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MARINE CORPS ORDER 6260.3

From: Commandant of the Marine Corps
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Subj: MARINE CORPS HEARING CONSERVATION PROGRAM

Ref: (a) DoD Instruction 6055.12, Hearing Conservation Program,
3 December 2010
(b) 29 CFR 1910.95
(c) MCO 5100.29B
(d) NAVMC DIR 5100.8
(e) SECNAVINST 6120.3 w/CH 1
(f) DoD Instruction 6055.1, DoD Safety and Occupational Health (SOH)
Program, 19 August 1998
(g) DOD Directive 5000.01, The Defense Acquisition System,
12 May 2003
(h) DoD Instruction 5000.02, Operation of the Defense Acquisition
System, 8 December 2008
(i) DoD Military Standard 882D, "Standard Practice for
System Safety," of 10 February 2000
(j) DoD Military Standard 1474D, "Noise Limits for Military
Materiel," of 12 February 1997
(k) DoD Instruction 6025.19, Individual Medical Readiness (IMR),
3 January 2006
(l) BUMEDINST 6110.14 w/CH 3
(m) Navy and Marine Corps Public Health Center (NMCPHC) Technical
Manual 6260.51.99-2, Navy Medical Department Hearing Conservation
Program Procedures, September 2008
(n) NMCPHC Technical Manual 6290-91-2, Rev B, "Industrial Hygiene
Field Operations Manual"
(o) MCO P1020.34G w/CH 1-5
(p) MCO 5200.24D
(q) BUMEDINST 6270.8B
(r) SECNAV M-5210.1
(s) MCO P5102.1B W/CH 2
(t) NAVMC DIR 5040.6H

Encl: (1) Marine Corps Hearing Conservation Program (HCP) Procedures

1. Situation. Noise injury and hearing loss is a continuing concern for the Marine Corps. The Hearing Conservation Program (HCP) requires commands at all levels to establish and maintain HCP requirements per references (a) through (t).

2. Mission. This Order provides policy to preserve the hearing readiness of Marines, assigned Sailors and hazardous noise-exposed civilian personnel.

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3. Execution

a. Commander's Intent and Concept of Operations

(1) Commander's Intent. Protect all Marines, assigned Sailors and hazardous noise-exposed civilian personnel from noise-induced hearing loss.

(2) Concept of Operations. Prevention of noise-induced hearing loss requires elimination or reduction of noise hazards through engineering controls. In the event engineering controls are not practical or feasible, exposure shall be administratively limited by exposure time and/or the use of a Hearing Protective Device (HPD). All Marines, assigned Sailors and hazardous noise-exposed civilian personnel shall receive annual hearing preservation training and hearing tests to ensure early detection of and protection from hearing loss.

b. Subordinate Element Missions

(1) Director, Safety Division (SD). The Director, SD provides direct support to the Assistant Commandant of the Marine Corps (ACMC) in establishing HCP policies, objectives, oversight and management of the Marine Corps HCP. Specifically, the Director SD shall:

(a) Serve as the HCP proponent. Under the direction of the ACMC and the Executive Force Preservation Board (EFPB), review HCP initiatives, significant issues or trends, and support resourcing HCP per reference (c).

(b) Establish Marine Corps HCP policy and direction in coordination with the EFPB, Deputy Commandants, Commanders, and other Department of Defense (DoD), government, and non-government agencies, as appropriate. Ensure the Marine Corps is represented on all DoD and Department of the Navy (DON) HCP policy formulation groups.

(c) Review Marine Corps Orders sponsored and coordinated by other Marine Corps agencies to ensure Marine Corps HCP requirements are addressed.

(d) Exercise oversight responsibility of Marine Corps safety programs including HCP by conducting Command Safety Assessments (CSA) every three years. Report all findings to the respective commanders and provide trends and significant HCP issues to the ACMC.

(e) Ensure the Inspector General of the Marine Corps (IGMC) Functional Area 130 (Safety (non-aviation)) and CSA checklists address the HCP.

(f) Analyze HCP findings from data sources; for example, IGMC Functional Area 130 checklist, CSA, Warrior Preservation Status Report, Defense Occupational and Environmental Health Readiness System Hearing Conservation Permanent Threshold Shift (PTS) numbers, Medical Readiness Reporting System (MRRS) hearing conservation report, and the Web Enabled Safety System (WESS) to target hazardous noise sources and prevent further hearing loss.

(g) Per reference (f), provide the Assistant Secretary of the Navy (Energy, Installations and Environment) (ASN (EI&E)) significant HCP issues or trends for the annual SOH In-Progress Review (IPR).

(h) Maintain liaison and coordination with Commander, Naval Safety Center (COMNAVSAFECEN) in support of Marine Corps HCP.

(i) Assist Marine Corps Combat Development Command (MCCDC) and Training and Education Command (TECOM) to develop appropriate HCP curricula for all Marine Corps training.

(j) Provide HCP subject matter experts to support other Marine Corps agencies in eliminating or minimizing risk to hazardous noise.

(k) Represent Marine Corps HCP interest with DoD offices; i.e., Assistant Secretary of the Navy (Research, Development & Acquisition) (ASN (RD&A)), ASN (EI&E), Bureau of Medicine and Surgery (BUMED), and HQMC Health Services (HQMC HS).

(l) Publish and disseminate information on the Marine Corps HCP. Collaborate with HQMC Public Affairs Division to stimulate interest in HCP through electronic and print media.

(m) Employ social media outlets to the maximum extent practical to transmit the HCP message.

(2) Deputy Commandant for Aviation. Advocate and provide direction for the Marine Corps HCP across the spectrum of Marine Corps flight operations and aviation related operations.

(3) Deputy Commandant for Installation and Logistics

(a) Collaborate with ASN (RD&A) to mitigate hazardous noise exposure aboard Marine Corps installations and facilities.

(b) Collaborate with the Deputy Commandant for Manpower and Reserve Affairs (DC M&RA); the Deputy Commandant for Plans, Policies and Operations (DC PP&O); the Director, SD, and HQMC (HS) to develop tools for analysis of surveillance data and to schedule and track hearing conservation training.

