

TO: Police Chiefs, Public Safety Directors, and Fund Commissioners

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RE: Firearms Training and Hearing Protection
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Regularly scheduled firearms training and mandated firearms qualifications are an integral part of the police training regimen. Competent firearms instructors are keenly aware of the necessary safety steps that are required to be taken on the firing range to ensure the well being of all range participants. Officers are routinely reminded of the importance of proper firearms handling, as well as the use of eye, ear, and ballistic protection. While most understand the damage that a projectile fired from a weapon can cause, it is important to understand the potential for temporary or permanent hearing injuries that can occur from firearms noise exposure.

Background

The National Institute for Occupational Safety and Health (NIOSH) has conducted extensive research on the long-term effects of occupational noise on the individual. Most occupational research studying noise exposure focuses on the level and length of exposure using a time-weighted average workday model. Unlike occupations that utilize equipment for extended periods, police firearms training results in what is referred to as "impulse" noise, which is short in interval length but high in intensity. Occupational noise is measured in decibel (dB) sound pressure levels. The Occupational Safety and Health Organization (OSHA) has determined that any occupational noise level exposure higher than 90 dB requires that the employer provide the employee with appropriate hearing protection, also referred to as a form of Personal Protective Equipment (PPE). Single-shot impulse noise from handguns and rifles typically lie in the range of 145 dB to 165 dB dependent upon the type of weapon, the caliber, and the type of ammunition being used. Hearing protection at a firing range typically consists of either "earplug" style protection devices placed inside the ear, or "earmuff" style hearing protectors that cover the exterior of the ear. NIOSH has determined that both the plug and muff style hearing protection devices each have advantages concerning the reduction of noise levels. As such, NIOSH recommends that both earplugs and earmuffs be worn simultaneously while anyone is actively participating in firearms training, or is in relative proximity to active firearms training. This is especially important when utilizing indoor shooting facilities where the decibel sound pressure levels may be exacerbated. According to PEOSH, the practice of using both earplugs and earmuffs is the accepted standard for indoor ranges.

Equipment Selection

Noise-reducing PPE devices vary in the level of decibel reduction capabilities. There are a large variety of earplugs and earmuffs available. The device's Noise Reduction Rating (NRR) should be the primary

criteria for the selection of the appropriate PPE. This rating is determined following laboratory testing by the U.S. Environmental Protection Agency (EPA). The protective equipment should be rated as having a minimum noise reduction rating of 20 dB, with an optimal rating of 30dB or higher. A higher NNR number indicates a higher level of effective noise reduction. The EPA rating label is typically located on the packaging of the device or on the device itself. The highest NNR currently available for earplugs is 33 dB, while the highest NNR for earmuffs is 31dB. Utilizing optimal pairs simultaneously results in an NNR of approximately 36 dB. Agencies should consider issuing each employee their own set of noise reduction PPE for hygienic reasons.

Recommendations

While it is understood that some organizations may face fiscal restraints prohibiting them from taking the most proactive measures, the following are recommendations for best business practices:

- Law enforcement organizations should consider pre-employment hearing screening as a part of the medical screening process. Factors to consider include pre-existing medical conditions, noise exposure during previous employment, and previous or current military duty. Hearing deficiencies may not necessarily preclude employment; however, baseline testing may provide means of measuring any future impact of noise exposure.
- Agencies should consider regular hearing testing of firearms instructors, as well as officers assigned to specialty units (i.e. Tactical / SWAT personnel) who may be exposed to more frequent firearms training.
- A voluntary testing option could be part of a larger wellness program, especially for officers who maintain their firearms proficiency outside of the scope of their employment
- Appropriate noise-reducing PPE must be provided by the agency. Officers seeking to utilize personally purchased PPE equipment should be required to seek approval of the Range Master / Firearms Instructor with the understanding that the equipment must meet or exceed the standards of the equipment offered by the agency and is aligned with agency policy. All individuals present during any firearms training should utilize both earplug and earmuff devices for the duration of the training.
- Law enforcement agencies should detail the mandatory utilization of authorized noise-reducing PPE in their applicable policies and procedures.
- The New Jersey Public Employee Safety and Health organization (PEOSH) is the regulatory and compliance agency charged with enforcing safety standards for New Jersey public employers and employees. Informational guidance and safety compliance checklists can be located online via the NJ.gov website under the New Jersey State Department of Health, Division of Workplace, Health, and Safety.

The information in this bulletin is intended to provide suggested best business practices regarding firearms training hearing protection. It is in no way intended to provide legal or medical guidance. Agencies should conduct due diligence in researching information for policy and procedure purposes.

References and Additional Resources:

<https://www.cdc.gov/niosh/nioshtic-2/20031787.html>

<http://www.hearingreview.com/2007/03/firearms-and-hearing-protection/>

<https://www.cdc.gov/niosh/docs/96-110/pdfs/96-110.pdf?id=10.26616/NIOSH PUB96110>

<https://njmel.org/mel-safety-institute/resource-center/employee-safety/shift-briefings/>

www.osha.gov/safeandsoundweek