## HEARING ENHANCEMENT AND ROUND DANCING FREQUENTLY ASKED QUESTIONS (FAQ's)

Presented at ROUNDALAB Convention, June 2005 Susan Healea, M.A. CCC-A, Clinical Audiologist

What are some reasons to use hearing enhancement equipment in round dancing? Hearing enhancement systems literally place the speaker at the ear of the listener and dramatically reduce background noise. This background noise may include sideline talking, motor or fan noise (e.g. heating or air conditioning unit), floor noise (made by the dancers' feet moving), etc. Hearing loss is invisible and can occur at any age. However, it is more prevalent as age increases. More than 50% of people over age 50 have a hearing loss significant enough to impact their understanding of speech, especially in a background of noise. As the average age of round dancers increases, so does the impact of hearing loss on the activity. Look at the demographics of your group. If there are several older dancers, then chances are higher that a hearing enhancement system would be beneficial. The use of a hearing enhancement system has extended many people's dancing careers. There are dancers who will only attend dances that are "hearing enhanced".

The hall has good sound, why use a hearing enhancement system? Dancers with impaired hearing will have difficulties, even under ideal conditions. Although halls with less than perfect sound and dances with large crowds will encourage more people to use the system, there are many individuals who will benefit from a hearing enhancement system in any hall.

The dancers with hearing impairment have hearing aids, why use a hearing enhancement system? Even state of the art hearing aids do not reduce background noise to the same extent as a hearing enhancement system. It may be difficult to convince someone of that, given the amount of money that they have spent on the hearing aids, but it is true. Every individual is different, but most will hear better through the hearing enhancement system. They may couple the system with the use of a hearing aid in the other ear. Individuals using an induction loop (explained later) will enjoy the utmost benefits of both the hearing enhancement and their personal hearing aids.

**How does hearing enhancement reduce stress among dancers?** When a person strains to hear, their energy is focused on hearing. When that strain is diminished, they have more energy to devote to dancing and they are able to fully enjoy the activity. The incidence of misunderstanding cues is also reduced and thus mistakes occur less often. This builds dancer confidence and reduces potential stress between partners.

What is ADA and how does it affect round dancing? ADA stands for the Americans with Disabilities Act. The Americans with Disabilities Act gives civil rights protections to individuals with disabilities similar to those provided to individuals on the basis of race, sex, national origin, and religion. It guarantees equal opportunity for individuals with disabilities in public accommodations, employment, transportation, state and local government services, and telecommunications. It states that one must furnish auxiliary aids when necessary to ensure effective communication. For new construction and alterations, fixed seating assembly areas that accommodate 50 or more people or have audio amplification systems must have a permanently-installed assistive listening system. This must be done without extra charge to the persons using the system. Although the act does not require alterations to existing facilities if undue burden on the owner of the facility can be proven, it

does infer that hearing disabled individuals are to be provided with appropriate equipment, whenever possible. It's the law. There is a similar requirement in Canada, at least for new construction.

Why use FM systems? FM (frequency modulated) signals fill a room and will penetrate some walls and petitions. These signals do not require "line of sight" direct contact between the transmitter and the receiver. FM signals generated by hearing enhancement transmitters travel several hundred feet. Infrared systems provide excellent sound quality, but require a direct "line of sight" transmission. This is virtually impossible to achieve with dancers moving around the floor. Induction loop systems also provide good sound quality, but are not portable and could not be moved from hall to hall.

**How many FM frequencies are there?** There are 10 wide band frequencies and 77 narrow band frequencies. For large area systems, there are no significant benefits to using a narrow band frequency rather than wide band.

What is the recommended frequency to use? CALLERLAB has recommended the use of wide band frequency 72.9 MHz. Most dancers use this frequency. By having a standardized frequency, dancers who own receivers can attend a variety of dances and travel outside of their area without having to change frequencies.

What are the components of an FM hearing enhancement system? The system is composed of a transmitter and a receiver. Multiple receivers can be used with one transmitter. The transmitter plugs into the cuer's amplifier and sends the signal to the receivers. A receiver is worn by each dancer using the equipment.

