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## **HEARING PROTECTION**

When you are exposed to noise levels that are at or above 85 decibels (dB) averaged over 8 working hours, specific OSHA rules take effect which involve monitoring of noise exposure, audiometric testing, baseline audiograms, annual audiograms, audiogram evaluations, hearing protectors, training, and record keeping. Hearing protection is a serious business.

This Safety Meeting will focus on your hearing system and stress the importance of your involvement in your own hearing protection.

Your ears, on the side of your head, are the least important part of your hearing system. Should you lose your ear, you would not necessarily lose your hearing. Your outer ear, made of cartilage, includes the external auditory canal which leads to the eardrum which is only 2/5" in diameter. The eardrum separates the outer ear from the middle ear. Within the middle ear are three (3) bones commonly called the hammer, anvil, and stirrup. The stirrup (stapes) is the smallest bone in your body -- thinner than a grain of rice. Also in the middle ear is the Eustachian tube which connects the middle ear to the back of the throat to maintain equal air pressure on both sides of the ear drum.

The inner ear, where sound waves are converted to electrical impulses, actually has a function unrelated to hearing. It contains the semicircular canals which completely control your balance. Also in the inner ear is the cochlea, a small spiral coil in which you would find the basilar membrane which has over 15,000 hair cells. These hair cells are the end of the auditory nerve which goes directly to the temporal lobe of the brain.

It is interesting to note that the hardest bone in your whole body is the temporal bone which protects two thirds of the auditory canal and all of the middle and inner ear. Nature itself seems to have placed a high priority on your hearing.

Extremely loud noises or continuous noise can cause irreparable damage to the ear. It is quite possible to lose hearing at one or more frequencies and have normal hearing at other frequencies. The frequencies that would be lost are the frequencies that one might find in background noise in a work situation.

Hearing protection is one of the easiest to use and least expensive types of personal protection available. Protect your hearing. If you are issued hearing protection, use it!