(c) Coordinate with the Deputy Commandant for Combat Development and Integration; the Commanding General, Marine Corps Systems Command; Director, SD, and HQMC HS for hearing protective and tactical communication devices requirements and medical guidance.

(4) Deputy Commandant for Plans, Policies, and Operations

(a) Guide Marine Corps HCP implementation and enforcement in staff coordination of operational matters; i.e., Marine Air-Ground Task Force matters, combat readiness, security matters, and amphibious and pre-positioning matters. Serve as an HCP advocate.

(b) Collaborate with DC M&RA, DC I&L and HQMC (HS) to improve the MRRS to track hearing readiness training and surveillance.

(c) Provide over-arching MRRS reporting policies, requirements and functional oversight for use throughout the Marine Corps to ensure commonality of medical readiness reporting within the Total Force.

(5) Deputy Commandant for Manpower and Reserve Affairs

(a) Facilitate Marine Corps HCP documentation of training and tracking of personnel enrolled in Marine Corps HCP.

(b) Modify the independent duty screening checklist to ensure all Marines are screened for baseline and annual audiograms, as well as diagnostic and fitness for duty audiology evaluations, prior to assignment to independent duty.

(6) Deputy Commandant for Programs and Resources. Coordinate with the other Deputy Commandants and Marine Forces (MARFOR) commanders to ensure HCP initiatives, capabilities, activities and hearing loss prevention products (personal protective equipment and communication devices) are incorporated into the Program Objective Memorandum and budget processes.

(7) Deputy Commandant Combat Development and Integration

(a) Collaborate with ASN (RD&A) to ensure efforts to mitigate exposure to hazardous noise are addressed for all Marine Corps weapon systems and equipment.

(b) Ensure the Marine Enhancement Program addresses noise control technologies along with ergonomic factors that optimize the latest in hearing protective and tactical communication device equipment.

(c) Develop and implement HCP within the Marine Corps Range Safety Program per reference (a). Ensure appropriate HPDs for the noise environment are readily available in ample supply at ranges and that visual verification of HPD fit occurs for each individual by range personnel prior to commencement of weapon fire.

(d) Evaluate trends for implementation into new technologies and requirements documents.

(8) Commanding General, Training and Education Command

(a) Incorporate the HCP into the curricula of all military and occupationally-exposed civilian personnel training and education per reference (a). Ensure subordinate activities request and receive from Military Treatment Facility (MTF) audiology subject matter experts HCP training and provide fitted HPDs to all recruits.

(b) Research, develop, publish, and disseminate curricula for HCP into professional development courses; e.g., Ground Safety for Marines and Risk Management.

(9) Commander, Marine Corps Systems Command

(a) Incorporate management processes into the acquisition material life cycle to control hazardous noise and implement appropriate noise control methodologies per references (a), (g), (h), (i) and (j).

(b) Ensure consideration of noise control technologies and permissible exposure level requirements from DC CD&I features in the design or procurement programs such as "Buy Quiet" of all items over which the command exercises acquisition authority.

(c) Serve as the Marine Corps point of contact with external agencies for all noise control in acquisition.

(d) Collaborate with ASN (RD&A) to ensure efforts to mitigate exposure to hazardous noise are addressed for Marine Corps weapon systems and equipment.

(e) Coordinate with BUMED for appropriate noise health hazard assessments for weapons systems/acquisition per reference (q).

(10) Inspector General of the Marine Corps. Ensure HCP is included as a CMC special interest item during assistance visits/inspections and results are reviewed and briefed to CMC or ACMC per reference (t).

(11) Medical Officer of the Marine Corps

(a) Coordinate with BUMED to ensure Marine Corps HCP medical services are provided to all Marines, assigned Sailors and occupationally exposed civilian personnel working in noise hazardous areas.

(b) Provide HCP support and coordination with CMC (SD).

(c) Ensure IGMCM's Functional Area 500 (Health Services Support) checklist addresses the HCP.

(12) Marine Corps Forces Command and Marine Corps Forces Pacific. Ensure operational units comply with this Order and use MRRS to track compliance with audiogram testing and reporting requirements.

(13) Commander, Marine Corps Installation Command (MCICOM)

(a) Institute this HCP on all Marine Corps installations, support facilities and production plants as a core safety service per enclosure (1).

(b) Provide resourcing and management requirements for MCICOM installation and facilities sponsored HCPs and noise abatement initiatives.

(c) Conduct annual installation HCP assessments using enclosure (1), Appendix D to ensure HCP's full implementation and compliance. Maintain completed assessments for three years for review by higher headquarters.

(14) Marine Corps Installation Commanders (Bases and Stations)

(a) Implement this HCP as a core safety service per enclosure (1).

(b) Conduct annual HCP self-assessments using enclosure (1), Appendix D to ensure HCP's full implementation. Maintain completed assessments for three years for review by higher headquarters.

(15) Commanders, Commanding Officers (COs), and Officers-In-Charge (OICs)

(a) Implement the Marine Corps HCP per enclosure (1).

(b) Ensure the resourcing and management of the command's HCP and noise abatement programs.

(c) Annually use the Unit's HCP self-assessment guide; i.e., enclosure (1), Appendix D. Maintain completed assessments for three years for review by higher headquarters.

(d) Identify and enroll all Marines and assigned Sailors into the HCP, along with all civilians assigned to hazardous noise tasks, processes, operations or similar exposure groups. Use MRRS or an equivalent electronic system to track personnel enrolled in the HCP. Implement noise abatement and engineering controls. Ensure labeling of hazardous noise areas and equipment, provide and enforce use of HPDs, ensure identified employees receive documented annual training and audiometric testing, and comply with fitness for duty criteria.

(16) Marines, Sailors and hazardous noise-exposed civilian personnel of the Marine Corps shall:

(a) Comply with the requirements of the Marine Corps HCP herein.

(b) In accordance with reference (f), report unhealthful hazardous noise operations or working conditions using the Unsafe or Unhealthful Working Condition form (NAVMC 11401) per reference (c).

