



Canadian Hard of Hearing Association

North Shore Branch

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Issue 38 September 2002

Mountain Ear

Canadian Hard of Hearing Association North Shore Branch Annual General Meeting



September 23, 2002 7:00 PM
Location: The Summerhill
135 West 15th Street
North Vancouver



Special Guest Speaker:

Susan Clarke, M.A., Aud(C)

Director of the Vancouver Hearing Centre

Topic:

**What You Should Know About Hearing Aids
If You Only Knew What to Ask**

Open to the Public – No Admission Charge
Refreshments will be served

President's Message

Counting Our Blessings



It is probably safe to say that there isn't anyone out there who enjoys having a hearing loss. Many of us who have lost a certain amount of hearing sometime in life know what we are missing. Isn't it true that when our hearing was taken away, we realized how precious

hearing is?

As a result of our hearing losses, many of us now wear one or two hearing aids. I received my first aid when I was six years old. I'll never forget how it brought me back into a world of sound, music, conversation and, yes, noise. My most exhilarating moment was hearing birds for the first time. That moment still holds a big space in my heart.

So often, however, we complain that our hearing aids don't give back to us what we lost: we can't hear people like we used to, we can't hear well in a crowd, we find noises especially painful, et cetera. Is it possible that our complaints are really noisy grief? Are we perhaps simply sad that we no longer have the hearing of our youth? Maybe our hearing aids aren't getting the thanks they deserve!

I must confess that I quickly forget the benefits my hearing aids offer me. When I think of them, however, my frustrations tend to shrink down to a manageable size. Let me give my hearing aids the "spotlight" for a few moments.

- They have opened me up to many sounds of nature. I simply love hearing gurgling water, birds, wind in the trees. Hiking and cross-country skiing have become my favourite sports simply because I can enjoy nature's gifts of sight and sound.
- They have helped me develop some positive habits. For example, I have learned to listen to people with everything I have. Without my hearing aids, I would quickly give up and become a recluse.

- They cannot pick up what people say under their breath, and that's usually language I don't want to hear anyway!
- They are easily turned off when unwanted noises are around. I can "tune out" traffic noise, stacking dishes, my shopping cart on the pavement, music that's too loud, noisy fans and screaming kids. While a student in university, I could turn my hearing aids off in the library and study in peace.
- They allow me to use the loop system, wherever it is available. All the noises of chairs scraping, pages turning, babies crying and people whispering around me are all eliminated! The speaker comes in clearly and without any interference. (My hearing son told me he wished he could use the loop system!)

So let's toast to our hearing aids and all that they do for us. They do deserve it.

An even better way to express our thanks for our hearing aids is to thank our audiologists. I intend to do that at our AGM on September 23. Susan Clarke, an audiologist in Vancouver with 19 years experience, will be our guest speaker for the evening. Susan has been my audiologist since my family and I moved to North Vancouver. With patience and thoroughness, she has done a tremendous amount of work to meet my hearing needs. Her presentation on hearing aids promises to be both informative and encouraging for each of us who wear hearing aids, are looking into purchasing a hearing aid, or those of us who are trying to help a loved one make the step toward better hearing. Invite a friend or family member. **Make sure you note the new location for our meeting at the Summerville.** See you there!

'Til next time,



Flo Spratt

Assistive Listening Systems (Part 2)

By Hugh Hetherington

In the last issue of *Mountain Ear* I wrote about different listening situations and their effect on the Hard of Hearing. To conclude this article I would like to acquaint you with the different assistive listening systems (ALS) that are available to assist in difficult listening situations. These generally fall into three categories: (1) Inductions Loop Systems (IL), (2) Frequency Modulation Systems (FM), and (3) Infrared Systems (IR). These types of systems can be thought of as “binoculars for the ears.” In other words, they help a person with hearing loss by increasing the loudness of specific sounds and bringing these sounds directly to the ear or hearing aid. Specifically, they reduce the effect of distance between Hard of Hearing people and the sound source; in this way, they minimize background noise and help to overcome poor room acoustics. ALS's are used in large areas, one-on-one, in restaurants and while viewing television. Their applications are social, educational, entertainment, and personal.

Induction Loop Systems

The system that has been around the longest is the induction loop system. While in widespread use in Europe and other parts of the world, these have tended to be less used in North America, giving way to the other two systems mentioned. A basic induction loop system consists of a microphone, loop amplifier, wire loop and an induction receiver. The most common induction receiver is a telecoil equipped hearing aid, however, separate induction receivers are available and can be used with earphones.

