



Summer 2001

UPDATE

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The Newsletter of the Council for Accreditation in Occupational Hearing Conservation



Chair's Message

*by Peter Weber,
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Representative of the American
Academy of Otolaryngology
Head and Neck Surgery*

Summer is a time for outdoor activities - many of which involve a lot of loud noise. Some of the biggest offenders are riding lawnmowers, leaf blowers and chain saws. I would like to stress to each of you, and suggest you pass this along to friends and family, that when performing these chores you should be wearing personal hearing protection. The summer is also the time for outdoor holiday celebrations, including the Fourth of July and Labor Day. Traditionally, these are times when many people are exposed to fireworks and the loud noise they generate. Although fireworks have many serious risks associated with them, such as loss of fingers and eyes, one that is often overlooked is the risk of noise-induced hearing loss. I do recommend that you consider wearing hearing protection when working with fireworks if you expect to spend a large amount of time working very close to the noise source in order to lessen the chance of acoustic trauma.

At our recent semi-annual CAOHC Council meeting, we pushed forward on a lot of new initiatives. I would like to bring you up-to-date on some of these, as you may be hearing about them in the future. First and foremost, CAOHC felt that in order to enhance our certification process, we needed confirmation that the material being presented in a certification course was being sufficiently retained by the students. To help in this regard, CAOHC is developing a set of test questions that Course Directors may use

at the completion of a course. Currently, all Course Directors have been given the latitude to create their own examination for the student who is certifying, but we have determined that the exam and method of examination vary a great deal from Course Director to Course Director. These new questions will be validated for their effectiveness by volunteer Course Directors during the next year and will subsequently be available for use by all Course Directors. Another portion of CAOHC's goal to raise the level of our certification process was to develop a certification examination to be given at the conclusion of each Course Director workshop that we conduct. This ensures that the material that has been taught has been assimilated.

CAOHC is also trying to make it easier for OHCs to become certified by encouraging Course Directors to bundle the student certification fee with the course registration fee. This way you only have to make one payment request to your employer. Ask your Course Director if he or she is participating in this program!

Finally, we are now in our third year of teaching a Professional Supervisor course to occupational and environmental physicians. These courses expose and educate Professional Supervisors on the importance of hearing conservation and define their role as a member of the hearing conservation team as it pertains to the audiometric portion of OSHA and MSHA compliance. The certified OHC working in conjunction with the CAOHC trained Professional Supervisor should certainly have a positive impact on the hearing health of the worker!

I believe you will find this issue of the UPDATE, as all the others, to be very informative. You will find an article on both OSHA and MSHA recordability as well as an article on audiometric testing manners and one on the care, calibration and maintenance of audiometric equipment.

Have a great summer and, as always, guard against noise exposure.

EAResponsibilities



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Perhaps you give hundreds of hearing tests a year. Perhaps you give one or two a month. Either way, the value of that hearing evaluation to each individual employee cannot be understated. It may be easy in the routine of day-to-day work activities to forget the importance of each of your actions and the role your test documentation may play in the future. Occupational hearing conservationists (OHCs) come to the job from various

backgrounds, some with experience in occupational healthcare and others without experience. Consequently, a review of some fundamental principles and responsibilities is warranted. A hearing test is a health exam. In work-related hearing testing, the OHC is documenting the appropriate medical history and personal data, examining a person's ear, recording the physical function of the ear and reviewing the results. Presenting yourself in a professional, knowledgeable and courteous manner is not only

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CAOHC Approved OHC Courses

When you are registering for a recertification course (or if your fellow staff member is registering for the first time at a certification course), please confirm with the registrar that "this is a CAOHC approved" course. Only certified Course Directors, who have received a course approval certificate from the CAOHC Executive office, can conduct an occupational hearing conservation course that leads to CAOHC certification. Course Directors must display this certificate of approval in view of their students. If you don't see it, please ask your Course Director.

If you are uncertain whether the course you are planning to attend is certified by CAOHC, please contact Chris Whiting at the CAOHC office at 414/276-5338 or e-mail info@CAOHC.org

Update on Hearing Loss Recordability: OSHA Call For Comments

By Susan Cooper Megerson, MA CCC-A
Ex-Officio Member of the CAOHC Council



One of the most complicated and controversial areas of injury and illness recordkeeping has been the determination and recording of occupational hearing loss. In an attempt to alleviate some of this confusion, the Occupational Safety and Health Administration (OSHA) specifically addressed hearing loss recordability as part of the long-awaited final rule "Occupational Injury and Illness Recordkeeping and Reporting Requirements" (29 CFR Part 1904), published January 19, 2001 in the Federal Register. Those of you familiar with the new rule know that it was issued on the last day of the outgoing Clinton administration and immediately went under review by the Bush administration pursuant to a directive issued by White House Chief of Staff Andrew Card. On June 29, 2001, Secretary of Labor Elaine Chao announced that the recordkeeping rule would largely go into effect as scheduled on January 1, 2002, with two notable *exceptions*: the requirements for recording musculoskeletal disorders and hearing loss (OSHA, 2001a). Instead, these provisions will be subject to further review, and OSHA has proposed a new effective date of January 1, 2003. Written comments are invited, and must be submitted by September 4, 2001 (OSHA, 2001b).

Following is a summary of the background on the hearing loss recordability issue and OSHA's latest Call for Comments. Please note that if the proposed one-year delay takes effect, employers have been instructed to follow existing guidelines for recording work-related hearing shifts during the 2002 calendar year.

Existing Federal Interpretations

Because the existing recordkeeping rule (published in the 1980s) provides little specific information on hearing loss, federal OSHA's Directorate of Compliance Programs issued a memorandum in June 1991 instructing regional offices to cite employers for failure to record occupational hearing losses defined as follows: *an average shift in hearing of 25 dB or more at 2000, 3000, and 4000 Hz in either ear, if an exposure in the work environment either caused, aggravated, or contributed to the case*. In August 1991, OSHA clarified that the shift must be calculated by comparing the current hearing test to the original baseline for that employee and that age-adjustments may be used. This policy has become federal OSHA's standard of interpretation for the past 10 years, and as mentioned earlier, is still in effect today. In September 1999, the Mine Safety and Health Administration (MSHA) issued a new noise rule, 30 CFR Part 62. MSHA followed suit with OSHA's existing policy and also defined "Reportable Hearing Loss" as an average 25 dB change for the worse at 2000, 3000, and 4000 Hz (age-adjustments allowed).

Existing State OSHA Interpretations

Because state-run OSHA programs are allowed to enforce their own interpretations if more stringent than those of federal OSHA, some state policies have differed from the federal interpretation. Five states have reported policies in effect that require companies within their jurisdictions to record work-related Standard Threshold Shift (STS), *defined as an average 10 dB shift at 2000, 3000, 4000 Hz compared to baseline (age-adjustments allowed)*: California, Michigan, North Carolina, South Carolina, and Tennessee (Megerson, 1995; CAOHC, 2000).

