

## CAP

### **The Computer/Electronic Accommodations Program, Office of the Assistant Secretary of Defense (health affairs)**

Workplace Assistive Listening Devices for Hard of Hearing

American Speech-Language-Hearing Association ([www.asha.org](http://www.asha.org)) celebrates Better Hearing and Speech Month in May each year. ASHA is raising awareness about communication difficulties and it hopes to inform customers about communication solutions. This month, CAP provides a special coverage on assistive listening devices.

Assistive Listening Devices (ALD's) provides a communication solution for deaf or hard of hearing individuals who have residual hearing capability and have difficulty understanding or communicating with hearing persons. With new powerful amplification devices and greater portability of these devices on the market, there are more ALD options available. The purpose of an Assistive Listening Device is to cut down (or eliminate) the background noise which allows easier access to the communication. The volume of the communication compared to the volume of the background noise is what is called the "Signal To Noise Ratio". Hearing specialists can help determine your Signal to Noise Ratio requirement to help you select the appropriate ALD.

Some ALD's are also used to improve hearing and communication when using the telephone.

ALD technologies fall in five general categories:

1. **FM Systems** - Sound, via microphone or public address system, is fed into an FM transmitter. It sends sound to small, individual FM receivers. Hearing-aid users whose aids have telecoils set the aid on the "T" setting and use a neckloop listening attachment; earphones are used by everyone else. FM systems produce an excellent sound quality. Users have freedom to choose their own seating locations. The systems are not subject to electrical interference and are highly portable, simple and inexpensive to install.
2. **Induction Loops** - A loop of wire circling the room (or part of the room) near a ceiling or floor, receives input from a PA or microphone through an amplifier and transmit the sound by creating a magnetic field within the loop. This field can be picked up by listeners with hearing aids on the "T" setting or with telecoil equipped receivers and an ear-piece. User's receiver is equipped with an amplifier to control the sound levels. Prepackaged systems can be easily installed in small and medium-sized spaces, are very inexpensive and portable. Fluorescent lighting can interfere with transmission.
3. **Infrared** - Infrared systems use invisible, harmless light beams in the infrared range of the spectrum to carry information from a transmitter connected to a PA system or microphone to a special portable receiver worn by the listener and fitted with neckloops, earbuds or headphones to meet the user's needs. Sound quality is good.

The system is easy to operate and is not subject to electrical interference. It is contained within walls of the area and it's the only system appropriate for confidential transmission. Large amounts of sunlight, incandescent light may produce interference. Receivers must be in the line of sight of the transmitter.

4. **AM Systems** - AM systems are similar to FM systems. Receivers, which may be AM radios in some cases, pick up the signal broadcasted from an AM radio transmitter coupled to a microphone or PA system. AM systems have relatively poor sound quality and they do not perform well in buildings with substantial amounts of structural steel.
5. **Portable and self-contained amplifiers** - Individually held amplifiers are used during one-on-one conversation, in a small group, or when listening to the TV or radio. It can work with a hearing aid to reduce background noise and includes volume control, a microphone input jack, and an earphone output jack.

For additional information or a needs assessment to identify your appropriate ALD solution, please send an email to the CAP Deaf and Hard of Hearing team at paul.singleton@tma.osd.mil.

Please visit the Computer/Electronic Accommodations Program online at:

<http://www.tricare.osd.mil/cap/>