**How do I plug the transmitter into my amplifier?** The recommended way is to plug the transmitter into a "line out" or "tape out" jack. If your set has more than one line out jack, use the "high line out". If your amplifier requires an amplified monitor (e.g. Hilton 75), then you can plug into the "monitor out" jack. Do not use the monitor jack if your system does not require an amplified monitor. Some individuals plug the transmitter directly into a speaker jack. This is not recommended, as it is possible to cause an impedance mismatch between the speaker and the transmitter. If one does not want to plug the transmitter directly into the amplifier, you can obtain a "telephone pickup" cord and connect the hearing enhancement transmitter directly to the speaker wire via this mode. Most dancers prefer voice and music, but some prefer voice only. If there is only one dancer using the system, you may want to set it at as they prefer. If multiple dancers are using the equipment, the majority of them will receive the greatest benefit by receiving both the voice and music.

**Can two hearing enhancement transmitters be connected to the same amplifier?** Yes, but there is rarely a reason for it. If the two are on the same frequency, there is no benefit to using multiple transmitters. If they are on different frequencies, there is some chance of interference and static.

**Can one transmitter be used with two amplifiers at the same time?** Yes. Simply put a "Y" connector into the transmitter and run a cord to each amplifier. Be aware that not all amplifiers put out the same amount of gain, and thus the loudness of each amp into the hearing enhancement transmitter may vary. This is not typically an issue if the square dance caller is using one amp and the round dance cuer is using the other one. The dancers can adjust the volume on their receivers accordingly. It can be a problem if several callers are working together (duets, trios, etc.) and are

using two amps. Round dance cuers do not typically have this situation.

**Can "single channel" receivers and transmitters be tuned to other channels?** Most manufacturers provide some means to tune a single channel device to a variety of frequencies. However, they are designed to stay at one frequency. For dancing there is rarely a need to change frequencies.

Are there multiple channel transmitters and receivers? Most manufacturers make multiple channel units. However, their use is limited and some manufacturers are discontinuing some of the models. It is important to remember that there are 10 wide band frequencies. If a person purchases a four channel receiver, they still only have a 40% chance of having a specific frequency available via the outside tuning knob (they may be able to tune it to any frequency internally, but they have that capability on a single channel unit as well).

**Can there be bleed over between adjoining halls if transmitters are being used in both halls?** Yes. A receiver will pick up the strongest signal. If halls are adjoining (or upstairs/downstairs), it is best to use different frequencies. If that is not realistic, then dancers need to be aware that their receiver will pick up the stronger signal. This may be from an adjoining room!

What is the power source for the system? Typically the transmitter is powered by electricity and receivers are battery powered. They may use either disposable or rechargeable batteries. Average disposable battery life in a Williams Sound receiver is 32 hours of use.

**How does the dancer couple the receiver to his/her ear?** Most dancers use a small rubber tip that is inserted into the ear. These tips can be easily cleaned and stay in place while dancing. Other dancers use an ear level speaker or a set of headphones. Some dancers have purchased special cords and custom made earmolds. These units are relatively expensive, but provide superior sound and cord durability. If an individual has hearing aids which are equipped with telephone coils, then they may be able to use an induction loop that is worn around the neck. The receiver picks up the sound via the FM signal and puts it into the induction loop, which in turn sends the signal to the individual's hearing aids. This is an ideal situation, but requires specific hearing aids.

**Should receivers be loaned to dancers?** Most people like to "try before they buy". Thus, they prefer to borrow a receiver prior to purchasing a unit. Some dancers only borrow receivers at large events and do not purchase a unit. Having at least one extra receiver also allows you to test the system to verify its function. Systems should be checked periodically, or anytime a question arises from a dancer using the equipment. Using the rubber tips on the receivers allows for cleaning of the units that are being loaned. My recommendation is to have each dancer borrowing a unit clean the tip prior to inserting it in their ear. Then, they should clean it again when they finish using the receiver. This way the tip gets cleaned twice for every use. Disposable alcohol wipes are inexpensive and are satisfactory. Use of a stronger cleaning solution is also acceptable. However, only the tip should be cleaned and the cord should not be immersed in any type of liquid. Multiple studies have shown that diseases such as HIV and Hepatitis are NOT transmitted through ear-wax. However, if any blood gets onto the ear tip (very rare), one should take appropriate precautions.

Why do dancers buy their own receivers? Many dancers choose to buy their own receivers. They do this for personal reasons, including ease of travel between groups (they can use it with different clubs on different nights), sanitary reasons, and to assure that a receiver is available whenever they want to use it.

