



UPDATE

The Newsletter of the Council for Accreditation in Occupational Hearing Conservation

VOLUME 9 • ISSUE 1 • Spring 1998

Chair's Message

by Susan Cooper Megerson, MA CCC-A
CAOHC Chair



In the early 1960's, representatives from four professional societies, the American Association of Industrial

Nurses, the American Industrial Hygiene Association, the American Speech & Hearing Association, and the Industrial Medical Association, formed a group call the "Intersociety Committee" for the purpose of establishing guidelines for occupational hearing conservation programs. In 1965, the Committee published a syllabus outline entitled "Guide for Training Audiometric Technicians in Industry", and the group's main focus was born. Over the years, the Intersociety Committee added various professional organizations to its make-up and in 1972 took on the challenge of developing a national certification

program for audiometric technicians. In 1973, the Committee officially changed its name to the **Council for Accreditation in Occupational Hearing Conservation**, or CAOHC, by which we are known today. I am pleased to "kick-off" this year's celebration of the 25th anniversary of this important event.

Over the past 25 years, CAOHC has focused on standardizing training guidelines for Course Directors (CDs) and Occupational Hearing Conservationists (OHCs), developing and updating a comprehensive hearing conservation manual, certifying CDs and OHCs, publishing regular newsletters and bulletins, participating in legislative efforts relating to hearing conservation, and promoting public awareness of the hazards of noise. CAOHC currently boasts 19,000 certified OHCs and nearly 400 CDs among our rosters. This participation represents a significant achievement culminating from the combined efforts of the Council, CDs, OHCs and employers over the years. And with this success, CAOHC

recognizes its ongoing responsibility to you, the practicing hearing conservation professional. The Council is committed to enhancing the quality of hearing conservation programs in industry and the military by virtue of our efforts in training, education and hearing health promotion.

As you read through this latest issue of **UPDATE**, you'll note some exciting news about CAOHC's past accomplishments and plans for the upcoming year. We are also pleased to welcome our newest component organization, the **Institute of Noise Control Engineering (INCE)** to the Council. **INCE brings representation** from a distinct and separate profession, noise control engineering, which plays a valuable role in the conduct and success of any occupational hearing conservation program.

My past eight years on the Council have been extremely rewarding, and I now look forward to fulfilling the upcoming two years in my new role as Chair. As always, the Council welcomes your input regarding CAOHC's goals, procedures, and projects. **Please join us in celebrating 25 years of excellence in hearing conservation!**

The History of Hearing Conservation

Heather S. Blecher, B.S.

Audiology student of Peter Weber, MD
Medical University of South Carolina

Noise exposure in the workplace is a potential health hazard as well as annoying to workers. The boom in such industries as manufacturing and transportation have placed more American workers at risk for a noise induced hearing loss. The field of industrial audiology has emerged in response to the industrialization and modernization of the factory as workplace.

Hazardous noise conditions produce destruction of the hair cells in the cochlea. Destruction of such hair cells will produce hearing loss. Many of the hazardous properties of noise have been defined and can be measured. Therefore, noise induced hearing loss can be prevented (Katz, 1994).

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UPDATE

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611 E. Wells Street
Milwaukee, WI 53202-3816
Phone (414) 276-5338
Fax (414) 276-3349

- **Chair**
Merrie Healy, RN MPH
- **Contributing Editor**
Peter Weber, MD
- **Executive Director**
Janet L. Haynes
- **Assistant Executive Director**
Barbara Lechner
- **Publications Committee:**
Elliott Berger, MS INCE Brd. Cert.
Linda Dolby, RN COHN-S
Susan Megerson, MA CCC-A

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"Complying with OSHA's Hearing Conservation Amendment CFR 1910.95" Guide

One of CAOHC's goals is to provide education and information in occupational hearing conservation. CAOHC has purchased the printing rights to 7 practical guides from the National Hearing Conservation Association.

CAOHC will print one new brochure from the NHCA series in this and upcoming issues of the *UPDATE*. We hope that you will find this comprehensive brochure helpful in your hearing conservation efforts. See Page 3 to contact NHCA for additional copies.

CAOHC Welcomes INCE/USA

by Dennis P. Driscoll, PE, INCE Bd. Cert.

At the October Council meeting, CAOHC unanimously elected the Institute of Noise Control Engineering of the United States of America (INCE/USA) to join the Council. Beginning with the 1998 Spring Council meeting, INCE/USA will become CAOHC's eighth component organization.

One of the main objectives of CAOHC is to provide guidance to industry, and those serving industry, regarding techniques and methods leading to effective occupational hearing conservation. The most direct long-term solution to in-plant noise problems and excessive worker noise exposures is achieved through implementation of engineering controls. INCE/USA was invited to join CAOHC since their members represent a majority of noise control engineers involved with occupational hearing conservation programs, and the Council believed INCE/USA's representation is needed to satisfy the objective stated above. The information that follows was provided by INCE/USA and contains a description of the association and its membership profile.