(c) Report to supervisor or safety officer noise and hearing-related factors that contribute to mishap incidents (i.e., hearing loss, miscommunication, and misunderstanding of verbal communication).

c. Coordinating Instructions

(1) Host-Tenant Relationships. Marine Corps installation commanders are responsible for the overall health and safety environment aboard the installation, particularly as specified below.

(a) An Inter-Service Support Agreement (ISSA), Memorandum of Understanding (MOU) or Memorandum of Agreement (MOA) shall specify HCP support in host-tenant relationships. HCP support will not be reimbursable.

(b) Marine Corps and other Service tenant commands aboard Marine Corps installations shall adhere to the host installation's HCP standards. Where tenant commands have HCP standards that meet or exceed the host command's requirements, tenant commands shall adhere to the more stringent standards. Marine Corps tenants on other DoD installations shall adhere to the host's HCP standards if more stringent.

(c) Installation safety offices shall provide the core HCP services described in enclosure (1) to all personnel on the installation unless precluded by an ISSA, MOU, or MOA.

(2) Commander, Naval Safety Center (COMNAVSAFECEN). By MOA with the Director, SD, COMNAVSAFECEN supports the Marine Corps HCP.

(3) Military Treatment Facility (MTF) Support

(a) BUMED supports the Marine Corps in all aspects of Occupational Health (OH), including IH, Occupational and Environmental Medicine (OEM), occupational audiology, and nursing.

(b) All Marine Corps commands will use the supporting MTF for OH services.

(c) Marine Corps commanders shall ensure Marines, assigned Sailors and DoD civilian personnel receive applicable OH services. Where such support is not available, for example, Marine Corps Forces Reserves and Marine Corps Recruiting Command), commanders shall ensure the OH services acquired meet the requirements set forth by reference (m).

(d) MTF OH personnel will conduct worksite visits for noise hazard commands to provide consultation, support, training and expertise on hearing loss prevention and HCP improvement initiatives.

4. Administration and Logistics

a. Commanders shall ensure adequate staff and budgets are provided to implement a comprehensive HCP that meets the requirements of this Order.

b. Commanders shall apply risk management strategies to HCP along with appropriate planning, orders, training and indoctrination programs, technical and tactical publications, checklists, and standard operating procedures.

c. Records created as a result of this Order shall be managed according to National Archives and Records Administration approved dispositions per reference (r) to ensure proper maintenance, use, accessibility and preservation, regardless of format or medium.

5. Command and Signal

a. Command. This Order is applicable to the Marine Corps Total Force.

b. Signal. This Order is effective the date signed.



JAMES B. LASTER
Director, Marine Corps Staff

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Marine Corps Hearing Conservation Program (HCP) Procedures

1. General

a. Noise injury is a continuing concern within the Marine Corps. The goals of the HCP are threefold: reduce hazardous noise sources through acquisition and engineering controls; prevent noise induced hearing loss; and ensure auditory fitness-for-duty for service members and civilian workforce. Marines, assigned Sailors and hazardous noise-exposed civilian personnel shall be enrolled in the HCP. This enclosure details HCP policy guidance for Marine Corps personnel. The intent of the HCP is to maintain hearing readiness of Marines and Sailors so that they understand and distinguish verbal commands such as "get back" from "attack" as well as prevent noise induced hearing loss. A comprehensive HCP will prevent or reduce severity of hearing loss.

b. Repeated and prolonged exposure to hazardous noise from aircraft, weapons, vehicles, industrial and recreational activities will cause noise-induced hearing loss. Noise-induced hearing loss may be temporary or permanent, depending on the duration, intensity, and susceptibility of the individual. Prevention of hearing loss is possible by reducing the sound pressure produced by the source, isolating the source, limiting the exposure time, or stopping the sound from reaching the ear.

c. Advances in the technology of acoustic measuring allow peak noise above 140 decibel peak (dBp) to be measured. The U.S. Army reports M-4 Carbine (5.56 mm) produced peak sound pressure levels (SPLs) as high as 165. Peak noise levels of 160 dBp and above are known to cause immediate physical trauma. This knowledge leads to the requirement for double hearing protection use while on firing ranges; a philosophy of preventing hearing loss during training so personnel do not go into combat hearing impaired.

d. Navy Medicine supports the Marine Corps by performing periodic IH surveys, occupational audiometry and providing necessary data to commanders for updating Individual Medical Readiness (IMR) data into approved electronic systems, such as the MRRS and the electronic health record.

2. Marine Corps HCP

a. All active duty Marines, Sailors, and only civilian personnel exposed to hazardous noise supporting Marine Corps operations shall be enrolled in the HCP. The HCP shall include identification and evaluation of noise sources, noise abatement, engineering controls, reference (baseline) audiograms, hearing loss prevention training, monitoring audiograms, termination audiograms, hearing readiness status, and diagnostic audiology evaluations.

b. Current IH procedures identify hazardous noise tasks, processes, operations or similar exposure groups where exposures are unacceptable. Commanders and supervisors are responsible to identify and enroll all Marines, assigned Sailors, and those civilians who are assigned hazardous noise tasks, processes, operations or similar exposure groups into the HCP.

c. All Marine Corps commands with hazardous noise sources and operations shall conduct an annual self-assessment of their HCP using the HCP safety self-assessment checklist (enclosure (1) page 1-10, paragraph 12). HCP self-assessment data shall be forwarded by naval messages to CMC (SD) via the chain of command no later than the first business day of the fourth quarter

of each fiscal year. Major commands shall, no later than the first business day of the fourth quarter of each fiscal year, summarize percentage of subordinate commands' inventory and HCP self-assessment dates via naval message to CMC (SD). The Director, SD, will brief ACMC on hearing readiness of the Marine Corps.

d. Sources of HCP data include but are not limited to safety self-assessment surveys, IH surveys, hazard abatement logs, MRRS, Marine Corps injury and illness logs, CSAs, IGMC inspections, personal casualty reports, and WESS.