Background on OSHA Rulemaking

The issue of hearing loss recordability has been under study by OSHA since the mid-1980s. On February 2, 1996, OSHA published a notice of proposed rulemaking regarding general recording and reporting requirements. Special guidance was also proposed for the recording of specific types of injuries and illnesses, including hearing loss (proposed Mandatory Appendix B). Under this proposal, OSHA indicated that a work-related average shift of 15 dB or more at 2000, 3000 and 4000 Hz in either ear should be recordable (age-adjustments allowed).

OSHA received more comments on the proposed criterion for hearing loss than were received for any other type of injury or illness other than musculoskeletal disorders.

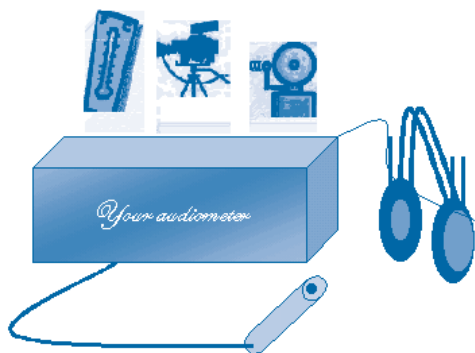
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Audiometer Care, Calibration and Hygiene

By Richard W. Danielson, PhD CCC-A
Representative of the Military Audiology Association



If you were asked to compose a TOP TEN list (like David Letterman) of the most important equipment used in your hearing conservation practice, what do suppose you'd list as your "Number One" tool? It wouldn't be surprising if most OHC's reported that their audiometer system was their first choice. After all, the effectiveness of our hearing conservation programs is measured with audiometry, making our audiometers a type of *thermometer* (measuring the current conditions of your noise-exposed workers), *camera* (recording data for current and future reviews), or *alarm system* (alerting your program manager of problems). Since these other delicate instruments clearly require special handling and periodic checkups, audiometers should also be given the same sort of care and preventive maintenance.



If you've ever come to work and found your system to be inoperative (and seen a long line of people waiting to be tested), you know that this is NOT something that you want to repeat!

Your firm may use a manual audiometer (with controls that you manipulate to determine hearing thresholds, using the audiometric techniques you learned in your CAOHC course) or it might be a microprocessor (or computer-controlled) audiometer (which uses a computer-based program that determines hearing thresholds, based on the same procedures). Either way, your equipment's output must be the same from year to year, and the same as that of units used elsewhere. (Military duty assignments, for example, can transfer someone so often that baseline audiograms can be compared to periodic audiometric tests done in a different state, or a different NATION!) How can we be sure, for instance, that "10dB HL" is "10dB HL"?

1. Daily listening and calibration check. Remember that OSHA requires that the **functional operation of the audiometer must be checked** before each day's use. A trained listener can do this quickly and efficiently by conscientiously monitoring the pure-tone signals for abnormalities that would confound testing. By taking a few minutes to rule out equipment malfunctions, you can save yourself the trouble of discovering that you need to retest a dozen workers who really do NOT have an extraordinary unilateral hearing loss. Try remembering the phrase **CUTEFCICS**, Which may help you check for typical performance problems:

- Clean (Are the cushions and earphones soiled or greasy?)

- Untangle the cords (to reduce risks of "crimping" or breaking the wires, resulting in static)
- Turn on (not only the audiometer, but also the controlling computer and printer, if separate from the audiometer. Yes, repair labs often get calls from sites that forgot to turn the power on!)
- Earphones (Does the signal come from the correct earphone? Do the earphone headbands seem to have appropriate tension?)
- Jacks (Are the jacks fully inserted? If not, a stereo jack can turn "mono," making one earphone seem "dead.")
- Frequency (Are all test frequencies present?)
- Intensity (Is there a linear growth in loudness as intensity is increased over a range of 60dB, without any "dead" spots?)
- Cross talk (Are there any extraneous sounds coming from the non-test earphone?)
- Static (Are there any extraneous sounds such as hissing or humming in the test earphone?)

Moreover, **daily calibration checks** can be conducted with either a biological calibration check (using a human listener) or with a bioacoustical electronic device. Unless you've got an assurance that your human listener is available every day that testing will take place, you should consider purchasing an electronic device (or have a dependable alternate listener, who also has audiometric data on file, standing by). By the way, **DO** you keep records of your calibration checks, so that your program has this documentation for any subsequent legal claims?

2. Acoustic Calibration. When the output levels reveal deviations of more than ± 10 dB from the established levels in a listening check, an **acoustic calibration** is required. (OSHA also requires that such a calibration occur at least once per year, anyway.) Acoustic calibrations use a sound level meter with an octave band filter set and an acoustic coupler (a steel device that mimics the average volume and acoustic characteristics of the external ear's space between the earphone and eardrum) to measure sound pressure level (dB SPL, not dBA). [Remember that the A-weighting scale reflects the perceived loudness of a sound, not necessarily its power.] In this relatively basic acoustic calibration, the audiometer's sound pressure output (with the signal's presentation level set at 70dB HL) and electroacoustic linearity of intensity changes are checked against the tolerance allowed in Appendix E of OSHA's CFR 1910.95. Deviations from those tolerances require yet another, more complex calibration, which is an...

3. Exhaustive Electroacoustic Calibration. An **exhaustive calibration** is actually more commonly recommended and conducted than a basic acoustic calibration, since the instrument's whole system is more fully evaluated. Technically,

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Audiometer Care *continued from page 3*

OSHA requires such a check every two years, yet annual calibrations are required for clinics subject to accreditation review by the Joint Council for Accreditation of Health Care Organizations (JCAHO) or the American Speech-Hearing-Language Association (ASHA). Your firm should consider adding an **exhaustive calibration** service (that examines signal accuracy, output, linearity, harmonic distortion, operation during power fluctuations and rise-fall times) to your annual budget and find a qualified technician (such as one certified by the National Association of Special Equipment Distributors, described at www.nased.com) to provide this useful service. The procedures for these measurements are described in American National Standard S3.6-1996. (Since OSHA's 1983 Hearing Conservation Amendment has not been updated, it still cites the now-superseded ANSI S3.6-1969.)

While these calibrations can **DOCUMENT** that your equipment is (hopefully) in good operating condition, you obviously want to **PREVENT** any problems from occurring through some basic preventive measures:

- Don't let your earphones be abused with rough handling or let your cords get twisted up into knotty tangles.
- NEVER swap earphones among audiometers, since they are basically "married" to one another at the time of calibration. Put an obvious ID marker on earphones so you can spot a misplaced set among the sets hanging in a multi-person booth. If you send your audiometer for repair or calibration, remember to send along its partnered earphones!
- Be rigid about always conducting daily functional checks. The day you "skip it" will surely be the day something goes wrong, right?