For the hard of hearing, the IL system would tend to be the most convenient, since with a telecoil equipped hearing aid, no special or additional equipment is needed to take advantage of the system. The hearing aid is switched to the “T” position and the sound from the microphone is delivered directly to the ear(s). A generally accepted statistic is that in North America only about 30% of hearing aids are equipped with telecoils and this fact is often used as an argument against using an IL system in

favour of an FM or IR system. However, it should be pointed out that these telecoil equipped hearing aids are of the *behind-the-ear* and the larger *in-ear* types. It could be argued that the persons wearing these types of aids, which tend to serve those with more severe hearing losses, are those who will benefit most from an ALS and are the ones less likely to be able to effectively use earphones.

Other advantages of IL systems are that they are reasonable in cost, durable and simple to maintain. They can be permanently installed or portable in nature. They are best installed while buildings are under construction, or undergoing modifications. Retrofitting a room with a loop system, on the other hand, can be difficult and often expensive. On the downside, multiple loop systems cannot be installed in close proximity to each other as there is overspill from the magnetic fields, and consequently cross interference. Loop systems, by their nature, only provide monaural sound transmission, but this is not usually a concern to the hearing impaired.

In addition to equipping rooms with a loop system, they can be used in smaller applications, such as, counter loops in banks, airports, etc., at home for the television or radio, and in Great Britain, we have heard, even some taxi cabs are equipped with loops.

FM Systems

FM systems employ radio broadcast technology to transmit the sound from the microphone to the ears of the individual. These generally transmit on special frequencies set aside for such transmissions, but there are professional grade FM transmitters that operate on low power in the FM broadcast band (88.1 to 107.5 MHz) that can be used for hearing assistance. While special individual receivers are needed for the former, the broadcast band system can be used with the generally available walkman type personal radios. Both require the use of headphones or an individual neckloop when the person has a telecoil equipped hearing aid. Another option would be to use a boot if the hearing aid has direct audio input.

FM systems are employed in venues, such as, churches, auditoriums, and some theatres. If privacy is a concern, an FM system is generally ruled out since FM transmissions travel through walls and other obstacles. On the plus side, multiple systems using different broadcast frequencies can be used

simultaneously for multi-program or multi-lingual conferences. FM systems are capable of providing hi-fidelity stereo sound.

As well as for use in larger audience type situations, smaller personal FM systems are available of both types mentioned above. The Hard of Hearing will find these of great benefit in restaurants, at social events, lectures, etc. Also included in this category would be 900 MHz FM cordless headphones which are readily available consumer products designed to be used in the home for television and stereo systems.

Infrared Systems

Infrared systems utilize light-based technology to transmit sound from infrared radiators to small portable receivers. This type of system guarantees privacy because light does not pass through walls. Because direct line of sight is required from the radiators to the receivers, they are best used in stationary situations where the person is not moving about. They are frequently installed in places of entertainment, and like FM systems, can provide hi-fidelity stereo sound. The receivers provided in theatres often employ stethoscope type receivers which go right in the ears and hygiene is a common concern expressed by users. Receiver units are, however, available for purchase which can be used with personal headphones, neckloops or silhouettes for telecoil equipped hearing aids.

If purchasing your own personal receiver, there are some things to consider. There are a number of systems in use, operating on different frequencies, making compatibility of receivers a concern. The two older systems use frequencies of 95 KHz and 250 KHz. A newer system has lately been introduced using higher frequencies of 2.3 MHz and 2.8 MHz. Frequencies of 3.3 MHz and 3.8 MHz are also available. These four frequencies can provide for four separate mono channels for multi-program or multi-lingual situations or two stereo channels.

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- Corporation of the District of North Vancouver \$1500
- Corporation of the City of North Vancouver \$1050
- Corporation of the District of West Vancouver \$200
- The North Shore Community Foundation \$200

For personal use there are small transmitter and receiver units that can be worn on the person. Conference transmitters are also available which can be used for small groups around a table. For in home use, Sony manufactures cordless infrared headphones for use with stereo and TV sets. The Sony system uses 2.3 MHz (left channel) and 2.8 MHz (right channel) and so the headphones are compatible with public systems using these same frequencies. For the older systems, an IR receiver that is switchable between 95 KHz and 250 KHz is manufactured by ALDS, Inc.