e. Marines receive a reference (baseline) audiogram as part of their initial physical examination conducted at MTFs while at the Recruit Depot or Officer Candidate School. Marine Corps civilians shall receive a reference audiogram prior to assignment to a noise hazardous operation.

f. Hearing tests (audiometry) are performed to detect changes in hearing readiness before hearing loss becomes a mission impairment or impairs quality of life. Marines and assigned Sailors are annually monitored for hearing changes. Civilian personnel enrolled in the HCP should receive an annual monitoring audiogram for as long as they are occupationally exposed to hazardous noise.

g. The commander or unit safety officer/manager shall take action to prevent further hearing loss when notified of early changes in personnel's hearing. These actions shall include evaluation of the work-site for additional engineering controls by a qualified engineer, IH, OH professional or safety specialist; determining adequacy of Hearing Protection Devices (HPDs); and ensuring that HPDs are properly worn.

h. Removal or re-entry. Civilian personnel may be removed from the HCP when noise measurements and dosimetry by trained and qualified industrial hygienists or audiologists have determine steady state SPLs are below a Time Weighted Average (TWA) of 85 dBA weighting or a single exposure to impulse or impact noise of 140 dBP is not exceeded per reference (a). However, upon re-assignment to a noise hazardous environment, an individual shall be re-enrolled into the HCP.

i. Supervisors shall schedule hearing tests for their personnel at the nearest MTF occupational audiology department. Use Supervisor's Medical Surveillance and Certification Exam Referral Form, SECNAV 5100/1 (Rev 8/2013) to schedule hearing test. Personnel shall keep scheduled appointments for hearing tests, especially all follow-up appointments. Personnel reporting for monitoring (annual) audiograms shall bring their HPDs to verify fit and effectiveness.

(1) Ensure that personnel report for all required hearing and medical surveillance examinations.

(2) Ensure Marines receive timely follow-up to address hearing loss as detected and reported by MTF.

(3) Request monthly audiometry reports of no-shows and names of tested personnel from MTF Occupational Audiology Department.

(4) Track engineering control projects for hazardous noise on hazard abatement log until abated.

(5) Ensure the date of reference audiogram and date of periodic audiogram are documented in MRRS.

j. HCP elements are described below.

(a) Noise Measurement: Noise measurement and exposure analysis to identify noise hazardous areas or sources and the personnel exposed.;

(b) Noise Inventory: IH noise survey or DD Form 2214 identifies hazardous noise sources or processes that requires at risk Marines, Sailors and hazardous noise-exposed civilian personnel for appropriate HCP training, medical surveillance, issue and fitting of correct HPD.

(c) Engineering Control: Engineering control of noise levels to reduce the potential hazard to the maximum extent feasible.

(d) Training: Training by commands or units regarding potentially noise-hazardous areas and sources, use and care of HPDs, the effects of noise on hearing, and the command's HCP.

(e) Hearing Testing: Periodic hearing testing of all personnel at risk to monitor the effectiveness of the program, and enable timely audiologic and medical evaluation of those personnel who demonstrate significant hearing loss or threshold shift.

(f) Hearing Protective Devices (HPDs): Recommendations for use of HPDs as an interim measure pending effective engineering controls.

3. Measurements and Exposure Assessments

a. To effectively control sound levels, it is necessary to accurately assess SPLs per reference (n). Assessment of noise is also necessary to identify unacceptable levels and personnel at risk. Individuals that meet the criteria for exposure intensity and frequency are considered at risk and must be included in the HCP.

b. Results of personal noise dosimetry monitoring that are at or above 85 dBA, as an 8-hour time-weighted average, must be forwarded to the command or unit. The commander, commanding officer or officer-in-charge is responsible for notifying the exposed personnel.

c. It is recommended that activities and units, in consultation with supporting MTF occupational audiologist, consider new technology to fit test hearing protectors. Like respiratory fit testing, this indicates that maximum protection can only be obtained if the ideal fit is achieved; various commercial off-the-shelf products assist in achieving optimal fit through hearing protector selection and employee training. Such products generate a personal attenuation rating (PAR) that indicates a worker's noise reduction levels for a given fitting and hearing protector.

d. Assign a risk assessment code (RAC) to all potentially hazardous noise areas and operations in accordance with references (a) and (h).

e. Baseline noise surveys do not require periodic updates. However, commands or units shall request an IH noise survey any time a facility, engineering, weapons or systems change occurs, as well as when new equipment, machinery, vehicles, or tools are purchased for use.

f. For acquisition and development of new systems, identify prospective noise levels from historical data from existing systems, modeling of anticipated noise levels, measurement of noise levels in new or modified systems, and equipment during the test and evaluation stage.

4. Marine Corps Occupational Exposure Limit (MCOEL)

a. For an 8-hour TWA, the MCOEL is 85 dBA.

b. For impact or impulse noise, the MCOEL is 140 dBP SPL.

c. Work environments where ultrasound is produced and hearing protection is not already used shall conform to the ultrasound exposure limits set forth in reference (a).

5. Labeling of Hazardous Noise Areas and Equipment

a. All potentially hazardous noise areas must be clearly identified by signs located at their entrances or boundaries. Each tool or piece of equipment producing noise levels greater than 85 dBA, including vehicles (tactical vehicles require signage be placed inside), shall be conspicuously marked to alert personnel of the potential hazard.

b. Labels shall include the type of HPD to wear; i.e., single or double, or administrative maximum stay times when hazardous noise exceeds HPD noise reduction ratings. The exception shall be when an entire space is designated as a hazardous noise area and the equipment is stationary.

(1) Designated hazardous noise areas and equipment that produce hazardous sound levels shall be appropriately labeled. NAVMED 6260/2, hazardous noise warning decal (8" x 10") NSN 0105-LF-004-7200 and the NAVMED 6260/2A, hazardous noise labels (2" x 2") NSN 0105-LF-004-7800, or their equivalents are approved for marking hazardous noise areas and equipment.