INCE/USA was established in June of 1971 as a professional society sensitive to the needs and responsibilities of noise control engineers and dedicated to a leadership role in applying noise control technology to the benefit of mankind. The formation of INCE/USA came at a time when the upsurge of public concern for the preservation of the environment greatly increased the importance of noise control. The first INTER-NOISE Congress was held in Washington, D.C. in early October 1972. INCE/USA officers played a significant role in the passage, by the US Congress, of the Noise Control Act of 1972. This was key legislation that shaped American policy during the decade of the seventies.

Interest in international affairs has always been a key concern of INCE/

USA. Section 5 of its Articles of Incorporation states: "As interest in noise control engineering develops in other parts of the world, the Institute shall encourage and participate in the establishment of national institutes in other countries leading to an eventual federation of institutes of noise control engineering." INCE/USA played a major role in the establishment in October 1974 of the International Institute of Noise Control Engineering (I-INCE). With the formation of International INCE, responsibility for organizing the INTER-NOISE series of international congresses was transferred by the Board of Directors of INCE/USA to the new organization.

In those years that an INTER-NOISE Congress is held outside the USA, INCE-USA sponsors a national conference on noise control engineering. The first NOISE-CON was held in Washington, DC in October, 1973. Fourteen NOISE-CONS have been held to date. The papers presented at NOISE-CON cover all aspects of noise control engineering.

There are nearly 1200 persons associated with INCE/USA. On October 31, 1997 there were 663 Members (of whom, 262 were board-certified), 456 Associates (including students) and 57 Distinguished Corresponding Members. *Noise Control Engineering Journal (NCEJ)* is published bimonthly with articles covering all aspects of noise control engineering. NCEJ is published in cooperation with the Acoustical Society of America (ASA) with whom INCE/USA has had a close working relationship. An agreement of cooperation has been in effect between the two organizations since 1973.

INCE maintains a home page on the Internet at: <http://users.aol.com/inceusa/ince.html>.

A practical guide to:

Complying with
OSHA's Hearing
Conservation
Amendment

CFR 1910.95



National Hearing Conservation Association

*The mission of the
National Hearing Conservation Association
is to prevent hearing loss due to noise
and other environmental factors
in all sectors of society.*

Do I Need a Hearing
Conservation Program?

If you have asked yourself this question, the answer is probably yes! There are a couple of ways you can test for yourself whether a hearing conservation program (HCP) is required in your facility.

- Do workers in your facility have to raise their voice to be heard by a listener about 3 feet away?
- Do workers in your facility ever report ringing in their ears after they leave work?
- Does the radio in your car seem quieter when you leave work — like someone turned it down during the day? Or conversely, does your radio seem too loud when you get in the car in the morning?

These are all indications of exposure to sound levels above 85 dBA, the level at which OSHA requires an "effective, on-going hearing conservation program." This guide will provide the basics for implementing a program in your facility.

Fold Here

What Must I Do About
Hearing Loss?

When a worker's annual hearing test shows a hearing shift from their baseline of an average of 10 decibels or more at the test frequencies of 2000, 3000, and 4000 hertz in either ear (after optional correction for aging), the law requires follow-up actions. This loss is called a standard threshold shift (STS).

Since there are things that could affect the outcome of a hearing test other than worker hearing ability (like variability within the test itself, background

noise in the test environment, a head cold or allergies during the test, and other factors), OSHA permits a re-test of the worker's hearing within 30 days of the annual test to confirm the STS. Workers with STS must be notified of the shift in writing within 21 days.

Work-related hearing loss is recordable on OSHA Form 200/300.

Recordability criteria have changed since the development of the Hearing Conservation Amendment; consult with OSHA or your supervising professional for more details.

All workers who have persistent STS must be:

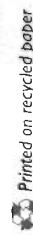
- refitted with hearing protection (see NIHCA Practical Guide #2: Fitting Hearing Protection for fitting tips);
- retrained about noise, hearing, and hearing protection; and
- be required to wear hearing protection when in noise of 85 dBA TWA or greater.

Hearing loss is
recordable
on OSHA Form
200/300 ...
consult with
OSHA or your
supervising
professional for
more details

Fold Here

For more information, contact:

NIHCA National Hearing Conservation Association
9101 Kenyon Avenue, Suite 3000
Denver, CO 80237
303-224-9022 (V), 303-770-1812 (F)
nhca@gwami.com (E-mail)
<http://www.globaldialog.com/~nhca> (Internet)



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2.98 version.

Compliance with CFR 1910.95, the federal Hearing Conservation Amendment, is a matter of diligently following a few relatively simple steps:

- 1 Assess Risk of Exposure** — Noise exposure monitoring, or noise measurement, is required to determine which workers are at risk for excessive exposure to noise. It is important that monitoring take into account anything the worker may do during the workday that could contribute to his/her overall noise level. OSHA bases all further hearing conservation decisions on the results of monitoring, including the requirement to have a hearing conservation program (HCP). Workers must be enrolled in an HCP at no cost to them, when:
 - their noise exposure is 85 dBA* (action level) or greater averaged over an 8-hour workday (TWA);
 - the maximum sound level is 115 dBA* or greater; or
 - peak (impact) noise levels are 140 dB* or greater.

