DEPARTMENT OF DEFENSE

HEARING CENTER OF EXCELLENCE

Assistive Listening Devices

There are a variety of technologies – assistive listening devices (ALDs) or hearing assistive technology systems (HATS) -- that can help individuals with hearing loss to communicate more effectively with others, be more aware of their surroundings, and participate more fully in daily activities. For example, assistive devices can be used to alert people when a door bell or alarm is sounding, and they can also help with hearing and understanding speech at home and in other settings. Assistive devices can be used with or without hearing aids.

ALDs can be useful to support hearing and communication in social settings, at home while watching TV, outdoors in public settings, or when traveling in vehicles. These devices are about the size of a cell phone and can increase sound levels while reducing background noise. Some ALDs have directional microphones that can be angled toward a sound source of interest. Amplified sound can be picked up by a hands-free receiver that the listener wears conveniently as a headset or ear buds, enabling more effective communication.

Alerting devices are designed to notify hearing-impaired people of events or information they might otherwise miss. An alerting device might emit a loud sound, vibration, or visual signal (for example, a blinking light) to signify the press of a doorbell, the ring of a telephone, or the buzz of an alarm clock.

Another type of ALD is a telephone amplifier, which can be helpful to amplify speech over the phone. Telephone amplifiers can also be beneficial for people who have difficulties hearing on the phone but do not use hearing aids. They are available as features built in to new telephones or in new handsets that can be added to existing telephones. A more specialized product, the voice caption telephone, visually displays every word the caller speaks throughout a conversation. This option allows the user to listen to the caller and simultaneously read the written captions in a display window. Voice caption phones are available through a federally-funded program that supports telephone accessibility for those with hearing loss.

Personal frequency modulation or FM systems are like miniature radio stations that operate on special frequencies. The personal FM system consists of a transmitter microphone (used by the speaker) and a receiver (used by the listener). These systems are often used in large gathering spaces such as theaters, concert halls, places of worship, museums, public meeting places, corporate conference rooms, and convention centers. In these settings, the transmitter must be built into the overall sound system. Users (listeners) are then provided with an FM receiver that they connect to their hearing aid or cochlear implant. If the user doesn't wear a hearing aid, the receiver can be connected to a headset.

Infrared systems are often used in the home with TV sets but, like FM systems, they can also be operated in public settings. With an infrared system, sound from a TV is transmitted to a receiver headset using infrared light waves. The receiver's volume can be adjusted to comfort level without changing the volume of the TV for other viewers who have normal hearing.

Induction loop systems work with hearing aids. These systems are most commonly used in large group areas, but they can also be purchased for individual use. An induction loop wire is permanently installed, typically under a carpet or in the ceiling, and connects to a microphone. When someone speaks into a microphone, this generates a current in the wire, which in turn creates an electromagnetic field in the room. When a person with impaired hearing switches their hearing aid to a designated setting, their hearing aid's telecoil picks up the electromagnetic signal. Users can then adjust the volume of the signal they receive through their hearing aid.

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