An additional concern for OHCs is developing in the issue of audiometric hygiene, as they consider not only their equipment, but the needs of the people they are testing. While hygiene has not been traditionally stressed in hearing conservation practices, recent concerns for patient and client health have prompted the

ASHA Committee of Quality Assurance to encourage audiologists who provide services in any work setting to incorporate the Centers for Disease Control's modified "Universal Precautions" (ASHA, 1989) into their audiometric practices. Although the risk of cross-contamination by viral, bacterial, fungal and rickettsial microorganisms is very small, the OHC and the tested employee both deserve (and will increasingly demand) that contacts be free of contaminating material. Obviously, audiometry done in a hospital, where patients are potentially immune-compromised, is subject to JCAHO standards (including hand washing and surface cleaning). However, the typical industrial hearing conservation program often places sweaty, working employees (with unknown health conditions) in our booths. While OHC's should be aware of visible signs of conditions that deserve on-the-spot actions (like draining ears or conditions that soil earphone cushions), remember that universal precautions in cleanliness and contact are **always** best. This is a good time to contact your own medical director and plant manager to discuss the complicated decision of balancing any risks of cross-contamination with the time constraints, costs and inconvenience of cleaning earphone surfaces with alcohol and bleach/water solutions (which eventually harden cushions), hand-washing between every patient, and use of disposable earphone covers (reported to be acoustically transparent).

Remember, your audiometer system is the number one tool in your hearing conservation practice. Like most other delicate instrumentation, audiometers require regular attention in order to function accurately and consistently and ensure that you are conducting your audiometric testing activity in accordance with regulatory and good practice guidelines. The calibration, equipment maintenance, and testing hygiene issues in audiometry can be extensive and complex. Following the specific tips provided in this article will help guide you through the most critical "dos" and "don'ts," allowing you to concentrate your attention on the *most* important element in your practice: the employee being tested.

NHCA TO HOLD TWO EXCELLENCE IN HEARING CONSERVATION SEMINARS

These one-day events are an annual effort by the National Hearing Conservation Association (NHCA) to offer practical educational experience to hearing conservation service providers. Excellence Seminars will be held in two cities for the first time. The first seminar is being held in Houston, TX on September 20th, and the second seminar will be in Philadelphia on October 17th. Check out NHCA's Web site at www.hearingconservation.org for more information or contact them by phone at 303/224-9022 or e-mail nhca@gwami.com

Hearing Protector Testing—Let's Get Real

By E.H. Berger, MS
Representative of the American Industrial
Hygiene Association



Part II of a two-part series

Group vs. Individual Predictions

An important distinction must be made between group and individual data. Because the variability of attenuation values in real-world situations is large [standard deviations (SDs) are generally 8 dB or larger] the ability to predict the performance for an individual can only be addressed in terms of statistical likelihood. That is why real-world data are generally implemented with a minus 1-SD adjustment in order to predict what at least 84% of the wearers will obtain. Some will get substantially higher values, but about 16% will do more poorly. Had optimum-fit data, or the current NRR which is based on such data, been utilized to estimate field performance, the predictions for the group would have been substantially in error. Although a few select users in the group might well have obtained such high levels of protection, most would not.

The hearing conservationist must be clear on how the data are applied. To predict group performance that is achievable in field conditions, Method B data are the best choice. To estimate what a few of the outliers at the upper end of the performance range can obtain, one could either take Method-B data and add one or more SDs, or one could use the existing optimum-fit data as provided.

The Shape of the Distribution

Besides predicting the average performance in the field, some have also examined the distribution of observed attenuation values across subjects, with the concern that laboratory and field measures should be the same. In practice, just as field NRRs can differ from program to program, so too can the shape of the distributions, which can be bell-shaped, bimodal, or even more complex in nature. Two examples are provided in Figure 3 for a foam and a pre-molded earplug in two different studies.^{12,1} Notice that the Method-B values do overestimate the field performance as is normally expected. The good news is that Method B, even with only 20 laboratory subjects, provides a creditable correspondence to field values, including the bimodal characteristics. Bimodality suggests that some users are not motivated or trained and do poorly, whereas others are motivated and do fairly well, a common occurrence for certain types of earplugs.

Computing a Rating Value—The NRR or What?

Besides the issue of how to measure attenuation, another question alluded to at the outset of this paper is how to present the data, i.e. how to use the results to compute protected exposures. Since 1979 the method of choice in the U. S. has been the NRR. As defined by the EPA, the NRR specifies a test method (ANSI S3.19¹⁴) and a means of computing a rating from those data (the NRR). The principal problem with the NRR is the underlying data, that is the octave-band mean attenuation and SD values from which it is computed; the computational procedure is reasonable, if only the data used in the computation were suitable. Thus, in 1995 when the NHCA Task Force set about developing new labeling recommendations they had to define a test procedure *and* a rating method. As mentioned above, their preferred test procedure was Method B of the 1997 ANSI standard. The preferred rating method

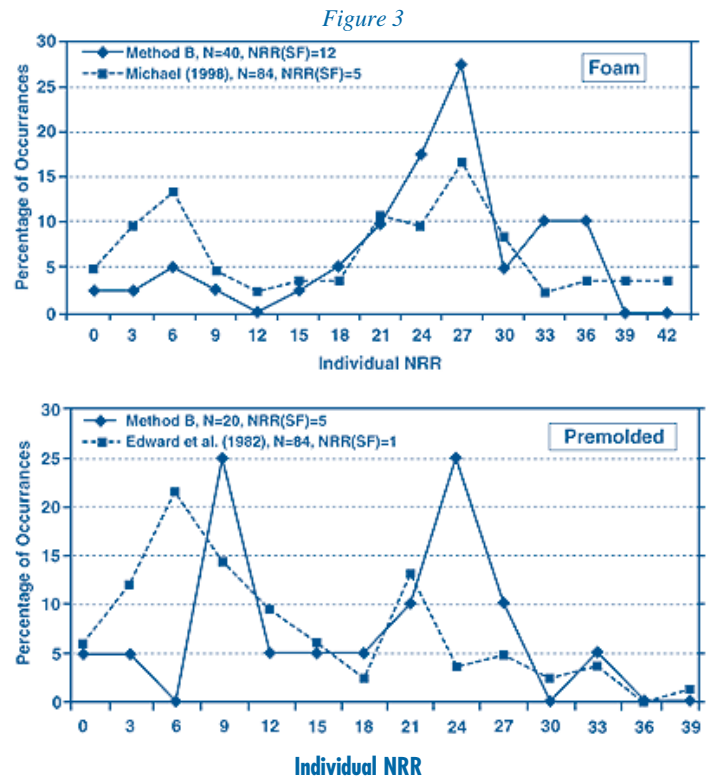


Figure 3 - Distribution of observed values of attenuation in two field studies as compared to Method B. NRR(SF)s computed from group data. N=number of subjects

was a new one that the Task Force devised, namely, the Noise Reduction Rating (Subject Fit), abbreviated NRR(SF).⁴ The intention of the Task Force was to make it clear that the new rating was indeed different from the existing NRR.