(2) NAVMED 6260/2A or equivalent shall be used to label smaller individual pieces of equipment or tools that produce hazardous noise.

c. Exteriors of military combatant equipment are excluded from this requirement. Interiors of military combatant equipment shall be labeled with appropriate hazardous noise warning signs or labels. Professional judgment and discretion shall be exercised when labeling tools and equipment.

d. The designation of hazardous noise areas and equipment will be based on the following criteria.

(1) Any work area or equipment where the SPL is 85 dBA or above (continuous or intermittent) shall be considered noise hazardous.

(2) Any work area or equipment where a single impulse or impact SPL is 140 dBP or greater shall be considered noise hazardous.

(3) Areas or equipment where the SPLs are 85 dBA or greater, but less than 96 dBA, shall be labeled and shall require the use of single hearing protection; i.e., approved ear plugs or circumaural muffs that attenuates worker noise exposure below an 8-hour TWA of 85 dBA.

(4) Areas or equipment where the SPLs are 96 dBA (i.e., the effective field derated upper limit of most plugs or muffs) or greater shall be labeled and shall require the use of double hearing protection (approved ear plugs and circumaural muffs) that attenuates worker noise exposure below an 8-hour TWA of 85 dBA.

(5) Areas or equipment where the SPLs of impulse/impact noises are 140 dBP or greater, but less than 165 dBP, shall be labeled and shall require the use of single hearing protection that attenuates worker noise exposure below 140 dBP.

(6) Areas or equipment where the SPLs of impulse/impact noises are 165 dBP or greater shall be labeled and shall require the use of double hearing protection that attenuates worker noise exposure below 140 dBP.

6. Engineering Controls and Noise Abatement

a. Engineering controls shall be the primary means of eliminating or reducing personnel exposure to hazardous SPLs. The engineering objective is to reduce SPLs to below TWA 85 dBA weighting or 140 dBP. Noise generation, personnel exposures, and signal control shall be considered in the context of life-cycle risk management and combat capability.

b. Noise abatement programs shall include implementation of noise assessment and engineering control measures through the systems engineering and systems safety.

(1) Legacy systems have measured noise exposure concerns as indicated by personnel exposures at or above 85 dBA or 140 dBP.

(2) New systems are considered likely to create noise exposures at or greater than 85 dBA or 140 dBP.

(3) Communication is anticipated to be potentially impaired by background noise caused by new equipment.

(4) Commanders, facility engineers, supervisors, safety officers, and safety managers, in consultation with IH professionals from the supporting MTF, shall evaluate and recommend the appropriate engineering controls at the work-site.

c. Risk Assessment Codes (RAC 2 or higher) shall be assigned to recommended engineering controls identified in noise surveys and tracked until fully corrected in hazard abatement logs.

d. When procuring new tools and equipment, purchase "buy quiet" ones when possible; i.e., those with lowest sound emission levels which are technologically and economically feasible and compatible with performance and environmental requirements.

e. The secondary means of protecting people shall be administrative; i.e., limiting times of exposure or enforcing safe stay times. Administrative controls are effective only under strict supervisory control and in consultation with safety, IH or occupational audiology.

f. Use of personal protective equipment (PPE), for example, ear plugs, muffs, etc., shall be temporary or a last resort solution and only after

noise studies have determined engineering or administrative controls are not feasible. Administrative control is mandatory when HPD will not reduce exposure at or below the 85 dBA TWA.

7. Training

a. COs and OICs shall ensure supervisors, managers and personnel exposed to hazardous noise receive training on their role in preserving the mission's hearing readiness. COs, OICs, supervisors and managers are encouraged to collaborate with MTF occupational audiology subject matter experts to provide quality HCP education and training. HCP training is mandatory for all Marines, assigned Sailors and hazardous noise-exposed civilian personnel.

b. Marines, assigned Sailors and hazardous noise-exposed civilians shall attend initial HCP training session prior to duties in hazardous noise and annually thereafter. Marines and assigned Sailors typically obtain initial HCP training at their first duty station.

c. All Marines, assigned Sailors and hazardous noise-exposed civilian personnel shall have an annual hazardous noise awareness refresher training documented in their official training records or logs by S-3/G-3. Marines and assigned Sailors shall use "Marine Online" or equivalent electronic training records; civilian personnel will document training in their civilian training records.

d. HCP training shall cover responsibilities to support effective noise control to include the following:

- (1) importance of hearing readiness for mission success;
- (2) understanding the physical and psychological effects hazardous noise plays in situational awareness, combat effectiveness and lifelong impact on ones quality of life;
- (3) knowledge that hearing tests are performed for early detection of hearing loss and are not preventive, but a tool to alert command or unit of weaknesses in the HCP;
- (4) disciplinary actions are authorized if one is observed not using HPD in hazardous noise environments;
- (5) supervisors' and employees' responsibilities to prevent hearing loss and the importance of leading by example;
- (6) taking personal responsibility to protect one's own hearing from hazardous noise in all live fire operational training and in garrison; and
- (7) awareness training shall include discussion of hazardous noise occurrence at home, recreationally and personal choices made while using personal firearms, operating power tools and mowers, as well as volume of music listened to with and without earbuds or headphones.

e. Effective training requires personal attention to fitting of HPDs and user feedback related to the comfort and effectiveness of varied products. Like respiratory fit testing, this indicates that maximum protection can only be obtained if the ideal fit is achieved, various commercial off-the-shelf products assist in achieving optimal fit through hearing protector selection and employee training. Such products generate a personal attenuation rating

(PAR) that indicates a worker's noise reduction levels for a given fitting and hearing protector. Education must also reach management and engineering personnel and address the responsibility and technical feasibility of managing operational risk related to hearing loss and noise control.

f. Marine Corps acquisition and safety professionals will work with the Defense Acquisition University to ensure that the acquisition training curricula identify relevant risk factors associated with noise generation and provide access to noise control technology and information.