This article was written to provide an overview of the various assistive listening systems available to help the hard of hearing. If you are not sure whether your church, theatre, or public meeting room is equipped with one of these systems, we suggest that you look for the access symbol shown here or ask someone in authority at the location. If the venue is not so equipped, your asking helps to raise awareness of the needs of the Hard of Hearing. If they are interested in pursuing the installation of a listening system, be sure to refer them to your local branch of the Canadian Hard of Hearing Association for additional information. Much more information on these systems is available and can also be found by searching the web for “assistive listening systems.”



A hearing loop is installed here. Switch your hearing aid to the T-position.

Managing Your Hearing Loss Course

The next MYHL Course will be held at the West Vancouver Seniors' Activity Centre commencing on Tuesday, September 17. Sessions will be held for 8 consecutive Tuesdays from 10:00 AM to 12:00 Noon. The course fee is \$20.00. For information or registration, please contact Joan Bennett at 604-983-3131 or the West Vancouver Seniors' Activity Centre at 604-925-7280.

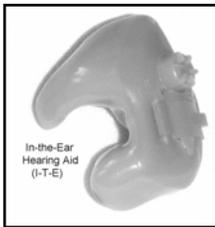
Visual Glossary of Terms

Very often when reading literature on Hard of Hearing subjects, the reader comes across terms that are unfamiliar. To help the reader fully understand such articles, a number of words used for types of hearing aids and other hearing associated terms are pictured here and/or described:

BTE – Behind-the-ear hearing aid. This is a hearing aid that fits behind the ear and sound is passed to the ear canal via a small clear tube and a fitted earmold. These are usually the most powerful hearing aids and can contain the most features and will usually have a telecoil.



ITE – In-the-ear hearing aid. This term is used to describe a hearing aid enclosed in an earmold shell that is molded to the shape of the person's ear canal. This usually fills the ear canal and is fully visible from a side profile. These hearing aids can also be quite powerful and as an option may be fitted with a telecoil.



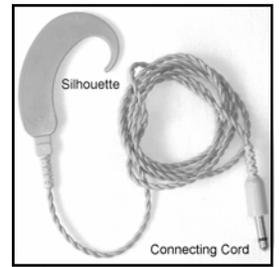
ITC – In the Canal hearing aid. This is similar to an ITE hearing aid but smaller and less visible from a side profile. These are more often used for mild to moderate hearing losses and are rarely equipped with telecoils due to space limitations.

CIC – Completely in the Canal hearing aid. This is the smallest type of hearing aid and usually fits deeply inside the ear canal and therefore is almost or completely invisible from a side profile. These are not equipped with telecoils.

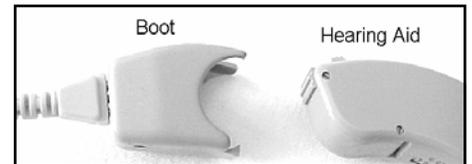


Silhouette – This is a device used to provide an inductive connection to the hearing aid from another audio device, such as radio, TV, FM or Infrared receiver. It is so named because it is flat, shaped like a hearing aid and slips between the hearing aid and the head. It works in a similar manner to a neck-

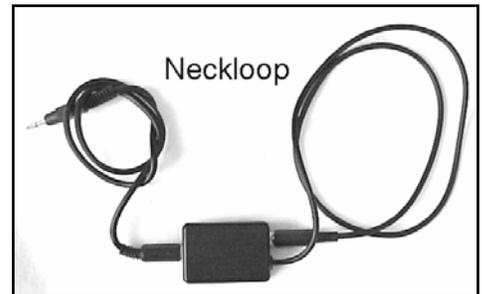
loop, but provides a better audio coupling to the hearing aid because of its close proximity to the hearing aid.



Boot – This is a small connector that clips onto the bottom of a BTE hearing in order to connect an audio signal directly to the hearing aid. The other end of the cord is plugged into an appropriate receiving device. The hearing aid must be equipped for direct audio input (DAI) and it is worth mentioning that each manufacturer's boot is specific to their hearing aid models and is not interchangeable between brands. DAI provides the best audio connection to hearing aids from assistive listening devices.



Loop – This is a loop of wire that goes around a defined area, such as a room and is connected to an amplifier and microphone. A **neckloop** is a smaller wire that goes around a person's neck and connects via a cord and plug to an audio device. This probably provides one of the most convenient ways to connect an audio signal to a hearing aid. The connection between a loop and a hearing aid is via a magnetic field and therefore needs no wire connection to the hearing aid.



