

Hearing Protection

Week Number 45 (November 5 - 11)

OBJECTIVES

Upon completion of this safety talk, participants will be able to:

- *Understand the need for hearing protection*
- *Be familiar with the various types of hearing protection*

Once it's been determined that the noise level is hazardous at the jobsite, hearing protection needs to be used. Many times, this brings up questions. What do I use? Your concern may be that there are so many types. Will the protection interfere with normal hearing at the site? You may be thinking: I will not be able to hear warning sounds or other sounds critical to my work, like back up beeps or even normal conversation.

To address your concerns, you need to know that if the proper device is selected you will be protected and still able to hear critical sounds. Hearing protection reduces noise levels, but only by the level indicated on the device. Sound is measured in decibels. Each device has a Noise Reduction Rating (NRR). NRR is also in decibels. To ensure you are not exposed to noise over the maximum exposure (85 dB over 8 hours), the NRR of the hearing protection device is matched with your level of exposure (loudness and duration of exposure). If you are exposed to 90dB of noise and wearing ear-plugs with an NRR of 29, your actual noise exposure will only be 61dB. Alarms will only be reduced to the same level and should still be within your hearing range. Alarms are required to be louder than ambient or surrounding noises and typically range from 90 dB to 110 dB. This is well within the range of hearing even with the protection noted in the example. Some alarms even adjust according to the ambient noise to ensure they are 10 dB higher. There are also protective devices that adjust according to ambient noises. If you need to hear subtle changes in the sound of machinery, the device can amplify the low-level noises while decreasing dangerous noise levels.

All types of hearing protection have an NRR rating. So, once the protection level is reached, selection of type is more comfort and ease of use. The basic types are expandable foam plugs, pre-molded, reusable plugs, canal caps and earmuffs. Expandable foam plugs work just the way they sound. These are made of a formable material that fits to the shape of each person's ear. To fit properly the plug must be rolled until it is thin enough to fit halfway into the ear canal. This is the main disadvantage to this type of ear protection; it's very difficult to roll the plugs small enough to make them fit. A few manufacturers offer a small size expandable plug.

Pre-molded plugs are just that. They are pre-molded for your ear. They can be made of silicon, plastic or rubber and come in a variety of sizes to fit any ear. Although typically sold as pairs, you may need a different size plug for each ear to get the proper fit. Plugs should seal the ear canal without being uncomfortable. The main advantages of this type of ear protection is that they are relatively inexpensive, washable, and reusable and come in many sizes. They also reduce sounds more evenly than expandable foam plugs.

Canal caps consist of flexible tips similar to pre-molded plugs on a lightweight headband. The main advantage to canal caps is that they are quick to put on and take off and easy to store around the neck. This makes them ideal for intermittent use. The main disadvantage is they provide less protection than either plugs or muffs.

Earmuffs have rigid cups with soft plastic cushions that seal around the ear to block noise. There are many models designed to fit most people and they are easy to use. They block out noise by completely covering the outer ear. As discussed earlier, there are even earmuffs that will adjust jobsite noise levels up and down. These devices are expensive but may be needed. There are some drawbacks to any type of earmuff. Many find them to be hot and heavy in certain environments. They also don't work well for those with heavy beards, sideburns or glasses. The heavy hair and the earpieces of the glasses break the seal of the earmuffs and allow noise in.

DISCUSSION QUESTIONS

- Does hearing protection just protect against the "bad noise"? Explain
- Which type of hearing protection is best for intermittent users?
- Why aren't earmuffs used more frequently for hearing protection?