The Task Force also considered the three-number HML (high/medium/low) method, but it felt that the additional complexity the HML presented to the user, combined with the limited ability of laboratory attenuation values to represent any given individual or group of individuals, offset the small theoretical increases in accuracy that it could provide. A recent study supports the wisdom of that decision since it indicates that with or without training, both experienced and inexperienced users make more errors in computing protected noise exposures when using an HML procedure than when using the NRR.² See Table 1 for a comparison of ratings in current use around the world.

The NRR (SF) is computationally very similar to the existing NRR except that it incorporates a 1-SD instead of a 2-SD correction. Furthermore, there is a 3.5-dB offset since the NRR (SF) is based upon computations from ISO 4869-2 instead of the EPA method. It also includes a constant 5-dB adjustment to allow for direct use with A-weighted instead of C-weighted sound levels. For additional details see Berger.⁴ The differences between the new NRR(SF) and the old NRR will vary product by product, depending upon the relationship of the old EPA experimenter-fit test data to the new Method-B subject-fit data. The divergence will also be affected by the change from a 2-SD to a 1-SD correction, and the constant offset of 3.5 - 5.0 = -1.5 dB as discussed above. The new NRR (SF) will be less than the NRR by amounts varying from about 2 - 20 dB, with the differences being less for earmuffs than for earplugs. See Figure 2. Previously printed in the Spring 2001 UPDATE, page 10.

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Hearing Protectors *continued from page 5***Table 1 – Currently used or proposed number rating schemes for HPDs**

Rating	Defined by	Where used	Data Require	SD Adjustment	Used With
NRR	US EPA	North America	ANSI S3.19 ¹⁴	-2 SD	dB
SNR ^a	ISO 4869-2 ⁵	Europe	ISO 4869-1 ³	-1 SD ^b	dB
HML ^a	ISO 4869-2 ⁵	Europe	ISO 4869-1 ¹⁹	-1 SD ^b	dB + dBA
NRR(SF)	NHCA	US	S12.6 Method B ²	-1 SD	dBA
Class	Z94.2 ⁶	Canada	ANSI S3.19 ¹⁴	none	dBA
Class	AS/NZS 1270 ⁷	Australia/ NZ	AS/NZS 1270 ⁷	~ -1 SD	dBA

NOTES

- a) SNR and HML appear on international packaging but cannot be compared to NRR since they are computed from different data, with a slightly different computational procedure, and with a different SD correction.
- b) ISO 4869 allows a user-selectable SD correction, but typically 1-SD is the value in use today.

So What's a Hearing Conservationist to do?

First and foremost, as discussed by Berger¹ and in the NHCA Task Force recommendations,⁴ hearing protection selection must be much more than a numbers issue. User capabilities and preferences and ergonomic issues should come first, except perhaps in those few unusual extreme noise environments where a limited selection of HPDs or perhaps dual protection is required. Furthermore, avoidance of overprotection must also be a consideration, especially in marginal noise environments such as those less than or equal to 90 dBA.⁹

When attention is then turned to the question of attenuation, predictions for groups of users are best made using Method-B data or actual real-world measurements such as found in EARLog 20.¹ Some manufacturers now have such data in hand and will provide them upon request; perhaps in the future they will become routinely available if the interest in such values increases. For example, Method-B data are now used by the U. S. armed forces and referenced in the OSHA Technical Manual.²¹ In the absence of such values, as a *very rough rule of thumb* and only as a last resort, use existing NRRs with the OSHA-specified 50% derating, or the variable-derating recommended by NIOSH.¹⁵ **Under no circumstances** should labeled NRRs be used as is.

As a validity-check on any laboratory-based hearing protector attenuation data (but not an ironclad guarantee) look for test results from laboratories accredited by the Department of Commerce's National Voluntary Laboratory Accreditation Program (NVLAP). Finally, for the best indicator of delivered protection consider fit-testing both as a random check and a useful training device. The more effort you expend to work with and train and motivate your workforce, the more likely you will be to successfully conserve their hearing.

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Update on Recordability. . . continued from page 2

Written comments regarding Mandatory Appendix B were submitted by 443 individuals, companies and organizations, and 95 of these included responses specific to occupational hearing loss (Megerson, 1997). Of the written comments received by OSHA, only 19% were in favor of OSHA's 15-dB proposal. There was also a wide split on the preferred alternatives. Notably, 71% of industry and industry trade associations suggested that OSHA adopt a more lenient approach of requiring recording of 20- or 25-dB average shifts in hearing. In contrast, 100% of employee unions/associations and 100% of professional associations such as the American Industrial Hygiene Association, the American Speech-Language-Hearing Association, the American Academy of Otolaryngology-Head and Neck Surgery, and CAOHC, supported a more stringent criterion of recording work-related average 10-dB shifts, or STS.

Final Rule issued January 2001

Nearly five years following the call for comments, OSHA's new Recordkeeping rule 1904 was finally issued January 19, 2001 with an effective date of January 1, 2002. Hearing loss was specifically addressed in Section 1904.10 "Recording criteria for cases involving occupational hearing loss;" highlights include:

1. **Recording criterion:** Employers must record work-related STS: *an average change of 10 dB at 2000, 3000, and 4000 Hz in either ear, compared to baseline; age-adjustments allowed.* OSHA explained that it chose the STS criterion in the final rule because (1) STS is indicative of significant injury, above and beyond normal test variability, (2) typical occupational noise exposures do not justify a larger shift criterion (3) current STS rates are not high in industry and therefore recording STS would not be unduly burdensome, and (4) utilizing the same criterion for recordkeeping and for hearing conservation regulatory purposes will increase simplicity for employers (that is, separate baselines would not be required for hearing conservation regulatory requirements and recordkeeping requirements).
2. **Single ear vs. both ears:** Shifts in hearing must be calculated separately for each ear; however, if STS occurs in both ears, only one hearing loss case need be entered into the records. If a single-ear STS has been recorded on the OSHA Log, then the baseline audiogram should be adjusted for that ear, and that ear only.
3. **Work-relatedness:** Work-relatedness is presumed if the employee was exposed to noise at or above an 8-hour time-weighted average of 85 dBA. However, a case need not be recorded if a physician or other licensed health professional determines that the hearing loss is not work-related or not significantly aggravated by occupational noise exposure.
4. **Confirmation of STS:** If the annual audiogram shows STS, a hearing retest may be performed within 30 days. OSHA took into account commenters' concerns that requiring immediate recording of all STS necessitated that the employer record even temporary shifts in hearing, only later to be lined-out following retest. OSHA agreed that this procedure would be unduly burdensome and therefore allowed the recording time frame to begin 30 days AFTER the initial test. Therefore, STS that is *not* confirmed by retest need not be recorded.
5. **Time frame:** If the retest confirms the STS or if no retest is performed, then the STS must be recorded within 7 days. Again, this provision allows employers to retest cases of STS

and record only those confirmed (or not retested). OSHA has clarified that timeframes are now based on *calendar days*, not workdays.