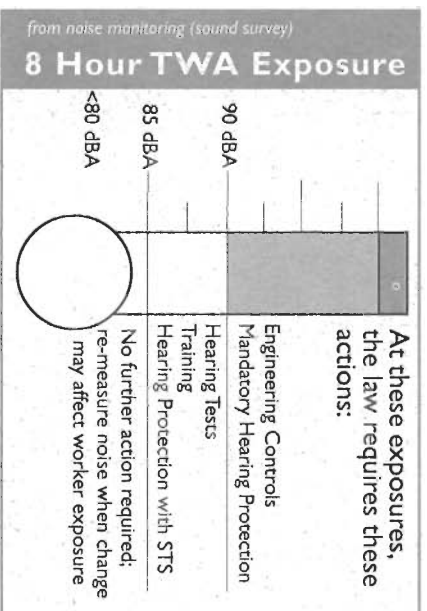
The allowable exposure for longer shifts may be lower, and can be calculated from Table G16a in the Hearing Conservation Amendment.

Repeat noise monitoring when production conditions change (new equipment or changes in production that affect noise levels) or when additional employees may be at risk of exposure at or above the action level. Workers must be provided with the results of monitoring studies, and must be able to observe monitoring if they desire.

- 2 Test Hearing** — Part of the HCP is an annual assessment of hearing called an audiogram. Each worker in the HCP must get an original audiogram, called a baseline, within six months of starting work in an HCP area to determine how well he/she hears before they are exposed to noise by this employer. The time limit can be extended to one year if the

*Sound is measured in units called decibels (dB). For purposes of the law, most sound levels are A-weighted (dBA), or filtered to approximate how the human ear responds to noise.

employer chooses to have audiograms done by a mobile hearing testing service (see *NHCA Practical Guide #3* for help in selecting a mobile hearing test provider), but only if the worker wears hearing protection in the meantime. The worker must be noise-free for 14 hours prior to getting the baseline test to make sure the test is an accurate assessment of his/her hearing. The audiogram is then repeated yearly, with the most recent test results compared to the baseline to check for changes. Audiograms must be provided by a person trained to interpret this type of test — an audiologist, otolaryngologist, other physician, or another qualified person who has received special training in hearing testing. This person should be certified by the Council for Accreditation in Occupational Hearing Conservation (CAOHC) and/or be supervised by a professional as listed above.



- 3 Hearing Protection** — Hearing protection devices (HPD), suitable for the noise found during noise monitoring, step one above, must be made available to all workers exposed to 85 dBA or greater. Those workers exposed above 90 dBA TWA are required to use HPDs when in noise. Longer shifts may

require hearing protection at lower sound levels. The employer must make a variety of HPDs available at no cost to the worker, and must replace them as necessary. It's the employer's responsibility to make sure that HPDs are used appropriately.

- 4 Training** — Workers in the HCP receive annual training in the effects of noise on hearing, aspects of HPD use (including purpose, use, care, applicability, advantages, selection, fitting, and noise reduction values), the purpose for testing hearing, and explanation of the testing procedure. The training session is also a great opportunity to discuss the state of the worker's hearing and address any related questions about noise and hearing.

- 5 Noise Controls** — The Hearing Conservation Amendment requires the implementation of feasible engineering and/or administrative controls where exposures exceed 90 dBA TWA. Administrative controls, like rotating workers in and out of noisy jobs or limiting the time noisy equipment can be run, may be hard to enforce and document. Efforts should focus on feasible engineering controls to reduce exposure to noise. Feasible has been interpreted to mean:
 - the proposed control can be applied to the problem with a predictable effect (technical feasibility);
 - the costs associated with the control are reasonable compared to the benefit received (economic feasibility); and/or
 - the control will provide a significant benefit to workers; that is, it will reduce exposure to below 90 dBA (eliminating the need for HPD); to below 85 dBA (to eliminate the need for an HCP); or reduce exposure dose by 50 percent (a significant reduction in itself).

OHC Corner

A Quick Checklist for Monitoring
Your OHC Program

Barbara Panhorst-Lassiter, EdD RN COHN-S
CAOHC Representative of the American Association of
Occupational Health Nurses



There aren't enough hours in the day. How many times have you said this? For most of us, occupational hearing conservation is just one of the many responsibilities we have in our job. We want to perform well but are we remembering everything?

The Noise Standard 1910.95 identifies five required elements of a Hearing Conservation Program. These components include exposure monitoring, audiometric testing and evaluation, hearing protection, employee training, and recordkeeping. The following are checklists that can be used to help monitor your program. These lists are by no means exhaustive but are meant to provide a way to quickly assess the essential elements.

