condition under which they accepted employment. However, if you comply with MSHA standards, employees have the option to waive their right to have an annual audiogram but they must sign a waiver stating such which should remain on file.

Hearing Aids on the Job

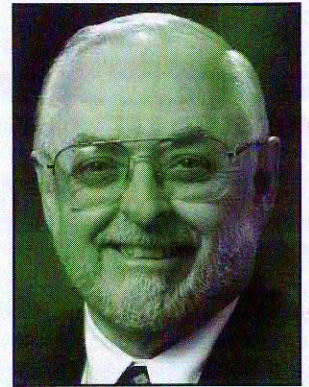
By Garth Hengen, Ph.D.

We are frequently asked whether an employee should be encouraged or required to wear their hearing aids while at work in noise. The answer is not a simple yes or no. There are several considerations.

If the employee has a solid ear mold with no hole (air vent) in it, the hearing aid earmold becomes a hearing protector and has an average NRR of about 20dB. Therefore, the earmold will serve as a hearing protector with the aid turned off.

The type of electronic circuitry of the aid is also important. The least sophisticated and usually the least expensive hearing aids are usually without automatic output limiting controls. Better hearing aids are usually set by the audiologist to limit the power delivered at the eardrum to a safe level. An employee with such a hearing aid could work in noise, be protected from the excessive intensity by using a tight non-vented ear mold and the aids will not amplify the noise beyond a safe limit.

For people with vented hearing aid ear molds, the answer is remove the aids and use ear protection. Depending upon the hearing loss frequency configuration, many of these people will then be put at a risk in other ways. They might be unable to hear warning sirens or whistles with traditional ear plugs or muffs. For these folks there are now electronic ear protection devices with safe levels of electronic amplification. This type of protection allows the wearer improved communication with co-workers while working more effectively and safely in workplace noise.



Hearing Restored in Deaf Animals Study may help humans

Michigan researchers have restored hearing in deaf mammals for the first time, a feat that represents a major step toward the treatment of the 27 million Americans with acquired hearing loss.

By inserting a corrective gene with a virus, the team induced the formation of new cochlear hair cells—the key intermediates in converting sound waves into electrical impulses—in the ears of artificially deafened guinea pigs.

They later demonstrated that the animals responded to sounds, according to the study published in *Nature Medicine*. Humans have about 16,000 hair cells in the cochlea of each ear, where they convert sound waves into nerve impulses. The cells are easily damaged by loud noises, aging and certain medications. Once damaged they cannot regenerate on their own.

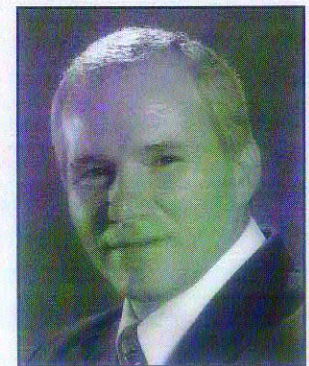
The key to the generation of new hair cells is a gene called *Atoh1*. Two years ago, researchers at the University of Michigan Medical School reported that inserting the gene into supporting cells in live guinea pigs produced thousands of new hair cells. Everybody in the field was “amazed that this worked” they said.

Scientists used toxic chemicals to kill the hair cells in both ears of 10 guinea pigs. They then inserted the *Atoh1* gene into the guinea pigs’ left ears. Within two months, new hair cells had appeared in the treated ears, but not in the untreated ears.

To determine whether the new hair cells were functional, the team used tests of auditory brainstem response to measure the guinea pig’s ability to hear sounds. The bottom line was that their hearing got better, which is a very big step. Even if experiments are successful, experts said, the required studies for safety and efficacy mean it will be the better part of a decade at least, before the technique can be tried in humans.

Reprinted from Binghamton Press, Feb. 14, 2005

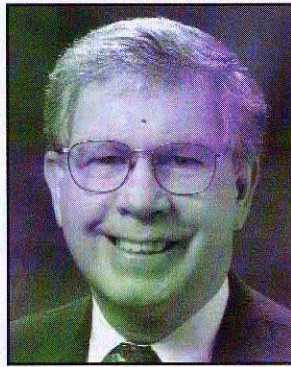
Submitted by
Lew Merritt, Audiometric Technician, New York Area



Tech-Talk...

