

“Mention of goods or services in advertisements, articles, or meetings does not imply Hearing Loss Association of America endorsement, nor should exclusion suggest disapproval.”

What you need to know about...

**Assistive Listening Devices (ALDs),
Assistive Listening Systems (ALSs)
Hearing Assistive Technology (HAT)**

**You have your hearing aids. You have your cochlear implant.
but...
You still have trouble hearing!**

You have spent \$4000 + on hearing aids and still have trouble hearing. You are very, very frustrated. Then, someone tells you that you need some sort of assistive listening device or alerting system. You are about to explode. It's always something more. In essence, that's true if you are aggressive about hearing. You want to hear your grandkids; you have to hear at work; your spouse swears you have selective hearing.

Let's stop. **A simple question:** **Do you own a screwdriver?**

Do you own more than one screwdriver?

YES?? WHY??

That's what Hearing Assistive Technology (HAT) and Assistive Listening Devices (ALDs), Assistive Listening Systems (ALS) are all about. Hearing is not just a one situation (flat blade screwdriver) environment. The world has an infinite number of hearing situations (Phillips, square bit, star bits etc.). Our ears were created to deal with most of these situations. Because, for whatever reason, our ears stopped working, man has to invent devices to substitute. At best hearing aids are substitutes and frequently need help. **Hearing Aids are eyeglasses for the ears. ALDs are the binoculars.**

STOP

OK. Let's start again...

- **Assistive Listening Devices** (ALDs) create some form of amplification or captioning to help our understanding. (Hearing aids help our hearing—same thing but different)

- **Assistive Listening Systems** (ALSs) is just another terminology for ALDs, but may refer to large area assistive devices (We couldn't get our act together to use the same terminology across the country).
- **Hearing Assistive Technology** may include ALDs but tend to refer to multiple types of helpful devices to alert us to situations - wake us up, lets us know the timer is going off or the phone/doorbell is ringing.

“Hearing is not an all or nothing phenomenon. People show varying degrees of hearing at varying frequencies in both ears.” (*David Baquis, NAD*). Some people will use ALDs/HAT with or without hearing aids. An individual might not be able to afford hearing aids and may temporarily substitute a Personal Communicator (more later). Another individual may have hearing aids but because of the noise will use an FM microphone to zero in on a particular voice. Perhaps an individual just needs a volume boost to hear a grandchild.

No one article such as this can describe all of the devices. That would take a very large book which would quickly be outdated because new devices are being invented almost daily. A good starting point would be to **READ** some HAT catalogs like a book. Find out what exists and then apply them to your needs and pocketbook. You might just google Hearing Assistive Technology vendors and find some online catalogs. Make notes.

There are 2 Types of Assistive Listening Devices:

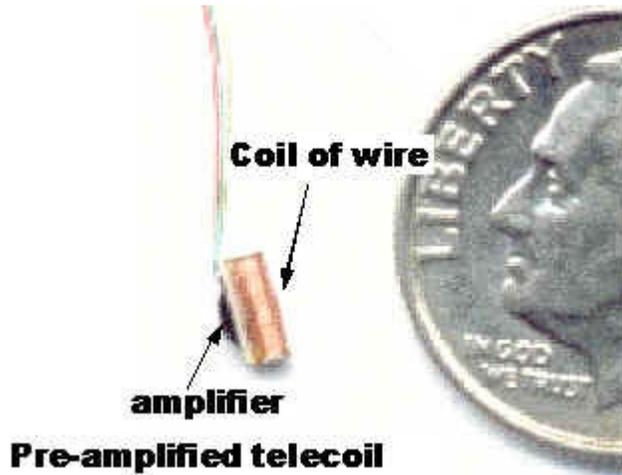
- **Wired Devices:** Carry the sound signal through an electrical wire (via a microphone, amplifier and wire).
- **Wireless Devices:** Carry the sound signal without an electrical wire (via a microphone, amplifier, transmitter and receiver).

Hearing aids and ALDs work together to help you hear better the same way bifocals help you to see better – up close and far away. All assistive listening devices work basically in the same way. They carry sound via a microphone through a wired or wireless system to your ears via a headset, T’coil, or Bluetooth Streamer. (Lost you again?)

- **Headsets, ear buds, ear clips/hooks** are the typical/standard devices used with radios, ipods, stereos etc.
- **T’coil, T-switch, Tele-coil Telephone Switch** (All are the same thing) is an electromagnet inside of the hearing aid (similar to the electro magnet in old dial up phone receivers) that is activated by an external magnet or electromagnetic field to give a very direct sound to the hearing aid and into the ear. “A tele-coil can, therefore, be an alternate or supplemental input device for a hearing aid. Normally, a hearing aid "listens"

with its microphone, and then amplifies what it "hears". But with a tele-coil used as the input source instead of (or in addition to) the microphone, the hearing aid can "hear" a magnetic signal which represents sound/words."