6. **Form:** OSHA has also updated its recordkeeping forms (now OSHA Form 300, 301 and 300A); a separate column for recording hearing loss is provided.

For detailed information on the final recordkeeping rule and for a copy of forms and explanations, visit OSHA's web site at: <http://www.osha-lc.gov/recordkeeping/index.html>.

Latest Request for Comments

When announcing the proposed delay of the final rule for hearing loss on July 3, 2001, OSHA explained that the Agency selected STS as the appropriate criterion based heavily on evidence submitted by the professional coalition of which CAOHC was a member in 1996. The Coalition submitted evidence that STS is a serious health problem and "represents a non-minor injury or illness of the type Congress identified as appropriate for recordkeeping purposes". Following publication of the final rule in January 2001, however, OSHA received submissions from several industry groups, such as the American Iron and Steel Institute and the Organization Resources Counselors, Inc., criticizing the finding that an STS represents a significant health condition. These groups argued that STS is a precursor event, or warning flag, but not an indicator of material hearing impairment alone. See the July 3, 2001 *Federal Register* for complete text of OSHA's proposed delay and request for comments at: <http://frwebgate.access.gpo.gov/cgi-bin/multidb.cgi>.

Comments must be submitted by September 4, 2001.

Specifically, OSHA is requesting comment on the following issues:

1. What is the appropriate criterion for recording cases of occupational hearing loss (10, 15, 20, 25 dB, sliding scale, etc.)?
2. What is the variability of audiometric testing equipment and how should this variability be taken into account, if at all?
3. What is the appropriate benchmark against which to measure hearing loss (baseline, audiometric zero, etc.)?
4. Should the rule treat subsequent hearing losses in the same employee as a new case?

Because CAOHC participated in the last Call for Comments in 1996, the Council will review the issues recently raised and determine if the Council will again comment and in what respect. We encourage CDs and OHCs to make your voices heard as well by mailing or faxing your opinions to OSHA by September 4.

Final Notes/Reminders

No matter which criterion will eventually be used by your company (OSHA, MSHA, or your own more stringent company policy), case review is an important aspect of managing recordability of occupational hearing loss. Each "potentially recordable shift" which meets the specified criterion, and any other suspected work-related hearing loss, should receive careful review by an audiologist or physician knowledgeable in hearing and hearing conservation programs. Please check with your

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audiometric program supervisor to ensure that your potentially recordable shifts are thoroughly reviewed. And of course, recordability of hearing loss in no way affects your obligations under current Hearing Conservation Program regulations (OSHA 1910.95, MSHA Part 62, etc.) and should not detract from the true goal of your program: *hearing loss prevention*.

References:

CAOHC (2000). "Oregon OSHA Changes Position on Recordability of Occupational Hearing Loss", *CAOHC Update*, Volume 11, Issue 4.

Megerson, S. C. (1995). "Noise in Washington over Hearing Loss Recordability", *CAOHC Update*, Volume 6, Issue 1.

Megerson, S. C. (1997). "Occupational Hearing Loss and OSHA Recordability: An Update", Annual Conference of the American Industrial Hygiene Association, Dallas, Texas.

OSHA (2001a). "OSHA Rule on Recordkeeping for Workplace Injuries to Go into Effect as Scheduled", Occupational Safety and Health Administration, National News Release USDL: 01-201, June 29, 2001.

OSHA (2001b). "Occupational Injury and Illness Recording and Reporting Requirements: Proposed delay of effective date; request for comments", Occupational Safety and Health Administration, Docket No. R-02A, *Federal Register*, Vol. 66, Number 128, pages 35113-35115.

MORE CHANGES TO WWW.CAOHC.ORG

Because CAOHC now has an electronic signature box on-line, you can e-mail your OHC certification or recertification application form & survey directly to the CAOHC office (unless your course director is providing this service for you).

This means that you can complete these forms right on our Web site and submit them by clicking a key. Fees can be paid via MasterCard or Visa, or you may submit the document and indicate that you will send fees by check through the mail. Certificates will be mailed to the address indicated upon receipt of fee payment.

You can also order the 3rd Edition *Hearing Conservation Manual* by Alice Suter or the *Anatomy, Physiology and Diseases of the Ear Video Curriculum Package* through the on-line system.

If you prefer, any of these forms can still be downloaded on your printer and faxed or mailed to our office in Milwaukee, WI. (They may also be obtained through your Course Director.)

If you have questions about these choices, please call us at 414/276-5338. Ask for Chris Whiting. The Web site address is www.caohc.org

COURSE DIRECTOR WORKSHOP IN BALTIMORE, MD

CAOHC Council members will present a one-day, 8-hour Course Director Workshop on Monday, October 1, 2001 at the Embassy Suites BWI in Baltimore, MD.

You should attend this workshop if:

1. You are a new Course Director candidate whose application has been approved by the Screening Committee and you wish to complete the requirements for initial certification.
2. You are a Course Director certified or recertified within the past five years and whose application has been approved by the Screening Committee and wish to use the workshop method for re-certification.

Objectives

1. Attendees will be able to list the activities the course director needs to do before, during and after hearing conservation courses to ensure successful training according to CAOHC guidelines.
2. Attendees will be able to identify course requirements and procedures related to certification of occupational hearing conservationists and course directors by CAOHC.
3. Attendees will be able to identify contemporary issues of hearing conservation programs, which are to be included in hearing conservation courses.
4. Attendees must satisfactorily pass a written exam at the close of the workshop.

Candidates for certification and recertification must submit applications by August 27, 2001. Applications are reviewed and approved by the CAOHC Screening Committee.

CAOHC is approved by the Continuing Education Board of the American Speech-Language-Hearing Association to provide continuing education activities in speech, language, pathology, and audiology. This program is offered for .7 hours CEUs (Advanced Level: Professional area). ASHA CE provider approval does not imply endorsement of course content, specific products, or clinical procedures.

Hotel reservations for the workshop should be made directly with Embassy Suites BWI by calling 410/850-0747. Rooms are blocked under the name CAOHC (the Council for Accreditation in Occupational Hearing Conservation). When making your room reservation, please specify that you are attending the CAOHC workshop to receive the special room rate. Reservation deadline is August 31, 2001.

Application and registration forms are available by calling the CAOHC office at 414/276-5338 or accessing the Web site at www.caohc.org

Upcoming Workshop: CAOHC will conduct a Course Director workshop on Wednesday, February 20, 2002 in conjunction with the National Hearing Conservation Association (NHCA) Conference at the Westin Park Central Hotel in Dallas, Texas. More information will follow.

EAResponsibilities *continued from page 1*

desirable but also essential. This is accomplished directly by interpersonal actions and, indirectly, in terms of the documentation you create.

