Evaluation of Hearing Protection at Firing Ranges

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Overview

- Objective
- Background
- Requirements
- Peak Noise Exposures
- Where to Begin
- Path Forward
- What does this mean to YOU?

Objective

- Raise awareness within the military community
  - Limitations of current hearing protection
  - Reinforce importance of training and fit when using hearing protection devices

Background

- GAO January 2011- Approximately $1.1 billion in disability compensation paid out for hearing loss and tinnitus in fiscal-year 2009

Hearing Protection

- Requirements:
  - DoD Instruction 6055.12
  - MIL-STD-1474C (DOD)
  - OPNAVINST 5100.23G
  - MCO 6260.1E

    - Hearing protection required for 85 dBA and 140 dB Peak level or greater.
    - Double hearing protection shall be worn when sound levels exceed 104 dB(A) or **165 dBP**

Hearing Protection Continued

- MCO 6260. 1E

- (1) Plug OR muff (84-104 dBA, 140-165dBP)
- (2) Plug AND muff (above 104 dBA, 165dBP)
- (3) Plug AND muff AND administrative control (when the use of HPDs do not reduce noise levels below 84 dBA or 140 dBP!!!!
- Do the math....165-140 = 25 HPD Attenuation?

Peak Noise Exposures

- Published Peak Noise Levels from Weapons Fire:
  - **167 dBP** from M4 5.56mm in Single and automatic modes- Jokel
  - **166.4 dBP** for the 9mm M9 Pistol- Murphy
  - **153 dBP** for 12-gauge shotgun – Harney et al.

Peak Levels-Where is it Worst?

- Modern Weapons with Flash Suppressors:
  - The majority of the energy is forward and to the sides…….

Is This a Problem?

Hearing Protection

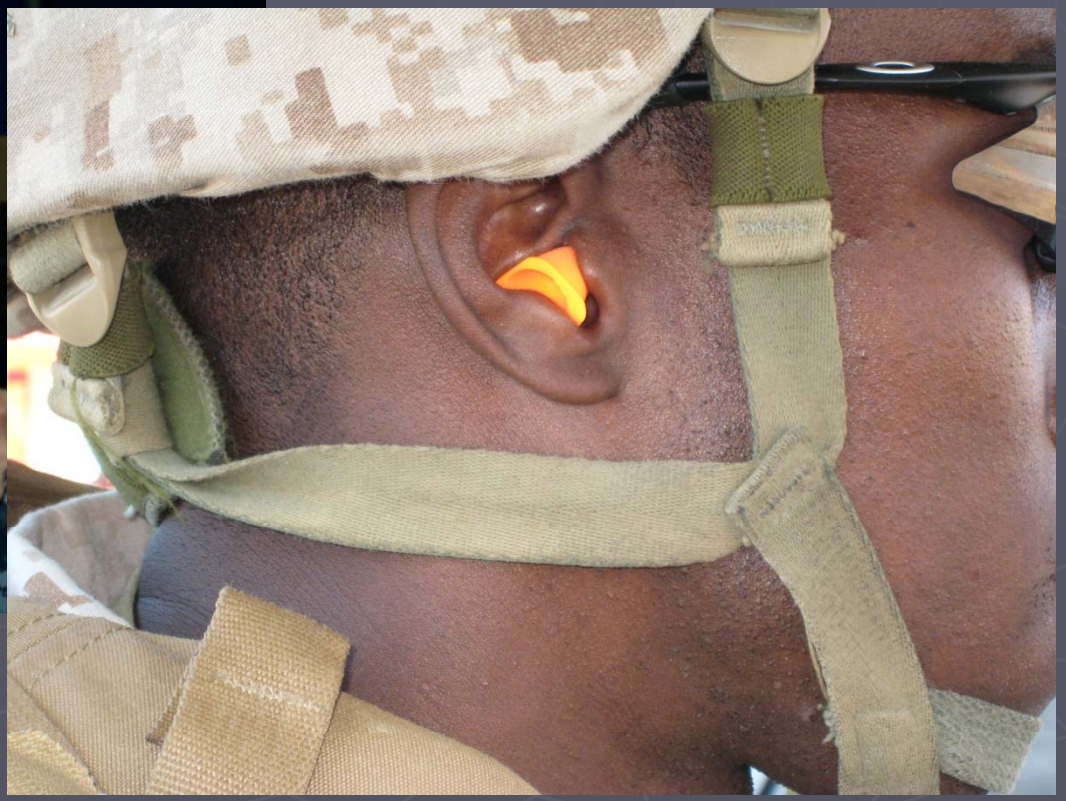
- Where to begin...
  - Training
    - Interviews with Marines and Sailors on the line suggest little to no training is provided in proper selection of hearing protection and **More Importantly** proper use of hearing protection

Hearing Protection

- Availability of different types of PPE
  - Students are told to bring PPE with them to the range
  - Most grab whatever type available at squadron and have limited if any, selection to choose from...some have purchased their own from sporting goods stores

Proper Fit?

Lots of Examples



Personal Attenuation Rating Comparison Study

- Study conducted by LT. Brenda Sharpe
- 60 personnel tested with VeriPro System

- Mean Attenuation:

  17.6 dB –Variety of Foam Plugs

  9.9 dB - Command Issue

Hearing Protection Path Forward

TRAINING

- Results after one-on-one Training:
  - 72% of personnel showed a 5dB or greater increase in personal attenuation rating (PAR)
  - 50% of personnel received attenuation of 20 dB or greater

Path Forward Continued

- Provide Training on Proper Fit of Hearing Protection.
  - Marines have committed to allowing IH personnel to provide hearing conservation training on the first day weapons qualifications at East Miramar

Path Forward Continued

- Initiate Double Hearing Protection
  - This is especially critical for Instructors
    - Provide “Active” hearing protection to allow communication with students

Best Practice- NAB Firing Range

- Students and Instructors are not allowed to shoot unless wearing double Hearing Protection

Path Forward Continued

- Provide a choice in Hearing Protection
  - Doesn't some group with a funny name (OSHA) require this?

What does this mean to YOU?

- The importance of training and fit when using hearing protection devices is relevant beyond the firing range – just look in your shops.

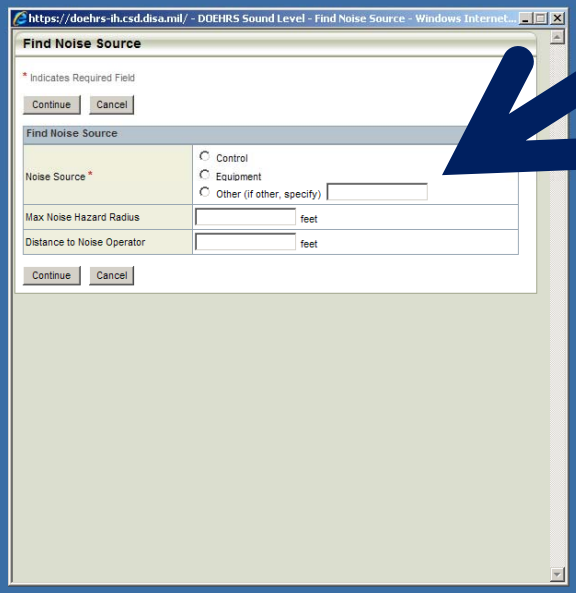
- Tools for measuring attenuation:

VeriPRO

Quiet Dose

DOEHRS-IH

Peak noise can be entered into DOEHRS



QUESTIONS?