A new feature to include some thoughts and musings from our "guys in the field." In this column you may find concerns, ramblings or the latest joke. We hope you find it informative and enjoyable.

We would all like to send our prayers to the well loved James Turner. Many of you in the Northeastern States may have gotten to meet this gentleman since he parks Rig #8 in his home state of Vermont. We want to wish him a speedy recovery from his recent open heart surgery this past February of 2005.



We Audiometric Technicians get to travel quite extensively. We cover the entire Northeastern part of the Country. (All of New England, New York, New Jersey, and Pennsylvania.) I, myself, cover the area that includes Rhode Island, southern Massachusetts, and part of eastern Connecticut. **BUT**; I have also been to all of the other states for testing.

In an effort to make your life a little simpler, **we come to you**, ready to work on your behalf; and provide the **required** hearing tests in as short a time, and with as little disruption to your work schedule as possible. We are all CAOHC certified, and should be able to answer most of your questions about your Hearing Conservation Program. **We are there for you** ... not the other way around.

Within the last year, we all have received new hardware and software, which should provide you with the **most accurate testing, and easy-to-understand reporting**, available anywhere.

I'm very excited about the new changes we have made. I look forward to seeing you on my next visit.

Chuck Squire

Audiometric Technician, Rhode Island Area

OSHA 300?

Implementing safety programs for compliance and employee protection is an ongoing task. Of course, Hearing Conservation Programs, in our book, are most important. The administrative components at your company such as hearing protection policies, noise level monitoring and posting OSHA 300 Logs are necessary throughout the year. Then before you know it, it's time for annual retesting again.



As each year passes, getting through the hearing test results may warrant a need for a little refresher explanation, not to mention the updates throughout the past couple years. Remember the changes to the OSHA 300 recordability that surfaced in January 2003? Well, just when everyone thought the dust was settling, when explanations of changes were clear, the industry has been notified of another change: baseline revision per ear.

Since 1983, if a Standard Threshold Shift (STS) was demonstrated and retest results confirmed this change, the confirming audiogram would revise as the new baseline. Recently, OSHA clarified that baseline revision must be for each ear separately. For example, if an employee demonstrates an STS in the right ear and retest results confirm the STS is still present, the baseline test will revise only for the right ear.

IHT puts in tremendous time and detail to support all changes to the Hearing Conservation Standard. New software has been implemented to help distinguish baselines per ear by shading each baseline audiogram in gray. We hope this helps with reading the results and recognizing the base reference for each additional audiogram.

Always feel free to call our office Monday through Friday 8am-4pm with any questions you may have.

Jen DeSimone

DID YOU KNOW? Baseline audiogram revision due to persistent STS or improved thresholds; revision MUST be made for each ear separately. To see the clarification letter on this issue, please see the OSHA site:

http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=INTERPRETATIONS&p_id=24565

Do you have a current noise survey on file?



**"SAVE YOUR HEARING"
HEARING
PROTECTION
REQUIRED**

INDUSTRIAL HEARING TESTING
WWW.INDUSTRIALHEARING.COM

You must have a current time weighted average measurement on file.

Yes, it's on file... BUT is your current survey still valid?

OSHA CFR 1910.95 mandates that "Monitoring shall be repeated whenever a change in production process, equipment or controls increases noise exposures to the extent that: (1) Additional employees may be exposed at or above the action level; or (2) The attenuation provided by hearing protectors being used by employees may be rendered inadequate to meet" OSHA'S requirements.

**NEED MORE INFO?
CONTACT US!**

Industrial Hearing Testing

19 Midstate Drive, Suite 220

Auburn, MA 01501

Tel: 508-832-8484

Fax: 508-832-3199

industrialhearing.com

service@industrialhearing.com

Our service includes:

- A walk-thru of facility to identify hazardous areas.
- Four to six (4 - 6) hours of personal exposure sampling with up to 8 dosimeters.
- Area monitoring of facility (visual mapping available).
- Immediate consultation upon completion of survey.
- Written report and graph of results determining:

Action level: Who needs to be in your hearing conservation program?