Introduce Yourself

During the hearing test procedure, always introduce yourself to the employee, explaining who you are, what your position is and what your credentials are. Employees should not be guessing whether you are an audiologist, physician, certified technician or an inexperienced clerk from down the hall. Name badges are helpful in reinforcing information and credentials, especially in the industrial environment or when you may have more than one role in the company or office. If an employee does not have confidence in the person doing the hearing test, then there will not be confidence in the test results, fostering skepticism concerning any follow-up recommendations.

Confidentiality

Hearing exams should be conducted in a location that assures confidentiality to an appropriate extent. This includes the areas used for history taking, hearing testing, discussion of results, and record storage and maintenance. Results from the previous person's exam should not be visible to the next person being tested. If information is input into computers, it is worthwhile to provide, for the employee being tested, information about who, specifically, on the hearing conservation team, will have access to this information. The employee should clearly understand and consent to the distribution of the medical information.

Standardize Procedures

It is best to standardize your procedures with your program supervisors. This includes everything from the initial introduction, history taking, hearing testing, and review of results after the exam. Doing things the same way every time leaves less room for error and ensures that consistently high quality service will be provided to all employees. Explain each step of the process along the way, so there are no surprises.

Employee/Patient Rights

Many forces impact the provision of healthcare services at work, not always positively. Patients' motives vary greatly. There is some abuse in any system. OHCs should know their rights and the employee's rights. OHCs should not tolerate uncooperative behaviors. Discussing this potential issue and ways to resolve the problem is best done with the program supervisor before finding yourself in this situation. Employees also have rights, and it behooves the OHC to know how to handle an employee who refuses a hearing test or perhaps doesn't want to divulge a social security number or a medical history item. Preparedness is the key to handling such situations.

Patient Feedback

When a hearing test is completed, each employee deserves immediate feedback on the current test results, a general comparison to previous audiograms and what his or her future expectations should be (e.g., a letter will be mailed, a retest appointment will be scheduled, etc.). This is the most influential time when an OHC can make an impact on the employee's self-responsibility for hearing protector use. Hearing changes for the worse typically receive attention, however the audiogram that is stable or slightly improved should alert the OHC to reinforce the consistent use of hearing protection and the avoidance of hazardous noise (and ototoxic substances as well) both on and off the job. The type of individual feedback and comparisons to previous exams should be at the discretion of the program supervisor and, ideally, discussed with

the OHC prior to testing workers. Employees often have questions that are not easily answered by an OHC. An audiometric technician should feel comfortable saying, "I don't know" and refer the employee to the appropriate professional resource.

The time for OHCs to interact with employees on an individual basis typically only presents itself at the time of the audiogram. OHCs should encourage employers to have employees bring their personal hearing protectors with them to their appointments. This affords the OHC a critical opportunity to inspect the condition of the protectors, observe and possibly correct the employee's insertion/fit of the hearing protector and address any individual comfort and use concerns. OHCs have a critical role to play in the reinforcement and motivation of employees to utilize earplugs and/or earmuffs correctly and consistently.

Record Keeping

Documentation is an integral part of the OHC's job and is often the area where omissions are made and errors occur. Regulatory agencies are specific in terms of the recordkeeping requirements for the audiometric monitoring portion of hearing conservation programs. Employers rely on the expertise of the hearing test service provider in terms of recordkeeping, but if the employee is merely sent for a "hearing test," it may not be clear to the service provider which regulation is relevant to that particular exam. Employers must assure that their service providers are familiar with all applicable regulations and are aware of the specific information that must be recorded with each hearing test. OHCs should be familiar with the various regulatory requirements and assure that their services and documentation are in full compliance.

Assuring that pre-printed forms or computer programs have the appropriate fields is only the first step in quality recordkeeping. If the fields are left incomplete, contain undefined acronyms or are illegible, then the information is lost. Simple recording of thresholds can become a complicated decision-making process for data entry personnel or others who are attempting to calculate standard threshold shifts (STS) or referral needs based on difficult-to-read numbers or abbreviations. Occasionally, shortcuts can also cause recordkeeping errors. It is not uncommon to find forms with the standard information pre-completed. For instance, a form may be photocopied with the name of the tester, audiometer and calibration dates already inserted. These forms may continue to be used long after the annual calibration date expires, the tester no longer works at the test facility or the audiometer has been replaced. All such errors serve as opportunities to challenge the validity of the testing you provide. It is best to destroy and recycle all previous versions of forms whenever the information is updated or no longer correct.

Professional Service

Always remember that your work is your personal professional reflection. You want to be recognized for consistent, high quality services, accurate recordkeeping and effective communication, and nothing less. Providing such services, and standing behind them in the medical and legal arenas, is both personally and professionally rewarding and a competitive advantage in the marketplace.

Remember that most employees only have the opportunity to have their ears examined, hearing tested, and results explained once a year. It is not a "routine" experience for them. Employees deserve the professionalism, comprehensiveness and detail that you yourself would desire during any personal healthcare visit. Your demeanor, attitude, appearance, documentation and actions all reflect on the perceived quality of your services and the overall effectiveness of the employer's hearing conservation program. It helps assure that the ultimate goal - hearing loss prevention - is achieved!

Now Hear This...

The National Safety Council has a packaged training program you can use to train workers to **protect and conserve their hearing**. This fully-scripted, video-based program will help you teach workers the following:

- Definition of noise
- Basics of hearing
- Warning signs of hearing loss
- Two major types of noise in the workplace
- Typical decibel levels
- Factors of noise exposure
- Two major types of hearing protection devices
- How to properly use hearing protection devices
- Hearing protection at home



National Safety Council

NSC Safetyworks™ is a complete packaged training system containing **over 25 occupational kits** designed to develop, implement and evaluate a comprehensive safety or ergonomic program. Topics range from Confined Spaces to Ergonomics.

NSC Safetyworks: Hearing Conservation Kit

Product # 14128-0000

NSC Member Price: \$350 Non-Member Price: \$389

Kit includes:

- Administrative guide
 - OSHA requirements
 - Written program
 - Recordkeeping forms
- Video (12 minutes)
- 5 employee handbooks

Kit available in Spanish also!

Product # 14128-8181

NSC Member Price: \$450 Non-Member Price: \$499

Additional Employee Handbooks

Product # 14680-0000

NSC Member Price: \$1.34 Non-Member Price: \$1.49

For NSC membership information or to order these products, call your local chapter or 800-621-7619.

Visit us at www.nsc.org for a complete chapter listing or to order, click on products, training materials and NSC Safetyworks.

CEUs FOR COHNs!

