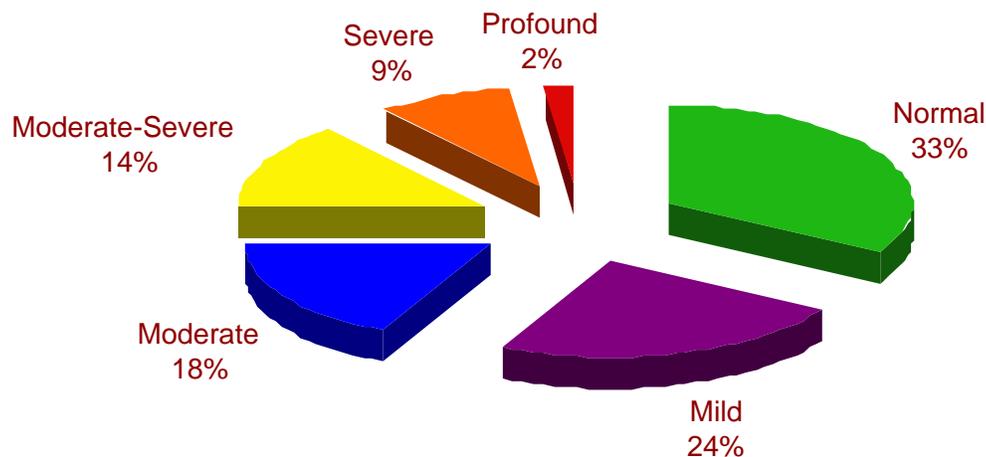


IAFF Convention Hearing Tests: Fire Fighters Still Suffer From Hearing Loss

The IAFF Department of Occupational Health and Safety in conjunction with the National Institute for Occupational Safety and Health (NIOSH) provided an opportunity for convention delegates to have their hearing tested during the 1998 IAFF convention. The NIOSH hearing test consisted of a questionnaire and a pure-tone test to measure hearing over a range of frequencies. The results were explained to each participant at the completion of the test. Additionally, a written explanation will be mailed by NIOSH to each participant's home. A more detailed analysis will compare this year's results to a similar test administered at the IAFF's 1984 Convention held in Cincinnati, Ohio.

IAFF BIENNIAL CONVENTION Hearing Test Results



Of the 458 fire fighters tested two-thirds had measurable hearing loss. Test results indicate that despite the availability of quieter apparatus and increased awareness, fire fighter's exposure to noise is still a significant hazard. While noise induced hearing loss is irreversible; it is also a preventable disease.

Good hearing is a matter of life and death for fire fighters. Fire fighters must have the ability to hear a victim cry for help; to hear the pre-alert on their PASS device and the emergency audible alarm signal of other fire fighters in danger; to hear the audible low-pressure alarm on his or her self-contained breathing apparatus (SCBA) alerting the individual that this critical respiratory protection device is running out of air; and to hear noises associated with imminent collapse or noises associated with changes in the fire pattern. Fire fighters also must have the ability to localize sounds in a fire fighting environment where smoke and darkness often minimize visual cues. Additionally, fire fighters must be able to hear tactical commands, hear their radio for communication purposes and must be able to hear traffic sound and, discriminate and localize safety related acoustic cues such as horns, sirens, screams, collapsing walls, beams, timbers or gas leaks.

Fire fighters are constantly exposed to noise from sirens, air horns, apparatus engines, and powered hand tools such as those used in forcible entry, ventilation, and extrication activities. Excessive hearing loss in the fire service is also explained by the interaction between noise exposures and other chemicals found in the fire fighters' work environment. Many of the chemicals produce a greater hearing loss than expected when fire fighters are exposed to both the noise and toxic agents at the same time. Every day on the job jeopardizes a fire fighter's hearing.

Excessive noise may also have adverse health effects other than hearing loss. There are an increasing number of studies that demonstrate that noise may have an adverse impact on both the physiological and psychological aspects of a person's general health. Studies have shown noise to be a risk factor in such stress-related illnesses as hypertension, ulcers, allergies, and neurological disorders. Noise has been shown to cause nervousness, fear, psychosomatic illness, and results in sleep disturbances.

Warning Signs of Hearing Loss

Some warning signs of hearing loss are:

- You must shout in order to be heard by someone working near you
- Your hearing is dulled immediately after your work shift
- After your shift you experience noises in your head or ringing in your ears
- You, family members, or friends notice that your hearing is getting worse
- You have difficulty hearing people when others are talking around you
- You regularly experience headaches during or after your work shift

Hearing Conservation Programs

Each fire department should have a hearing conservation program. Hearing conservation programs should include a process to identify areas and equipment that are potentially hazardous to the hearing of fire fighters and EMT's. Programs should identify ways that either reduce the noise produced by equipment or protect the fire fighter/EMT from the noise. Fire fighters should receive annual hearing tests to track their hearing form year to year. An appropriate hearing test is described in the *Fire Service Joint Labor-Management Wellness/Fitness Initiative*. Training which explains how fire fighters can identify the early signs of hearing loss and steps they can take to protect themselves should also be included in the program.

Some steps fire departments can take to protect fire fighter's hearing are:

- Completely enclosed apparatus cabs and jumpseats
- Air conditioned vehicles that allow fire fighters to ride with the windows closed
- Apparatus with sound dampening materials incorporated into their design
- Use of rear engine chassis to distance fire fighters from the noise as far as possible
- Placement of the sirens and horns either below the front bumper, in opening in the front bumper, or in the front grill of the apparatus. The vehicle structure should be used as a shield from noise energy when ever possible.
- All mechanical sirens should be fitted with a metal shroud to direct the sound forward. Such shrouds have resulted in 70% reductions in sound energy to the fire fighter/EMTs
- Hearing protection devices (e.g. muffs) should be used during exterior operations where motorized hand tools are utilized
- The use of communication headsets which utilize speakers inserted in a protective muff and incorporate a noise-blanking microphone. Some of these communication sets now incorporate active noise cancellation to further reduce background noise.

Local affiliates should contact the IAFF's Department of Occupational Health and Safety for more information about hearing conservation programs, the ***Fire Service Joint Labor-Management Wellness/Fitness Initiative***, OSHA regulations, or NFPA standards.