



Firearms Training and Prevention of Hearing Loss

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Ryan Lee Scott, Deputy Sheriff with the Alachua County Sheriff's Office in Gainesville, Fla., and adjunct faculty at the Santa Fe College police academy, noticed several years ago that a number of the longtime firearms instructors had significant hearing loss and were wearing hearing aids. His concern for his colleagues hearing health led him on a journey to quantify the problem and package sound mitigation strategies officers could immediately implement.

Law enforcement officers undergo qualification training during the year in the use of firearms. In general, Scott says firearms training probably occurs about four times a year for a typical law enforcement patrol officer, monthly or more frequently for SWAT and special operations members, and a firearms instructor could be on the firearms range up to 20 times a month.

Concerned about adequate protection against potential hearing loss for himself and others, Scott contacted audiology experts at the University of Florida a few years ago to learn about the high-level impulse sounds produced by firearms and ways to minimize risk. In one subsequent study, researchers evaluated the sound pressure level effects of suppression, ammunition and barrel length on AR-15 rifles. Suppressors (silencers) were found to be helpful in mitigating noise, but Scott says it is still necessary to use hearing protection devices such as earmuffs and earplugs during training as well. No one device provides an adequate amount of protection, but by using all three categories of hearing protection devices together, a sufficient hearing protection strategy can result.

To bridge the information gap between science and law enforcement and help agencies and officers understand the issues, Scott developed an educational workshop, Firearms Training and Hearing Loss, a 90-minute presentation he has been providing free to law enforcement agencies around the state of Florida, traveling to about 30 agencies thus far, along with organizations such as the Fraternal Order of Police and

Police Benevolent Association.

The workshop covers audiology research studies and the potential for unprotected exposure to firearms sounds to damage hearing, and the importance of use and proper fit of hearing protection devices such as earplugs and earmuffs, along with firearms suppressors, to reduce sound levels during training.

“It is largely a training issue to properly fit the devices, and use the devices in the proper combinations, not a problem with the devices themselves,” Scott says. “Most of the hearing loss is occurring in a training context. It is very preventable and relatively inexpensive to address. Agencies need to be aware of and have a good hearing conservation program to get the information out to officers on how to protect their hearing.”

Scott says most agencies are using either earplugs or earmuffs, rather than both, and not providing training on fitting.

“Agencies should use both earplugs and earmuffs at the same time and properly fit them. Most agencies I have seen are using earmuffs, which is a good start, but they need to use earplugs too. You have to spend 20 to 30 minutes to train officers to fit them so they get the proper level of attenuation for the device, and agencies need to create a hearing conservation plan to address these issues.

“In a training context using all three — suppression, earmuffs and earplugs — is the best strategy. In Alachua, the SWAT team uses suppressors in the field, which reduces noise while these firearms are deployed in real-world events. In training they use suppressors in combination with their typical earmuffs/earplugs.”

Scott provides the workshop in a classroom setting, but if an agency has the time he will go out to a firearms range and use the protection devices with the type of firearms the officers are using. By integrating the agency’s equipment with the various types of hearing protection devices, he says a balanced approach can result in adequate protection, reasonable price and a practical training environment.

Scott’s efforts led to his receipt earlier this year of a Safe-in-Sound 2017 Excellence in Hearing Loss Prevention award: Innovation in Hearing Loss Prevention in the Public Safety Sector. The Safe-in-Sound awards were created by the National Institute for Occupational Safety and Health (NIOSH) in partnership with the National Hearing Conservation Association.

Future activities include Scott’s plans to write hearing protection sections for the law enforcement recruit textbook in Florida. He also hopes to expand his hearing protection training outreach program to every state.

For more information, contact Deputy Sheriff Ryan Lee Scott at ryanleescott05@yahoo.com or rscott2@acso.us. For information

on NIOSH research regarding firing ranges, click [here](#).

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