Training Manual	
Subject: Hearing Conservation and Protection	**Number:** 5.030

I. Overview

Exposure to high levels of noise causes hearing loss and may cause other harmful health effects as well. The extent of damage depends primarily on the intensity of the noise and the duration of the exposure.

Noise-induced hearing loss can be temporary or permanent. Temporary hearing loss, also called temporary threshold shift (that level of sound that a person can just barely hear), results from short-term exposures to noise, with normal hearing returning after a period of rest.

Generally, prolonged exposure to high noise levels over a period of time causes permanent damage. Therefore a person who regularly sustains a temporary loss or shift in hearing threshold will eventually suffer permanent hearing loss or noise induced permanent threshold shift (NIPTS). NIPTS occurs very gradually over time. In fact, for a long time the worker may not notice any change in hearing acuity until the hearing loss begins to interfere with everyday communication. By then, it is too late to do anything about the hearing loss that has occurred.

II. Selecting hearing protection

Some of the factors you should take into account when selecting the right hearing protection devices (HPDs), include:

1. Noise hazard
   How much noise will you be dealing with?
2. Noise frequency
   Will it be continuous or intermittent? (Some earplugs or muffs reduce the force of noise (attenuate) better at lower frequencies than at higher frequencies.)
3. Fit and comfort
   Protective devices must fit properly and be comfortable enough to wear as long as they are needed.
4. Noise Reduction Rating (NRR)
   All hearing protectors carry a label indicating the NRR; a higher number on the label means more effectiveness.

HPDs filter out the loud noise. This means they do not block out sound completely, but they reduce the amount of sound reaching the delicate parts of the ear. By doing so, they offer some protection so that hearing will not get overloaded by the surrounding noises (glare) that interfere with speech and machinery sounds.

III. Audiometric testing

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If your facility has noise exposure equaling of exceeding an average of 85 decibels (dB) or more over an eight-hour day, they are required to provide employees with audiometric (hearing) testing.

A trained technician uses an audiometer to send tones through headphones. The person being tested responds to the test sounds when they are first heard. The chart that records responses to the test sounds is called an audiogram.

IV. Hearing protection is common sense

You are ultimately responsible for protecting your own hearing. You have the most to lose if you suffer hearing loss as a result of on-the-job noise hazards. Here are a few points to remember about protecting your sense of hearing:

1. Make sure earplugs fit properly
2. Have an annual hearing test
3. Keep HPDs in good operation
4. Don't use homemade HPDs or cotton; they don't work
5. Wear HPDs as required, if in a room that requires HPD, for less than ten minutes, the requirement for use is waived.

The following chart illustrates how loud standard sounds are in decibel measurements and how long an average person can be exposed to a decibel level without sustaining hearing loss.

Environmental Noise		NIPTS Levels	
Whisper	30dB	8 Hours per day	85dB
Normal Conversation	60-65dB	6 Hours per day	86dB
Telephone Dial Tone	80dB	4 Hours per day	88dB
Train Whistle	90dB	3 Hours per day	89dB
Snowmobile, Motorcycle	100dB	2 Hours per day	90dB
Jet Engine	140dB	1 Hours per day	94dB
Death of Hearing Tissue	180dB	.5 Hours per day	97dB

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