(<http://www.ncheatingloss.org/telecoil.htm?fromncshhh>)



- **Bluetooth**” is a [wireless](#) technology “standard” for exchanging data over short distances (using short-wavelength [UHF radio waves](#).) It can connect several devices, overcoming problems of synchronization.” (Wikipedia) Basically, Bluetooth is a standard system by which two or more unrelated devices (e.g. radio and a hearing aid) may communicate with each other.
- **Streamers**, for the most part, are body worn communication devices that allow the hearing instrument to be connected to more sound sources than ever before (Telephones, computers, stereos may be connected to hearing aids via a streamer.)
(<http://www.comfortaudio.com/us/professionals/solutions/streamer-devices-wireless-hearing-products>)

In general, the ALD will use a wire, a tele-coil, a Bluetooth device or a streamer to carry sound to the hearing aid often bypassing the HA’s microphone for a specialized microphone in the ALD. Some wired ALDs may be use a headset/earbuds etc. without a hearing aid to carry the sound directly to the ear. Because hearing aids are programmed to take sound frequencies that we have trouble hearing and compress them into frequencies that we do hear, a system using hearing is most effective.

One type of system may use a personal communicator such as a “Pocket Talker” with a neck loop to carry sound directly to the hearing aids T’coil.

- **A Personal Communicator** is a very small microphone and amplifier combination (about the size of a pack of cigarettes).

- A **Neck-loop** is a small wire that literally loops around the neck and connects to the personal communicator. The looping wire creates an electromagnetic field which will activate the T-coil. (In a large system, one may loop a chair, a room or an auditorium and activate the T-coil in the same manner.)



- Plug the neckloop into a TV, phone, or an assistive listening device receiver. The t-coil picks up the electro- magnetic signal.
- There's no need to wear headphones! Just wear your neckloop and hearing aids switched to t-coil!

Wired Devices work in a similar manner.



Wired devices are simple amplification devices.

Wired devices contain a microphone, amplifier, and wire.

- Sound Wizard
- Pocket Talker
- Sound Director
- Etc.



Some hearing aids have optional ALDs such as an **FM microphone**. These may be the size of a small candy bar or even the size of a large pen. The device may have multiple microphones for particular situations (Omni Directional-microphone picks up in 360 degrees and would be used on a table at a meeting or restaurant. A Semi-Directional microphone may be used to pick up sound in front of the listener but not behind. A directional microphone would pick up sound in a very narrow path in front of the listener.) A teacher or speaker may wear the microphone so that a student wearing a hearing aid could hear better in the classroom.



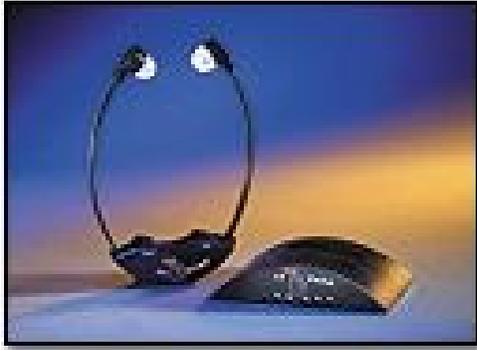
The FM receiver is attached to a small boot on the end of the hearing aid.

The FM transmitter is a small candy bar shaped instrument that you can hold in your hand or have the speaker wear around his or her neck

Other systems such as an Infra-Red system may be used for watching TV or in a movie theater.



- Infrared systems use infrared light to transmit the signal.
- The transmitter sits on top of the TV.
- Use the stethoscope-style receiver to hear the TV sound directly in your ears.



The infra-red light is like the light on your TV remote control. It will work only in a line of site to the transmitter.

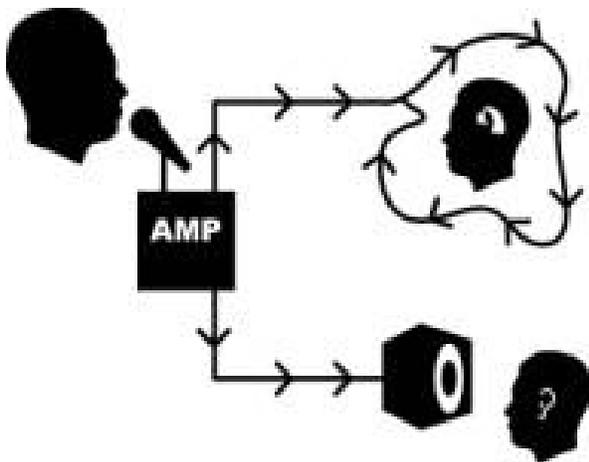
There are headset types of receivers that are often used in theaters.



There are also small receivers (about the size of a pack of cigarettes). These may be used with a neckloop or headset.

The small bubble on the front of the receiver must face the transmitter.