8. Hearing tests and medical evaluation

a. Commanders shall ensure completion dates for reference (baseline) audiogram (DD 2215) and annual/periodic audiogram (DD 2216) are entered and tracked in MRRS for all personnel enrolled in the HCP. This information shall also be maintained in the safety turnover binder per reference (c).

b. Commanders are required to report via the chain of command quarterly completion rates for baseline, annual or periodic (as medically prescribed), and termination audiograms to HQMC HS. Those commands below 90 percent completion rates will develop a Plan of Action and Milestones to rectify issues that prevent a 90 percent or better completion rate.

c. The cognizant MTF shall conduct periodic hearing tests and provide results that allow commands and units to monitor the effectiveness of the HCP.

d. Personnel with pre-existing hearing loss exceeding enlistment/employment standards and/or with a demonstrated increased susceptibility to noise-induced hearing loss may be excluded from occupations with noise exposure above the MCOEL. This determination shall be made by a trained and certified otolaryngologists, occupational audiologists or occupational medicine physicians.

e. Individuals in the HCP exceeding criteria per reference (e) and reference (m) may be referred for an "Audiometric Fitness for Duty" evaluation.

f. The individual, his or her supervisor, and command shall be notified by the MTF when either a Significant Threshold Shifts (STS) or an OSHA recordable STS occurs.

(1) Personnel demonstrating an unresolved STS after appropriate auditory rest shall be immediately notified along with his or her command.

(2) STSs are not recorded if it is not permanent, is not consistent with an occupational origin, or does not exceed an average of 25 dB or more above audiometric zero.

g. Terminating Hearing Test

(1) Personnel may be removed from the HCP when noise measurements and dosimetry determine steady state SPLs are below a TWA of 85 dBA or a single exposure to impulse or impact noise of 140 dBP is not exceeded.

(2) Assigned Marines and Sailors shall receive a termination hearing test before leaving military service. Marine Corps civilian personnel

enrolled in the HCP shall receive a termination hearing test within 90 days prior to separation from the service or within 90 days prior to transfer to a non-noise hazardous position.

9. HPD and Combat Arms Earplugs (CAE)

a. HPDs are considered a temporary protective measure. However, Marines, assigned Sailors and civilians exposed to hazardous noise shall wear appropriate HPDs at all times during noise hazardous operations and while in noise hazardous areas. HPDs shall constitute a permanent measure only if engineering controls are not technologically, economically, or operationally feasible. Additional guidance is available from an occupational audiologist, safety specialist, or industrial hygienist.

b. All commands and units with hazardous noise areas and activities shall maintain an adequate, readily accessible supply of hearing protection with appropriate Noise Reduction Rating (NRRs) in work areas and passageways leading to high noise areas and at military firing ranges. HPDs shall always be available at no cost to personnel entering or assigned to work in designated hazardous noise areas. Supplies shall include all sizes of approved preformed earplugs and noise muffs, as well as an adequate supply of disposable earplugs. HPDs shall be replaced as necessary whenever they become dirty or damaged.

c. HPD attenuation shall be evaluated by a trained and qualified audiologist or industrial hygienist for the specific noise environments in which the protector will be used per Appendix A.

d. Refer to paragraph 5d above for designation of hazardous noise areas and equipment criteria as well as Appendix B for noise exposure limits.

e. Double hearing protection (combination of insert and over-the-outer ear (circumaural) types of HPDs) shall be worn when sound levels exceed 104 dBA, or 165 dBP, unless an occupational audiologists, IH, or occupational medicine physician has determined that single protection is adequate for the anticipated duration of exposure.

f. Use of custom earplugs is authorized. However, only professionally trained and certified audiologists, otolaryngologists, and other healthcare providers trained in ear impression techniques may take impressions of the ear necessary to make custom earplugs. As with all personal protective equipment, cost is the responsibility of the individual commands.

g. Preformed sized earplugs shall be fitted and issued only under the supervision of personnel specifically trained by a qualified audiologist.

h. All recruits and officer candidates shall receive HCP training as well as baseline/reference hearing test. This should include initial fitting of preformed sized earplugs with documentation of members' size in his/her health record.

i. Leadership shall ensure individuals enrolled in the HCP receive proper initial fitting and enforce the correct use of HPDs. Appendix A contains HPD selection criteria.

j. Hearing aids may not be used in conjunction with or in place of HPDs except as approved by an otolaryngologist or audiologist on a case-by-case

basis. Appropriate use of hearing aids in noise hazardous areas shall be described in writing by attending otolaryngologist or audiologist to command authorized safety representative.

k. The wearing of personal portable music headphones are prohibited where hazardous noise or traffic hazards exists; e.g., in industrial areas, in work areas, operating vehicles, riding bicycles, or jogging on roadways with traffic.

l. All Marines, assigned Sailors and civilian personnel training or working on firing ranges, flight lines, participating in live-fire training exercises, as well as working in or entering designated noise hazardous areas shall receive training, fitting (under medical supervision), and issue of HPDs.

m. Regardless of exposure time, HPDs shall be used when training or working within noise hazardous zones while hazardous noise sources are operational or when using noise hazardous weapons and tools. Personnel checking out noise hazardous tools and equipment shall demonstrate HPD possession at the time of checkout.

n. All personnel exposed to gunfire, artillery or missile firing, under any circumstances, shall wear approved HPDs.

o. CAEs are required tactical combat gear. Marines, assigned Sailors and civilian Marines operationally training for combat shall train with and wear CAEs along with other tactical armor.

p. All personnel must deploy with a pair of fitted hearing protectors.

q. The CAE is an authorized part of Marines tactical combat utility uniform per reference (o). When not in use CAEs should be maintained inside their protective case in utility uniform pockets or attached to their outer tactical vest or flak jacket.

r. National Stock Numbers (NSN) for 370-1031 Combat Arms Earplug W/in-Ear Selector Switch:

- (1) Small, NSN 6515-01-576-8837;
- (2) Medium, NSN 6515-01-576-8861; and
- (3) Large, NSN 6515-01-576-8869.