T-Switch (telecoil) – This is often referred to as a telephone

switch. It is a three position switch usually marked M T O (Mike, Tel, Off), which when set on the "T" position turns off the hearing aid microphone and activates a small magnetic pickup in the hearing aid. It was originally designed to pick up the magnetic field surrounding a telephone receiver and



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permit the hearing aid wearer to hear on the telephone without competing background noise. It has also proven invaluable for use with many types of assistive listening devices. On some hearing aids, there may also be a position marked "MT" which allows the wearer to activate the telecoil while leaving the microphone switched on. On some hearing aids the on-off switch is on the battery door and in this case the switch will only have two positions (M and T).

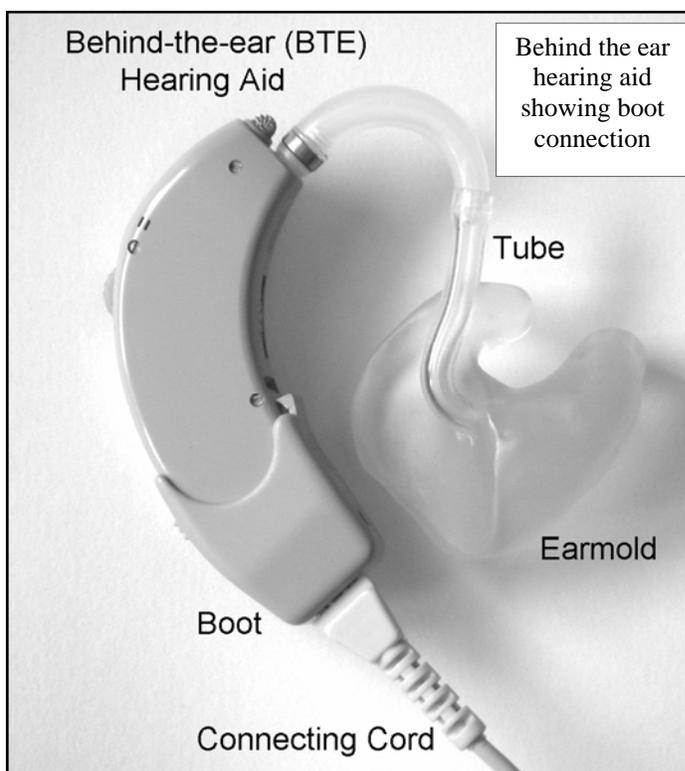
Analogue hearing aid – In all hearing aids, acoustical sound is picked by the microphone, processed, amplified and delivered to a receiver to enter the ear canal. In an analogue amplifier, the complex electrical signal to which the sound is converted is processed as an electrical signal to become an amplified version of the original signal. Filters or tone control circuitry are used to shape the signal to help match the particular hearing loss of the individual.

Digital hearing aid – In a digital hearing aid, the original acoustical signal is converted into binary digits (0,1) and processed within the hearing aid. With digital sound processing, the sound is encoded as a series of numbers that measure its pitch and volume at a given instant in time. Processing the sound bit by bit is much more precise, and certain details can be altered to more precisely fit the hearing loss of the individual. The digital signal is then reconverted to an analogue signal and delivered to a receiver to enter the ear canal.

Earmold – This is a custom earpiece molded from an impression of the hearing aid wearer's ear. They are usually made out of plastic or acrylic. Earmolds are a very important part of the hearing aid and are designed in various shapes and styles to affect the acoustical response of the hearing aid. For severe hearing losses, the earmold must form a tight acoustical seal to prevent feedback. A process called venting, ie. drilling a small hole through the earmold, can be used to affect the low frequency response of the hearing aid and reduce the occlusion effect of the earmold to the user. For a high frequency hearing loss, what is termed an open mold can be used effectively to provide a high frequency emphasis while allowing natural unamplified sound to enter the ear.

Feedback – This term is used to describe the high pitched squealing sound a hearing aid makes when sound escapes from around the earmold and feeds back into the microphone. When this becomes troublesome it is usually time to have a new earmold impression made.

Occlusion – This is the effect that an earmold may have on the sound or loudness of your own voice. This can be most annoying to a new hearing aid user. Your audiologist may or may not be able to change this, but most people get used to it over time.



In Memorium

The North Shore Branch was saddened to learn of the passing of two of our long time members. Clifford Fenner passed away on June 21, 2002 and Reginald McKernan passed away on July 6, 2002. On behalf of our members and the Board, the North Shore Branch would like to express our sincere condolences to the families of Clifford and Reginald. They will be sadly missed at our meetings.