PEL: Who is required to wear hearing protection?



**INDUSTRIAL HEARING
TESTING**
A Division of IHHA, Inc.

OSHA & NHCA - New E-Tool!

Occupational Safety and Health Administration National Hearing Conservation Association www.osha.gov

The Occupational Safety and Health Administration (OSHA) and National Hearing Conservation Association (NHCA) Alliance, which was signed June 2, 2003, focuses on helping to prevent noise-induced hearing loss (NIHL) from exposure to industrial noise and other environmental factors for all workers. OSHA and NHCA will use their expertise to help advance a culture of good hearing health by developing and implementing Hearing Conservation Programs (HCPs) and Hearing Loss Prevention Programs (HLPPs) while sharing best practices and technical knowledge.

- OSHA and NHCA work together to achieve outreach and communications goals.
- OSHA and NHCA work together to promote the national dialogue on workplace safety and health.
- OSHA and NHCA work together to develop training and education programs.

Alliance Program Part of OSHA cooperative outreach effort.

OSHA's Alliance Program provides parties with an opportunity to participate in a voluntary cooperative relationship with OSHA for purposes such as training and education, outreach and communication, and promoting a national dialogue on workplace safety and health. These alliances have proved to be valuable tools for both OSHA and its Alliance participants. By entering into an Alliance with a party, OSHA is neither endorsing nor promoting that party's products or services.

New OSHA Hearing Conservation E-Tool as part of NHCA-OSHA Alliance!!!

This E-Tool contains useful hearing loss prevention information broken up into four different sections:

- Noise • Exposure standards and noise control • Evaluating noise exposure • Effective Hearing Conservation Programs

The E-Tool is located at:

<http://www.osha.gov/dts/osta/otm/noise/index.html>

Signs Available Now!

ACTUAL SIZE OF SIGN = 8 X 12



Comfortable Earmuff!



\$24.95 A PAIR!

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 Shipping Address (City/State/Zip) _____
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 508-832-8484 • Fax 508-832-3199

Signs: Quantity _____ @14.95 each \$ _____
 Earmuffs: Quantity _____ @24.95 each \$ _____
 (NY 4%, MA 5%, CT, ME, PA 6%) Tax \$ _____
TOTAL \$ _____

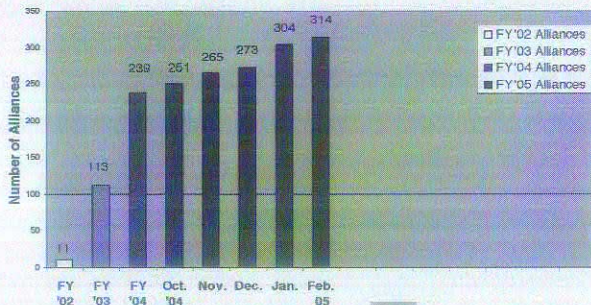
**Please forward to
 Hearing Conservation
 Program Administrator**



Proud Member of the National Hearing Conservation Association



OSHA National/Regional/Area Office Alliance Growth



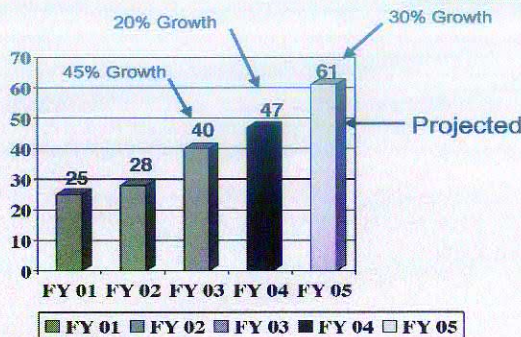
50 Region I VPP Sites



- 47 STAR
- 3 MERIT
- 0 Demo
- 4 Pending Approval

As of March 31, 2005

Region I VPP Growth



Portions of this publication printed with authorization from the U.S. Department of Labor, Occupational Safety and Health Administration (OSHA).