Exposure Monitoring

When information indicates that any 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. Monitoring shall be repeated whenever there is a change in production, process, equipment or controls that increases noise exposure.

- ☐ Was sound level equipment calibrated before and after monitoring?
- ☐ Was monitoring done in all areas where high noise levels are suspected?
- ☐ Were personal dosimeters used when there were variable noise exposures?
- ☐ Could workers observe monitoring and receive monitoring results?
- ☐ Are areas identified where employees are to be included in the hearing conservation program?

Audiometric Testing

The employer shall establish and maintain an audiometric testing program for all employees whose exposures equal or exceed an 8-hour time-weighted average of 85 decibels.

- ☐ Do you maintain a notebook or file that contains certificates of calibration for your audiometer?
- ☐ Is there documentation that the booth meets noise requirements?
- ☐ Are there functional check (biological) records for every test day?
- ☐ Is there a current CAOHC (or other) certificate of training on file?
- ☐ Is testing performed and results compared annually to determine if a STS has occurred? Are STSs retested within 30 days?
- ☐ Are associates notified in writing of test results within 21 days?
- ☐ Is a Professional Supervisor in charge of the program and reviewing problem audiograms to determine if referral is necessary?

Hearing Protection

Employers shall make hearing protectors available to all employees exposed to an 8-hour time-weighted average of 85 decibels or greater at no cost to employees.

- ☐ Are a variety of HPDs available to all workers exposed to an 8-hour TWA/85 dB?
- ☐ Is a selection of HPDs offered at no cost?
- ☐ Is the employee trained in use, care, and fit of HPDs?
- ☐ If sized, is the dispenser trained?

- ☐ Does the HPD provide adequate attenuation for the environment?
- ☐ Is a compliance policy in force?

Training and Education

The employer shall institute a training program for all employees who are exposed to noise at or above an 8-hour time-weighted average of 85 decibels, and shall ensure employee participation in such program.

- ☐ Is the educational presentation revised and updated to keep interest high and to keep up with changes in equipment and processes?
- ☐ Is the trainer knowledgeable in occupational hearing conservation?
- ☐ Are workers who experience STSs counseled individually?
- ☐ Are supervisors involved in the retraining and monitoring of workers who have an STS?
- ☐ Is the date, content, trainer, and those workers who attended the training session documented in writing?
- ☐ Is training conducted in one or more sessions annually?
- ☐ Does training cover effects of noise; the purposes, selection, fit, care and attenuation of HPDs; how and why audiometric tests are accomplished?
- ☐ Is a copy of the standard available to workers and is it posted in the workplace?

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Recordkeeping

The employer shall maintain accurate records of employee exposure...audiometric tests...measurements of background sound pressure levels in audiometric test rooms...

- ☐ Are audiometric test results maintained in some form (hard copy, duplicate, microfilm, etc.) for employment plus thirty years?
- ☐ Are noise exposure measurements maintained for at least two years?
- ☐ Do audiometric records contain OSHA-required information?
- ☐ Are sound booth and audiometer calibration records maintained?
- ☐ Are employee education and training records signed and retained?
- ☐ Are hearing protector type and size documented?
- ☐ Are copies of audiometric technician training or certification preserved?
- ☐ Are employee follow-up and referral actions documented?
- ☐ Is a copy of the hearing conservation amendment (noise standard) posted in the workplace?

Summary

If you can answer yes to these questions, you are well on your way to OSHA compliance. For more comprehensive guidelines, see the standard or your **HEARING CONSERVATION MANUAL**, by Alice Suter, 3rd Edition.

WELCOME TO NEW STAFF MEMBER

Chris Whiting has recently joined the CAOHC Executive staff. Chris brings several years experience in data base management to CAOHC. You may contact her at 414/276-5338 with questions you have regarding your CAOHC certification status.

Ten Most Active CAOHC Course Directors for 1997 Announced

CAOHC is pleased to acknowledge the ten most active Course Directors for 1997. Because of the efforts of these Course Directors over 1,400 new and recertifying Occupational Hearing Conservationists completed the requirements of the CAOHC course and were certified.

- | | |
|--|---|
| * 1 Timothy A. Swisher, MA CCC-A
<i>Employee Health & Safety</i>
Broomall, PA | * 6 Kathryn M. Deppensmith, MS CCC-A
<i>Occupational Marketing, Inc.</i>
Houston, TX |
| 2 William K. Wolfe, MA
<i>Environmental Technology Corp</i>
Roswell, GA | * 7 Melette L. Meloy, MS CCC-A
<i>Sound Solutions</i>
Birmingham, AL |
| * 3 John H. Elmore, MA MBA
<i>Precision Hearing Conservation</i>
San Antonio, TX | * 8 Pamela J. Gordon, MS CCC-A
<i>Health Testing Services, Inc.</i>
Danvers, MA |
| * 4 Robert C. Rhodes, PhD
<i>Occupational Marketing, Inc.</i>
Hattiesburg, MS | 9 Andrew P. Stewart, MA CCC-A
<i>Health & Hygiene/ELB, Inc.</i>
Chapel Hill, NC |
| 5 Thomas D. Thunder, MA CCC-A INCE
<i>Acoustic Associates, Ltd.</i>
Palatine, IL | * 10 Mary M. McDaniel, MS CCC-A
<i>Pacific Hearing Conservation</i>
Seattle, WA |

* 95-100% of students became CAOHC certified.