If you have attended a CAOHC approved certification or recertification course and you need to accumulate nursing CEU's (Continuing Education Units), you may submit your course completion certificate to the American Board for Occupational Health Nurses, Inc. (ABOHN). Ask your Course Director to provide you with a certificate indicating:

- Your name
- Course Title
- Date or dates on which the course was given
- Course provider (Course Director)
- Number of contact hours awarded for the course
- Signature of the Course Director

Mail this course completion certificate along with your ABOHN application to:

American Board for Occupational Health Nurses, Inc. (ABOHN)

201 East Ogden/Ste 114

Hinsdale, IL 60521-3652

Fax: 630/789-8901

There are no fees when submitting these hours. Applications are available at www.abohn.org. Any questions about the ABOHN process can be forwarded to: **Ann Lachat, RN BSN COHN-S, Director of Support Services, phone: 888/842-2646 or e-mail: info@abohn.org**

Any questions regarding state licensing for RNs and the possible acceptance of these CEUs for that purpose should be directed to the licensing offices of your state.

FYI: Do not confuse the CAOHC certification process with the submission of CEUs. CAOHC does not award nor maintain your education hours. The course completion certificate provided by a course director is NOT your CAOHC certification. You must send an application to CAOHC for certification or recertification.

UPDATE

UPCOMING OHC CERTIFICATION AND RECERTIFICATION COURSES* 2001 & 2002

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

Approved as of July 2001 (for a complete list of courses visit our website at www.caohc.org)