10. HCP Metrics

a. Per reference (p), hearing readiness is an assessable unit. COs and OICs shall ensure a hearing readiness status at these benchmarks: 100 percent of Marines, Sailors and at-risk civilian personnel have baseline audiograms, 95 percent of monitoring audiograms performed within one month of birth month, 100 percent of active duty personnel leaving the service and civilian personnel no longer exposed to hazardous noise receive termination audiograms. These benchmarks shall be evaluated and reported in accordance with paragraph 11 below.

b. The following metrics provide reasonable assurance that Marine Corps commands are meeting the objectives of the HCP which will enhance the

effectiveness and efficiency of Marine Corps hearing readiness. This will ensure that the Marine Corps is complying with applicable laws and regulations.

(1) Major commands shall ensure subordinate commands are up-to-date with hazardous noise inventories, baselines, monitoring and training as reported from subordinate commands via naval message. Subordinate commands shall annually report, via the chain of command, their hearing readiness status.

(2) A command's hearing readiness shall be maintained to the following standards: 100 percent at-risk personnel have baseline audiograms, 95 percent periodic audiograms and training completed in any month completion rate measured, and 100 percent of at-risk civilian personnel removed from noise hazardous occupations receive termination audiograms.

(3) Commands or units with less than 90 percent of Marines current per their MRRS hearing conservation report shall provide their chain of command a six-month plan of action and milestones to attain 100 percent.

11. Program Performance Evaluation

a. Commands with noise hazards and/or personnel enrolled in a HCP shall evaluate its HCP effectiveness annually through examination of program performance metrics described above and implement steps to mitigate program shortfalls.

b. All Marine Corps commands with hazardous noise sources and operations shall conduct and document an annual self-assessment of the HCP using the items of a HCP safety self-assessment described in paragraph f, below. All U.S. Marine Corps Force commanders; Commanding General, Marine Corps Combat Development Command; Commander, Marine Corps Installations Command; Commanding General, Marine Corps Logistics Command; Commanding General, Marine Corps Recruiting Command, and Commander, Marine Corps Systems Command shall annually summarize and report percentage of subordinate commands' inventory and HCP self-assessment dates no later than the last business day of the fourth quarter of each fiscal year. Submit reports via naval message to CMC SD, who will brief the ACMC on hearing readiness of the Marine Corps.

c. Per reference (a) and this enclosure, subordinate commands shall report the following metrics to their chain of command: total number of individuals enrolled in the HCP as well as the number of personnel receiving annual audiograms to the cognizant MARFORs (both raw numbers and rates) no later than first business day of the fourth quarter of each fiscal year.

d. For acquisition and development of new systems, identify prospective noise levels from historical data from existing systems, the modeling of anticipated noise levels, measurement of noise levels in new or modified systems, and equipment during the test and evaluation stage per reference (j). Acquisition program evaluations should consider the effectiveness of programs in managing risk to hazardous noise.

12. HCP Self-assessment Checklist. All commanders shall annually perform a HCP self-assessment using Appendix D. Maintain the assessments for three years for review by higher headquarters.

13. Reporting Systems. MRRS or equivalent systems such as Enterprise Safety Applications Management System (ESAMS), WESS or other appropriate tracking tools must be used to document hearing readiness.

a. MRRS is the authoritative source for active and reserve components. Civilians at this time require a local tracking system for unit HCP. MRRS provides commanders aggregated HCP data in the hearing conservation report and full visibility into the individual HCP status for his or her command or unit per reference (a) and this Order.

b. Marine Corps designated medical liaisons or IMR Officer shall obtain MRRS web access from their Battalion Medical Readiness Office or from the HQMC PP&O MRRS lead project administrator at (703) 571-1048 DSN 671-1048.

c. Units shall validate their hearing status monthly from the MRRS hearing conservation report.

d. Permanent Threshold Shifts (PTS) reported by MTF are recorded in WESS. Hearing loss occurring over time from an occupational exposure is considered an occupational injury. A hearing loss that occurs from an instantaneous event, for example, an acoustic trauma from an explosion (over pressure), shall be recorded as an "injury" in WESS.

e. Commands shall maintain appropriate WESS generated logs of military and civilian personnel who experience a STS or PTS. Marine Corps military personnel identified with a STS or PTS shall be recorded on a separate log equivalent to the WESS or OSHA 300 Log. Marine Corps hazardous noise exposed civilian personnel identified with an OSHA recordable hearing loss shall be recorded in WESS, an equivalent OSHA 300 Log.

f. A copy of the MTF hearing medical surveillance results. MTF audiology departments have 21 days to notify commands/units of their personnel identified with a PTS.

14. Desktop Turnover Binder

a. Desktop turnover binders are critical to an effective and efficient HCP. Safety desktop turnover binders shall be available in every work center and typically maintained by the supervisor or safety representative. Safety specialists shall direct and oversee assembly of the safety desktop turnover binders.

b. At a minimum, safety desktop turnover binders shall contain the following HCP items.

(1) A copy of the DD Form 2214, Noise Survey or its equivalent from the IH survey. DD Form 2214, Noise Survey is a standard inventory tool for noise hazards. The form or survey is available from the MTF IH baseline and identifies hazardous noise operations, processes, equipment and areas.

(2) A current copy of MRRS hearing conservation report. Hazardous noise-exposed civilian personnel require commands to manually track those exposed to hazardous noise sources, their training, and that their HPDs were fitted for the appropriate SPL.

(3) HCP training records, e.g. training attendance roster.