CAOHC Council to Meet in Baltimore

The Council will meet in Baltimore, Maryland, March 26, 1998 at the DoubleTree Guest Suites. The Council discusses the progress of CAOHC's goals, projects and committee activity, reports industry news from each of their respective organizations, and develops ways to continue to support hearing health in industry.

Following the Council Meeting on Friday, March 27, 1998, Council members will be instructing new and recertifying Course Directors in the CD Workshop.

OHC Survey Winner of \$100 Gift Certificate

In the last issue we announced a survey that was being mailed at random to over 1,000 OHCs. As a thank you to participants, CAOHC offered a \$100 American Express Gift Certificate to be given in a drawing to one of the survey participants.

And ... the winner of the \$100 gift certificate is ... **Danielle Bonvento** an RN from Southern Florida. Danielle has been certified with CAOHC since 1977 and has been in occupational health nursing for twenty-one years. She is employed by local government and in addition to hearing testing, performs several other health & safety functions. Among the employees that Danielle sees are road construction and parks crews. She has had many interesting experiences over the years and remembers having to pull a bug out of the ear of one of her patients. Even an exterminator can't help that problem. Right now she is in a fixed location but plans are in the works to go on-site for some testing procedures. Danielle tells us that CAOHC certification is important to her as a way to maintain her professional standards and knowledge.

Congratulations to Danielle and thank you to all who answered the survey. The response was excellent and we will have a summary in an upcoming issue of the **UPDATE**.

The Evolution of the Council for Accreditation in Occupational Hearing Conservation



While hearing loss due to noise exposure has been known since antiquity, effective attempts at hearing conservation are a more recent phenomenon. The first published criteria for the prevention of hearing loss appeared in the "Journal of Speech and Hearing Disorders" in 1950, by K.D. Kryter. Soon after, a number of industrial companies initiated hearing conservation programs. It cannot be determined whether hearing conservation programs were motivated by the K.D. Kryter study or by the first Worker's Compensation payment for partial hearing loss due to occupation exposure in 1948, cannot be determined. The military services, most notably those using jet engine aircraft, also began hearing conservation programs around this time for their exposed personnel.

A number of studies attempting to better define the exposure criteria followed; the most widely used was that of W.L. Baughn, MD in 1966 in which he expressed the opinion that an exposure of 90 dB for eight hours a day for 45 years would produce a mild hearing loss. This was echoed by the American Academy of Ophthalmology and Otolaryngology and by the Intersociety Committee on Noise Exposure Control in 1967. This criteria was also used by the American Conference of Governmental Industrial Hygienists (ACGIH) in 1969 with the provision that the exposure be halved for each increase of 5 dB. These standards were adopted by the United States Department of Labor in 1969 under the Walsh Healy Act of 1939 and in 1971 by the Occupational Safety and Health Act of 1970.

In the early 1960s, it had become apparent to those designing and managing hearing conservation programs and to the industrial nurses attempting to perform the programs that standardization in audiometric technician training was needed. The American Association of Industrial

Nurses (AAIN) noted a need for a syllabus to be used in the training and contacted the American Speech and Hearing Association (ASHA), the Industrial Medical Association (IMA) and the American Industrial Hygiene Association (AIHA) for their expert guidance. A committee was formed from members of those organizations and from it came the "Guide for Training Audiometric Technicians in Industry", published in March of 1965.

A federal grant was obtained in 1965 by the New Jersey Association of Industrial Nurses for the establishment of five courses utilizing the guidelines for training from the Intersociety Committee. These courses were given by Dr. Joseph Sataloff and his staff. Under the aegis of the AAIN the audiometric technician training for nurses in industry was expanded throughout the country by utilizing audiologists and other professionals from local colleges and universities as faculty. The training guidelines specified that after a designated time, refresher courses would be required in order to provide feedback to the faculty.

In 1968, a second Intersociety Committee, which consisted of two representatives from each of the following organizations: the American Academy of Occupational Medicine (AAOM), the American Academy of Ophthalmology and Otolaryngology (AAOO), the American Conference of Governmental Industrial Hygienists (ACGIH), the American Industrial Hygiene Association (AIHA) and the Industrial Medical Association (IMA) was formed. This committee reviewed the guidelines and, in 1970, produced a report that provided for the evaluation of noise exposure control methods, operational planning and audiometry, and had a recommended review in three years.