Begin Date	City	State	Course Director	Phone	Begin Date	City	State	Course Director	Phone
7/19/01	Portland	OR	Fairchild, Michael	503/259-2685	10/3/01	Ft. Walton Bch	FL	Holmes, Georgia	205/934-7178
7/19/01	Kittanning	PA	Callen, Doug	724/543-7068	10/3/01	Mobile	AL	Meloy, Melette	678/363-9897
7/23/01	Scranton	PA	Swisher, Timothy	412/367-8690	10/3/01	Atlanta	GA	Wolfe, William	770/475-2055
7/23/01	Florence	SC	Harris, LuEtta	843/662-7702	10/3/01	Lindenwold	NJ	Stepkin, Richard	856/435-2000
7/23/01	Ft. Campbell	KY	Casto, Kristen	Army	10/4/01	Denver	CO	Elmore, John	800/357-5759
7/23/01	Ft. Hood	TX	Tuten, Vickie	Army	10/8/01	New Brunswick	NJ	Kelly, Ellen	732/238-1664
7/24/01	Philadelphia	PA	Robertson, James	215/922-1126	10/8/01	Ft. Hood	TX	Tuten, Vickie	Army
7/24/01	New Brunswick	NJ	Kelly, Ellen	732/238-1664	10/9/01	Chicago/Woodfield	IL	Thunder, Thomas	847/359-1068
7/24/01	Atlanta	GA	Moore, Gregg	770/933-9236	10/10/01	Owensboro	KY	Etienne, Joseph	270/926-0418
7/24/01	Kansas City	MO	Bloyer, Cindy	816/471-3900	10/10/01	Buffalo	NY	Swisher, Timothy	412/367-8690
7/25/01	Charlotte	NC	Meloy, Melette	678/363-9897	10/10/01	Brookfield	WI	Korabec, Edward	414/547-2227
7/25/01	Durham	NC	Stewart, Andy	919/544-7500	10/10/01	W. Palm Beach	FL	Greenberg, Herbert	561/968-3536
8/1/01	Owensboro	KY	Etienne, Joseph	270/926-0418	10/10/01	St. Paul	MN	Cary, Carolyn	651/736-2089
8/1/01	Hattiesburg	MS	Rhodes, Robert	601/264-3545	10/10/01	Little Rock	AR	Prince, Jane	870/972-1166
8/1/01	Anchorage	AK	Deppensmith, Kathryn	713/869-6664	10/10/01	Denver	CO	Harris, Dean	970/586-0702
8/1/01	Greeley	CO	Wells, Laurie	970/593-6339	10/15/01	Washington	DC	Brewer, Diane	202/994-7167
8/2/01	Montgomery	AL	Smith, Curtis	334/887-6302	10/15/01	Syracuse	NY	Oviatt, Dana	315/428-0016
8/2/01	Jacksonville	FL	Cavalli, Lt. Gina	Navy	10/15/01	Omaha	NE	Norris, Thomas	402/391-3982
8/6/01	Portland	OR	Attack, Rodney	503/614-8465	10/15/01	Detroit	MI	Rhodes, Robert	713/468-3201
8/6/01	Tulsa	OK	Deppensmith, Kathryn	713/869-6664	10/15/01	Lexington	KY	Green, William	859/269-1526
8/6/01	Schofield Barracks	HI	Bardolf, Lynette	Navy	10/16/01	Philadelphia	PA	Robertson, James	215/922-1126
8/6/01	Norfolk	VA	Reabin, Lt. JR	Navy	10/16/01	Detroit	MI	Robinson, Dale	313/577-1393
8/7/01	St. Louis	MO	Thiele, Natalie	314/968-4710	10/17/01	Shelton	CT	Sochrin, Phyllis	203/735-4327
8/7/01	Greensboro	NC	Cook, George	336/992-0034	10/17/01	Manchester	NH	Gordon, Pamela	508/481-5819
8/7/01	Atlanta	GA	Moore, Gregg	770/933-9236	10/17/01	Houston	TX	Meloy, Melette	678/363-9897
8/7/01	Greenville	SC	Guryan, Stephen	864/331-1400	10/17/01	Cleveland	OH	Wolfe, William	770/475-2055
8/8/01	Cincinnati	OH	Swisher, Timothy	412/367-8690	10/17/01	Durham	NC	Stewart, Andy	919/544-7500
8/8/01	Birmingham	AL	Meloy, Melette	678/363-9897	10/18/01	Waterville	ME	Giroux, Anne	207/872-0320
8/8/01	Norfolk	VA	Elmore, John	800/357-5759	10/18/01	Greensboro	NC	Cook, George	336/931-0178
8/8/01	Jacksonville	FL	Green, Nancy	904/880-1710	10/18/01	Ft. Lauderdale	FL	Elmore, John	800/357-5759
8/10/01	St. Louis	MO	Bellamy, McKenna	314/968-4710	10/22/01	Landstuhl Germany		Fleener, Rhonda	Army
8/10/01	Knoxville	TN	Ferrell, Charles	865/974-5453	10/23/01	Atlanta	GA	Russell, Charles	610/667-1711
8/14/01	Marlboro	MA	Gordon, Pamela	508/481-5819	10/24/01	Fresno	CA	Deppensmith, Kathryn	713/468-3201
8/14/01	Greenville	SC	Stewart, Andy	919/544-7500	10/24/01	Amherst	NY	Nelson, David Todd	716/874-3375
8/14/01	Brooks AFB	TX	Agres, Karen Mjr	Air Force	10/29/01	Waterville	ME	Giroux, Anne	207/872-0320
8/15/01	W. Palm Beach	FL	Greenberg, Herbert	561/968-3536	10/31/01	Birmingham	AL	Meloy, Melette	678/363-9897
8/15/01	Sonoma	CA	Deppensmith, Kathryn	713/468-3201	11/1/01	New Orleans	LA	Elmore, John	800/357-5759
8/15/01	Greenville	SC	Stewart, Andy	919/544-7500	11/5/01	Great Lakes	IL	Alexander, Alicia	Navy
8/15/01	Moraine	OH	Pavlos, Chris	937/436-1161	11/6/01	Charleston	WV	Harris, Gary	304/766-6555
8/20/01	Cincinnati	OH	Elmore, John	800/357-5759	11/6/01	St. Louis	MO	Bellamy, McKenna	314/968-4710
8/21/01	Chicago/Woodfield	IL	Thunder, Thomas	847/359-1068	11/6/01	Indianapolis	IN	Jerome, Jim	317/841-1065
8/21/01	Brooks AFB	TX	Agres, Karen Mjr	Air Force	11/6/01	Atlanta	GA	Moore, Gregg	770/933-9236
8/22/01	Birmingham	AL	Holmes, Georgia	205/934-7178	11/6/01	N. Kansas City	MO	Ratliff-Hober, Linda	816/221-1401
8/22/01	Richmond	VA	Swisher, Timothy	412/367-8690	11/7/01	Birmingham	AL	Holmes, Georgia	205/934-7178
8/22/01	Philadelphia	PA	Meloy, Melette	678/363-9897	11/7/01	Cleveland	OH	Snyderwine, Carol	216/491-6104
8/22/01	Dallas	TX	Rhodes, Robert	713/869-6664	11/7/01	Baltimore	MD	Doye, Mary	410/955-4088
8/22/01	Durham	NC	Stewart, Andy	919/544-7500	11/7/01	Pittsburgh	PA	Swisher, Timothy	412/367-8690
8/23/01	Louisville	KY	Elmore, John	800/357-5759	11/7/01	Detroit	MI	Meloy, Melette	678/363-9897
8/27/01	Bellevue	WA	McDaniel, Mary	206/706-7352	11/7/01	Houston	TX	Rhodes, Robert	713/869-6664
8/29/01	Washington	DC	Moreland, Rebecca	410/646-2121	11/7/01	Greenville	SC	Carroll, Tara	864/331-1400
8/29/01	Pontiac	IL	Sidak, Julie	815/844-3982	11/7/01	Durham	NC	Stewart, Andy	919/544-7500
9/5/01	San Antonio	TX	Elmore, John	800/357-5759	11/13/01	Clearfield	UT	Juarez, Omar	801/296/8259
9/6/01	Mandeville	LA	Istre, Clifton	337/233-4081	11/13/01	Durham	NC	Stewart, Andy	919/544-7500
9/6/01	Brooks AFB	TX	Agres, Karen Mjr	Air Force	11/14/01	Portland	OR	Fairchild, Michael	503/259-2685
9/10/01	Baltimore	MD	Moreland, Rebecca	410/646-2121	11/14/01	Dallas	TX	Harris, Dean	970/586-0702
9/10/01	Houston	TX	Deppensmith, Kathryn	713/869-6664	11/15/01	Pittsburgh	PA	Angelelli, Roger	412/831-0430
9/11/01	Philadelphia	PA	Chiarello, Joseph	610/667-1711	11/15/01	Detroit	MI	Elmore, John	800/357-5759
9/11/01	N. Kansas City	MO	Ratliff-Hober, Linda	816/221-1401	11/27/01	Chapel Hill	NC	Bloyer, Cindy	816/471-3900
9/11/01	Brooks AFB	TX	Agres, Karen Mjr	Air Force	11/30/01	Chicago	IL	Elmore, John	800/357-5759
9/12/01	Philadelphia	PA	Swisher, Timothy	412/367-8690	12/3/01	Portland	OR	Attack, Rodney	503/614-8465
9/12/01	Birmingham	AL	Meloy, Melette	678/363-9897	12/4/01	Bellevue	WA	McDaniel, Mary	206/706-7352
9/13/01	Pittsburgh	PA	Angelelli, Roger	412/831-0430	12/4/01	New Orleans	LA	Seidemann, Michael	504/443-5670
9/13/01	St. Louis	MO	Elmore, John	800/357-5759	12/4/01	Marlboro	MA	Gordon, Pamela	508/481-5819
9/17/01	Portland	OR	Dolan, Thomas	503/725-3264	12/4/01	Philadelphia	PA	Chiarello, Joseph	610/667-1711
9/18/01	Kansas City	MO	Bloyer, Cindy	816/471-3900	12/5/01	Birmingham	AL	Holmes, Georgia	205/934-7178
9/19/01	Greensboro	NC	Cook, George	336/992-0034	12/5/01	Greensboro	NC	Cook, George	336/992-0034
9/19/01	Portland	OR	Fairchild, Michael	503/259-2685	12/5/01	W. Palm Beach	FL	Greenberg, Herbert	561/968-3536
9/19/01	Columbia	SC	Meloy, Melette	678/363-9897	12/5/01	Knoxville	TN	Meloy, Melette	678/363-9897
9/19/01	Nashville	TN	Rhodes, Robert	713/468-3201	12/5/01	San Antonio	TX	Deppensmith, Kathryn	713/869-6664
9/19/01	Salt Lake City	UT	Cronin, Pamela	801/566-8304	12/5/01	Atlanta	GA	Wolfe, William	770/475-2055
9/19/01	Durham	NC	Stewart, Andy	919/544-7500	12/5/01	Houston	TX	Elmore, John	800/357-5759
9/19/01	Dallas	TX	Harris, Dean	970/586-0702	12/5/01	Chicago/Woodfield	IL	Thunder, Thomas	847/359-1068
9/20/01	Waterville	ME	Giroux, Anne	207/872-0320	12/5/01	Durham	NC	Stewart, Andy	919/544-7500
9/20/01	Brooks AFB	TX	Agres, Karen Mjr	Air Force	12/7/01	Brooks AFB	TX	Agres, Karen Mjr	Air Force
9/24/01	Phoenix	AZ	Deppensmith, Kathryn	713/468-3201	12/10/01	New Brunswick	NJ	Kelly, Ellen	732/238-1664
9/25/01	Chapel Hill	NC	Jerome, Jim	317/841-1065	12/11/01	Kansas City	MO	Bloyer, Cindy	816/471-3900
9/25/01	Durham	NC	Stewart, Andy	919/544-7500	12/12/01	Greensboro	NC	Moore, Gregg	770/933-9236 NR
9/27/01	Newport News	VA	Hecker, Henry	757/874-4665	12/12/01	San Antonio	TX	Elmore, John	800/357-5759
10/1/01	Portland	OR	Attack, Rodney	503/614-8465	12/17/01	New Brunswick	NJ	Kelly, Ellen	732/238-1664
10/1/01	Lake Charles	LA	Rhodes, Robert	713/869-6664	1/15/02	Philadelphia	PA	Robertson, James	215/922/1126
10/1/01	Philadelphia	PA	Robertson, James	Navy	3/18/02	Portland	OR	Dolan, Thomas	503/725-3264
					6/10/02	Portland	OR	Dolan, Thomas	503/725-3264

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