What brand of system should one buy? There are several manufacturers of hearing enhancement systems. One should compare features, quality, ease of use, durability, price, etc., and make decisions accordingly. I do suggest that you purchase a unit that emits the CALLERLAB recommended frequency.

**Who should buy the system?** The answer to this question depends upon your personal needs. Some cuers have purchased systems. Some units have been purchased by clubs. Some are shared by several groups using the same hall.

**How much does a system cost?** Prices vary depending upon brand and retailer. Some manufacturers have less expensive transmitters and more expensive receivers. In the long run, this may not be cost effective, as a group typically only purchases one transmitter and multiple receivers. The most popular brand of hearing enhancement currently available is Williams Sound. The Williams Sound suggested retail price for the most popular transmitter used in round dancing is \$609.00. MSRP for single channel receivers equipped with rubber flex tips is \$99.75 each.

**Can dancers use their personal receivers at places other than square and round dances?** Yes. They can use the receiver at any establishment that uses an FM system and a frequency compatible with their receiver. This may include churches, theaters, auditoriums, etc.

Are systems available outside of the United States? Several manufacturers sell in Canada, and some of the Canadian dance groups are presently using hearing enhancement. The Williams Sound web page indicates that they also sell products in Asia and Europe.

Are there other ways to provide enhanced hearing to the dancers? All dancers need optimal sound, regardless of hearing capability. Round dancing is based strictly on auditory cues. There is no visual guide.

• Always set up the speaker(s) at the optimum place in the room. Check the room for sound quality, "dead spots", etc. If you are using portable speakers, this should be done every evening, as moving a speaker as little as a few inches may make a considerable difference. Cuers using a hall with permanently mounted speakers should still walk the floor periodically to check sound.

• During the evening, a cuer should monitor their sound at all times. Make sure that the music level is sufficient to hear, but does not override the cues. Many pieces of music vary in loudness during the song. Cuers need to monitor these changes and make frequent adjustments throughout each song to assure that the music is kept at a relatively constant loudness. This is done by frequent small adjustments to the loudness of the music. It may be done on the P.A. set or via the remote wheel located on many microphone cords. If you are not using the wheel volume control, I encourage you to learn to use it and to use it routinely.

• It is important that your voice is consistently significantly louder than the music (this is called voice to music ratio). One must maintain the same voice to music ratio throughout the dance.

If you are keeping your music at a relatively stable loudness, then your voice should be able to stay at a relatively stable loudness. However, there should still be constant monitoring and associated adjustments to maintain a constant voice to music ratio. If using an amplifier with V.U. meters, the voice reading should always rise above the music reading. Although not all Hilton V.U. meters have been created equal over the years (as per Hilton's comments to me a few years ago), it is still appropriate to determine auditorily (listen to yourself) the best places for the V.U. meters to peak to maintain your voice to music ratio. Remember that the absolute values of these meters may vary during the evening as number of people in the room and background noise varies. However, the voice to music ratio shown on the meters should remain constant (e.g. Your set [they vary – you have to check your own equipment!] sounds the best when you have the music peaking at 2 bars on the V.U. meter and the voice peaking at 3 bars. The size of the crowd increases and you need to turn up the volume of the music to peaking at 4 bars on the meter. Your voice should now peak at 6 bars.).

• Stand tall, hold your head upright, project your voice, speak slowly and distinctly while cueing and hold your microphone in the appropriate position. If you read from a cue sheet (including a laptop), position the cues at eye level, so that you do not have to look down. Literally try to finish one word before starting the next. This takes practice and constant conscious monitoring while you are cueing. Dancers should hear "hitch six", not "hishix". Speak directly into the microphone, not over the top of it or into the side of it. Check your microphone owner's manual to find out the best position to hold your mic. Or, better yet, take your microphone and just start talking into it (through the amplifier and speaker). Keep your voice at an equal loudness and "roll" the microphone up and down and sideways. The best position for the mic will probably be pretty obvious. For most mics, this will be with the top of the mic pointed directly at your mouth (mic is held horizontally, parallel to the floor). In summary, enhanced hearing results in enhanced dancing. The hearing impaired dancer can receive enhanced hearing through the use of special equipment. All dancers receive enhanced hearing through the use of appropriate techniques.