The passage of the Occupational Safety and Health Act in 1970 required the development of standards. In August of 1972, a NIOSH Advisory Committee was formed (Three members were from NIOSH and four members were from the

Intersociety Committee), which met in Waterville, Maine.

The Advisory Committee was given the responsibility of developing a national certification program that would require manuals, a training curriculum and examinations. It was also decided at the meeting that the Advisory Committee would be expanded to include representatives from the following organizations: AAIN, AAOO, AIHA, ASHA, CHABA, IMA, NIOSH and the National Safety Council (NSC). Two additional representatives were also appointed to act as liaisons to the Occupational Safety and Health Administration and ACGIH. The objectives of the group were defined and the concept of hearing conservation began to further evolve.

In October 1972, a meeting held in Chicago included among its 15 guests a number of industry representatives and several from federal agencies with responsibilities in the area of hearing conservation. At this meeting, it was decided that the training course should be a minimum of 20 hours in length. The content of the syllabus was formalized and the concept of a certification board was introduced. The board would have the responsibility of teaching and certifying new instructors, evaluating and certifying current instructors and certifying technicians after they had received their training. It was also decided that since the AAIN had played a leadership role in setting up and administering the initial course, the AAIN should expand its role to include the administration of the Intersociety Committee. Mildred Sitner, RN, was appointed Executive Secretary. It was emphasized at the meeting that the effort was an interdisciplinary one and that unity was to be stressed. Final appointments to the

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Evolution of CAOHC,

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committee were made in an attempt to reduce the size of the committee and to recognize those organizations that had been most active in organizing the training courses.

The next meeting of the Intersociety Committee focused on changing the name to the "American Board of Occupational Hearing Conservation Technicians". Their objective was to "set standards and establish training policies and methods for providing industry with technicians who will be able to conduct quality hearing conservation programs in large and small industries". The Board established a policy that training and certification programs could not be limited to persons representing specific disciplines nor could it discriminate on the basis of race, sex, religion or national origin.

The Board next met in February of 1973, and, at that time, it was decided to again change the name of the organization to that of the "Council for Accreditation in Occupational Hearing Conservation" (CAOHC). With the help of invited experts, the remainder of the meeting was spent finalizing the arrangements for the first CAOHC Course Directors (CD) Workshop.

The first CAOHC CD training session was held at Colby College in Waterville, Maine, on August 4 and 5, 1973. The Council met during the session and changed the designation of "audiometric technician" to that of "occupational hearing conservationist" in response to objections from a number of professionals to being called "technicians". This required a change in the name of the organization to the current one of the "Council for Accreditation in Occupational Hearing Conservation". The application for incorporation in the State of New Jersey was then completed.

Since that 1973 meeting, there have been a number of significant changes within the Council having to do with its membership and terms of office. Since 1979, the membership has been

increased to two from each represented organization and term of office has been expanded to five years. This expanded term of office was necessary due to the increase in Council projects. It was felt that the five-year term would lend continuity and improve the interpersonal relationships among Council members. In 1985, the Military Audiology Association was granted membership in CAOHC; and in 1997 INCE/USA.

The recertification of CDs had been planned since the inception of CAOHC and the realization that it was long overdue motivated the CAOHC leadership to devote most of its meeting in 1981 to planning CD recertification workshops. Two recertification workshops were held in 1982. Since that time, the workshops have been held at regular intervals and at diverse geographic locations. CAOHC has also developed program so that component organizations may offer recertification courses. More recently, a program was instituted that allowed CDs to be recertified by attending continuing education courses and administering a prescribed number of courses.

Since its inception, CAOHC has been involved with a number of governmental agencies including the Environmental Protection Agency (EPA), NIOSH and OSHA. CAOHC made a number of comments to OSHA on the "Noise Standard" over the years. The amendment to the "Noise Standard" was first published in January of 1981 and contained a detailed hearing conservation program which was not included in the original "Noise Standard". The "Standard" was stayed for clarification until it was republished in March of 1983. CAOHC is mentioned in both of these amendments as producing certified technicians who are qualified to perform audiometry.

CAOHC has authorized a number of publications over the years. The first "Occupational Hearing Conservationists Manual" for the use of OHCs and CDs was published in 1978 and revised in 1985 and 1993. A newsletter has been produced since 1976 with the current one published biannually under the name, "Update". Several brochures are also available on the certification and

recertification procedures of OHCs and CDs.

The administrative offices of the organization have had several locations since its inception. The first was in the home of Ms. Mildred Sittner in Haddon Heights, New Jersey. With the retirement of Ms. Sittner, it was decided to move CAOHC operations to a professional management firm. Association Management Corporation assumed responsibility for CAOHC operations in 1984. CAOHC then moved to Executive Director, Inc. in Milwaukee, Wisconsin where CAOHC has been managed since 1992.

TWO COURSE DIRECTOR WORKSHOPS PLANNED FOR 1998

Baltimore, Maryland is the site of the Spring, 1998 Course Director Workshop. This course will be held Friday, March 27, 1998 at the Doubletree Guest Suites.