A new/old system is now becoming the preferred ALD. Room or auditorium loops.



- This drawing shows how an induction loop system works in a large area such as a concert hall or theatre.
- The upper right figure is wearing a hearing aid and is listening through the induction loop wire that has been placed around the perimeter of the room.
- The lower right figure does not have a hearing loss and is listening through the PA system.

Loop systems have been around since the 1940's but have recently become very popular

Loops are very convenient because they allow the individual to merely switch/turn on the t-

because better science has eliminated many of the problems of the older systems.

coil.

No other devices are required.

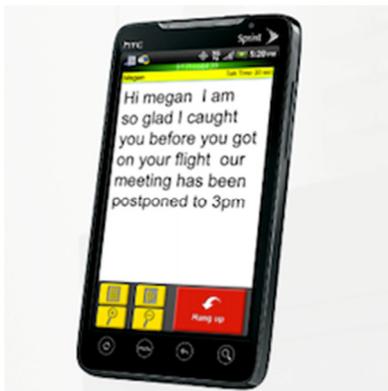
As was stated earlier, there are many ALDs. One must look through many catalogs or online vendor stores to see all of them. One must also peruse the websites of the various hearing aid manufacturers. They will discuss the optional equipment that can accompany your particular brand of aids. Let's take a moment to discuss some other devices.



Caption phones have been around for a number of years now with multiple competitors. A caption phone gives you the captions 1-3 seconds behind the voice, similar to TV captions. Unlike a TTY or TTD, the captioner/revoicer is not visible on the line.

For KY residents these phones are free through the KY Commission on the Deaf and Hard of Hearing. Most states have similar programs.

There are also highly amplified phones available.



Some smart phones can receive both voice and captions at the same time. A 4G or better network is required. Registration with a caption program (free) is also required.

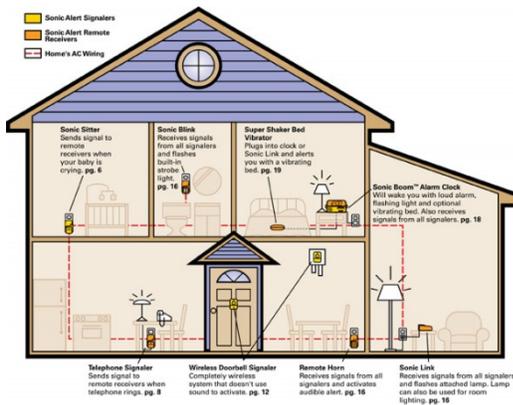


Personal Communicators are very versatile. They accept different types of microphones, headsets, neck-loops, ear buds etc. They can be used in multiple situations. Depending on the model and manufacturer, they have different amplification capabilities.



Specialized alarm clocks will flash a strobe light, a lamp and shake the bed to wake you.

Depending on the brand and models, they can be connected to a whole house system to alert you to a smoke alarm, doorbell, telephone, and loud noises.



Whole house alerting systems are very important.

Specialized smoke alarms that will flash a light and shake the bed are life savers.



Wikipedia

A service dog is a wonderful HAT. Did you know that there are “Hearing Dogs” that can alert you to the sounds around you? Alerting you to someone calling your name, the sound of a horn, someone coming up behind you, the doorbell, smoke alarms etc. is the job of a trained certified hearing dog.

Have you given up on going to the movies, Actors Theater, the KY Center for the Arts? The American Disabilities Act (ADA) requires all public performances to provide equal access. For people with hearing loss, this may be open or closed captions or hearing devices. The captions may be open on the screen or closed, visible only through special devices provided free by the theater. The hearing devices may be Infra-Red (IR), FM listening devices, or a Loop System. Most of the large chain theaters provide closed caption devices for most movies. Smaller theaters will probably have an amplified ALD. Call ahead. ASK. Make sure they are available for the performance you want at the time you desire.

As was stated earlier, it is important that an individual does his homework. Attending Hearing Loss Association of America meetings help. Word of mouth, education programs, conferences conventions and *Hearing Loss Magazine* help us to learn what exists and what may help our individual situation.

The Technology is Here.

“The problem here is not technology. The technology is available and it can help. But it cannot help if the person with a hearing loss is reluctant to be upfront about his or her communication need.”

“Without self-acceptance, no help will be sought and none will be given.”

Mark Ross, Ph.D.

Thank you, Judy Vinegar, for your contributions support and assistance.

Ed Schickel

HLAA-KY Home

Please understand. The mention or the picture of a product should not be construed as an endorsement. Nor should the exclusion of a product or manufacturer be interpreted in any way except as an issue of space and time or the failure of the author. The intent of this paper is to give the reader the understanding that an abundance of technology is available. Effectiveness is in the “ear” of the beholder. Hearing Loss and hearing aids vary so much that a product that is wonderful for one person is not so wonderful for another. The reader should use this paper as a starting point in the research for personal assistance.