Chicago, Illinois will be the host city for the Fall, 1998 Course Director Workshop. The Course will be held at the Sheraton Gateway Suites in Rosemont on Monday, October 5, 1998.

These Workshops are for Course Directors who are initially planning to certify, or are using the workshop method to recertify. Applications can be obtained by contacting Barbara Lechner at the CAOHC Executive office at 414/276-5338, or accessing the CAOHC website at www.globaldialog.com/~caohc.

OHC Certification

CAOHC Certification is valid 5 years from the date of the original 20 hour course. Recertification at an 8 hour course must be made by the expiration date of your CAOHC issued certificate. Your application must be filed with the CAOHC office to be valid. Contact CAOHC staff to verify certification or to locate an approved CAOHC course by calling 414/276-5338...or locate courses at CAOHC's website.

History of Hearing Conservation,

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It is estimated that 9.27 million Americans are exposed to daily average noise levels of 85 dBA. This number represents nearly 25 percent of workers in the following occupations: agriculture, mining, construction, manufacturing, utilities, transportation and the military. According to the Occupational Safety and Health Administration (OSHA), data analyzed in 1981 indicated that 2.9 million American workers are exposed to daily noise levels above 90 dBA and 5.2 million above 85 dBA occurring in over 300,000 work places throughout the nation. A 1965 Public Health Survey found 8.4 percent of the U.S. adult population had hearing thresholds of 25 dB or greater at 500, 1,000 and 2,000 Hz. When applying that study to today's population, it would amount to more than 20 million adults. Therefore it is reasonable to assume a large portion of these hearing losses can be attributed to occupational noise exposure (Suter, 1994).

Exposure to noise at work is a preventable health hazard. Preservation of hearing promotes quality of life as well as the capacity to hear warning signals which are important for one's safety. Therefore it was necessary to implement guidelines to protect workers from potentially dangerous levels of noise.

Noise exposure in the work place can occur as impulse or steady state. The potential for damage to hearing is determined by the length of time that one is exposed to excessive noise, the level of the noise and type of noise. Determining the permissible exposure level (PEL) for workers has a rich history of debate and eventually inspired legislation.

The first standard for noise regulation was the Air Force Regulation 160-3 which was issued in 1956. The regulation called for the use of hearing protection for exposure greater than 95 dB in four octave bands: 300-600 Hz, 600-1200 Hz,

1200-1400 Hz, and 2400-4800 Hz, as well as audiometric monitoring. Other consensus bodies, such as the ISO, Committee on Hearing Bioacoustics and Biomechanics (CHABA), and the American Conference of Governmental Industrial Hygienists (ACGIH) completed studies and investigated at which level noise exposure was permissible for an eight hour period or one work day (Suter, 1994).

In 1968 Congress passed the Walsh-Healy Public Contracts Act giving the Labor Department authority to regulate benefits for workers whose employers had contracts with the federal government. Later that year a regulation known as the Walsh-Healy Noise Standard limited steady state noise to a level of 90 dBA for 8 hour exposures. For durations less than 8 hours, the exposure level can be increased by 5 dB for every halving of exposure duration (4 hours at 95 dBA, 2 hours at 100 dBA, etc.). This noise standard requires employers to use engineering and administrative controls to keep employees exposure to noise at the specified levels. Should these levels be exceeded employers must issue, and workers must wear, hearing protective devices (HPDs). In addition, according to this standard, impulse noises should not exceed a peak sound pressure level of 140 dB. (Suter, 1994).

Shortly following the enactment of Walsh-Healy came an important piece of legislation, known as the Occupational Safety and Health Act of 1970. The duties of regulating and enforcing occupational health and safety hazards as well as educating the public was to be carried out by the section of the Labor Department called Occupational Safety and Health Administration (OSHA). The Walsh-Healy Noise Standard became the OSHA

standard in 1971 and was applied not only to employers who have government contracts but extended to employers engaged in interstate commerce. The OSHA standard was revised in 1974 whereas the allowable level for impulse noises remained at 140 dB but the maximum allowable level decreased by 10 dB with each increase in the number of impulses above 100. (Foreexample 100 impulses are allowed at 140 dB, 1,000 at 130 dB, and 10,000 at 120 dB, etc.)

The Hearing Conservation Amendment (HCA) was enacted in 1981 and contained more detailed requirements for the monitoring of noise exposure, audiometric testing, and worker training and education. The HCA hearing conservation program must be available to all workers whose 8 hour time weighted average exposure levels (TWA) is equal to or exceeds 85 dBA. According to the HCA, employers must monitor the noise exposure for the aforementioned workers at least once, and re-measure should new equipment or work process cause an increase in exposure level. Area monitoring of noise is permitted but personal exposure monitoring must be used when workers are exposed to varying levels of noise. Workers have the right to observe monitoring and be informed about their exposures. Employers are required to monitor the hearing levels of their workers who are exposed to 85 dBA during an eight hour period with a baseline audiogram to be performed within six months of employment. The test may be postponed to within one year of employment when workers wear HPDs until the test time. The audiometric test must be performed

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Events

CAOHC EXHIBITING AT AOHC

CAOHC will be exhibiting at the upcoming American Occupational Health Conference in Boston, Massachusetts, April 28-30, 1998 at the Hynes Convention Center. Please stop by our booth #2421. We will be able to verify your certification and make address changes at the booth.

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by competent personnel and supervised by an audiologist or physician. These tests must be completed in test rooms that meet or exceed the 1969 ANSI criteria for background noise levels with equipment that is calibrated according to specific schedules. Should a worker experience a standard threshold shift (STS) he is to be notified in writing, refit and retrained on the use of HPDs, and referred to a specialist if needed. An STS is defined as an average shift from baseline levels of 10 dB or more at 2,000, 3,000, and 4,000 Hz. HPDs must be worn by all employees who are exposed to a TWA of 90 dBA or more. In addition HPDs are to be made available to workers who are

exposed to 85 dBA or more, and all are to be given a variety of protectors to choose from. These HPDs must be appropriate for the type of noise the workers are exposed to. Training and worker education sessions must be given annually to workers exposed to 85 dBA. These sessions are to include the following topics: the effects of noise on hearing, the purpose and procedures of audiometric tests, and proper selection, fitting and use of HPDs. Finally, employers must keep records of noise measurements, audiograms, audiometric calibrations, and background noise levels in audiometric test rooms.

Development of legislation and guidelines for noise measurement and abatement in the workplace have evolved over many years. Implementation of these guidelines helps to protect the worker from permanent damage to their hearing

acuity. Such preservation ensures quality of life and ability to communicate. The standards of noise exposure and damage risk criteria have created the field of industrial audiology. Therefore, the role of the occupational hearing conservationist would be to ensure OSHA standards and the HCA are being upheld in the workplace so that noise induced hearing loss can be prevented.

References:

1. Katz, Jack (1994). Industrial Hearing conservation. *Handbook of Clinical Audiology*, pp. 534-552.
2. Suter, Alice H. (1994) The development of federal noise standards and damage risk criteria. *Hearing Conservation in Industry, Schools and the Military*, pp. 45-66.

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Upcoming OHC Certification and Recertification Courses*

Approved March 1998

*The listed dates indicate day one of the scheduled classes; certification courses are 20 hours in length; recertification classes are 8 hours.

Date	City	Course Director	Phone	Date	City	Course Director	Phone
4/1	Shelton, CT	Sochrin, Phyllis	203/735-4327	5/13	Detroit, MI	Rhodes, Robert	713/869-6664
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4/1	Las Vegas, NV	Elmore, John	800/357-5759	5/13	White Plains, NY	Stepkin, Richard	609/435-7200
4/1	Toledo, OH	Greenberg, Dr. Herbert	419/885-3848	5/13	Portland, OR	Fairchild, Michael	503/232-1646
4/1	Ft. Sill, OK	Holland, Cpt. Reginald (Army)		5/13	Dallas, TX	Harris, Dr. Dean	970/586-0702
4/1	Cranberry, PA	Swisher, Timothy	610/353-8864	5/14	Honolulu, HI	Deppensmith, Kathryn	713/869-6664
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4/1	Seattle, WA	Deppensmith, Kathryn	713/869-6664	5/18	Hattiesburg, MS	Oshrin, Stephen	601/266-5216
4/2	Pittsburgh, PA	Angelelli, Roger	412/831-0430	5/18	Brooks AFB, TX	Waldo, Tressie	(Air Force)R
4/2	Newport News, VA	Hecker, Henry	757/874-4665	5/19	Boston, MA	Peterson, Nancy	617/267-4730
4/6	Phoenix, AZ	Elmore, John	800/357-5759	5/19	Detroit, MI	Simpson, Dr. Thomas	313/577-6754
4/6	Camp Lejeune, NC	Paul, LCDR KS (Navy)		5/19	Kansas City, MO	Ratliff, Linda	800/841-7158
4/6	Portland, OR	Attack, Dr. Rodney	503/614-8465	5/20	Los Angeles, CA	McCall, Kirsten	910/665-1818
4/6	Norfolk, VA	Bealer, Lt. JR (Navy)		5/20	Denver, CO	Elmore, John	800/357-5759
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4/14	Lancaster, PA	Thompson, Tami	816/471-3900	5/27	Chapel Hill, NC	Stewart, Andrew	800/334-5478
4/15	Birmingham, AL	Meloy, Melette	205/444-9797	5/27	Houston, TX	Meloy, Melette	205/444-9797
4/15	Charlotte, NC	Newman, Valerie	800/334-5478	5/28	Denver, CO	Deppensmith, Kathryn	713/869-6664
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