15. Glossary

a. Administrative Control. This method limits daily noise exposure or access to hazardous noise areas by control of the work schedule.

b. Audiogram. A chart, graph, or table showing an individual's hearing threshold levels as a function of frequency.

c. Baseline (Reference) Audiogram. An original audiogram performed prior to occupational exposure to hazardous noise. Future audiograms are compared with the baseline to identify hearing changes. Note: this reference hearing test will not be obtained unless the individual has been free from exposure to noise above 80 dBA for at least 14 hours, as well as free of diseases of the ear or hearing. HPDs shall not be worn to meet this 14 hour noise free state. Non-occupational noise sources shall also be avoided.

d. Decibel (dB). A logarithmic unit of measure used to express SPLs.

e. dBA. The standard abbreviation for sound levels measured with a sound level meter set on the A-weighting "filter." The A- "filter" mimics the ear's sensitivity to higher frequency noise. The A-weighting, therefore, measures more of the noise frequencies that may cause hearing loss.

f. dBp. The decibel Peak is standard abbreviation for the peak SPL in decibels. It is the unit of measure used when measuring weapons fire.

g. Engineering Control. Engineering control is any procedure or method that reduces the sound level either at the noise source or in the hearing zone of the exposed personnel. HPDs (ear muffs, plugs, noise canceling technologies) or administrative controls are not engineering controls. HPDs are PPE.

h. Hazardous Noise. Any steady-state noise having an 8-hour TWA noise level greater than or equal to 85 dBA, or exposure to impulse and/or impact noise levels of 140 dBp or greater, regardless of duration.

i. Hazardous Noise Area. Any area where workers are likely to be exposed to noise levels equal to or greater than an 8-hour TWA of 85 dBA, or where impulse noise levels are greater than or equal to 140dBp.

j. Impulse, Impact or Peak Noise. A sound of short duration, usually less than 1 second, with an abrupt onset and rapid decay. Short bursts of automatic weapons fire are considered impulse noise.

k. Monitoring Audiograms. Periodic audiograms usually performed annually after the baseline or reference audiogram to detect early signs of hearing loss.

l. Permissible Exposure Limit (PEL). Maximum daily human exposure to a chemical substance or a physical agent such as noise allowed in a workroom's air over an 8-hour shift. Established by OSHA, it is based either on a time weighted average or the maximum exposure limit prescribed by regulation.

m. Permanent Threshold Shift (PTS)(Recordable). A hearing test (audiogram) with a change in a hearing threshold relative to the baseline audiogram of an average of 10 dB or more in either ear at 2000, 3000 and 4000

hertz and total hearing level is 25 decibels (dB) or more above audiometric zero (also averaged at 2000, 3000 and 4000 hertz in the same ear(s)).

n. Revised baseline (reference) audiogram. A revised or re-established audiogram after determination that a change in hearing is permanent. Note: this revised baseline (reference) hearing test will not be obtained unless the individual has been free from exposure to noise above 80 dBA for at least 14 hours, as well as free of diseases of the ear or hearing. HPDs shall not be worn to meet this 14-hour noise-free state. Non-occupational noise sources shall also be avoided.

o. Time-Weighted Average (TWA). An average exposure over a given period of a person's working time, as determined by continuous or intermittent measurements (sampling) during the period.

Appendix A

HEARING PROTECTIVE DEVICES (HPDs)

1. Available hearing protectors include preformed earplugs, noise muffs, ear canal caps, noise attenuating helmets, as well as musician or custom earplugs. Hearing protectors can also be worn in combination (e.g., earplugs with noise muffs or noise attenuating helmet).

2. Preformed earplugs, once fitted, need to be rechecked annually for appropriate size and any signs of deterioration. In some cases, individuals may require earplugs of a different size or type for each ear.

3. Helmets and noise muffs need to be rechecked at least twice a year for appropriate use and to replace any worn/deteriorated seals.

4. A combination of insert and over the outer ear (circumaural) types of HPD (double protection) shall be worn when sound levels exceed 104 dBA, or 165 dBP, unless an occupational audiologists, IH, or occupational medicine physician has determined that single protection is adequate for the anticipated duration of exposure.

5. The actual effectiveness of any individual hearing protector cannot be determined under workplace conditions; however, both references (a) and (c) require that personal hearing protection be worn to attenuate the occupational noise exposure of employees to within the limits of the occupational exposure limit. Hearing protectors are evaluated under rigorous laboratory conditions specified by the American National Standards Institute in ANSI Z24.22-1957 (R1971) and ANSI S3.19-1974. However, OSHA's experience and the published scientific literature indicate that laboratory-obtained real ear attenuation for hearing protectors can seldom be achieved in the workplace.

6. The Navy and Marine Corps Public Health Center (NMCPHC) website at <http://www.nmcphc.med.navy.mil/> provides guidance and links to sites with additional information on selecting HPDs that have been tested for attenuation under American National Standards Institute requirements. Consult occupational audiologist or industrial hygienist for specifics per references (a) and (m).

7. Appendix B provides information on how to determine the adequacy of hearing protector attenuation using the Noise Reduction Rating (NRR) of a given hearing protector.

a. Field Attenuation of HPDs. To estimate the attenuation afforded to a noise-exposed employee in an actual work environment by muffs, plugs, or a combination of both, proceed as follows.

(1) For muffs or plugs:

(a) Obtain the Noise Reduction Rating (NRR) which is on the packaging of the HPD.

(b) Subtract 7 dB from the NRR to correct for using A-weighted measurements. For C-weighted measurements and peak measurements, no correction is needed.

(c) To adjust for workplace conditions, apply a safety factor of 50 percent. This is because the field use of HPDs does not afford the same degree of protection achieved in the laboratory using well-trained subjects under ideal test conditions

(2) For dual protection (i.e., muffs and plugs):

(a) Obtain the NRR for the higher rated hearing protector, subtract 7 dB if using A-weighted measurements, no correction for C-weighted measurement or peak measurements, and apply a safety factor of 50 percent.

(b) Then add 5 dB to the field-adjusted NRR to account for the use of the second hearing protector.

(3) Calculation examples are provided in Appendix B.

(4) Personnel shall not be exposed to noise levels greater than 100 dBA (i.e., the effective field derated upper limit of dual HPDs) without wearing dual hearing protection (i.e. muffs and plugs) and implementing administrative controls to bring the effective exposure to less than an 8-hour TWA of 85 dBA or 140 dBP.

Summary of HPD Use Requirements^{1,2}

SPL	HPD Requirement	Rationale ^{1,2}
$\geq 85 - 96$ dBA or ≥ 140 dBP - < 165 dBP	Single (plugs <u>or</u> muffs) with derated NRR that will bring the effective exposure to less than an 8-hour TWA of 85 dBA or 140 dBP	Ex. A more effective HPD might be considered to have a NRR of 29. The effective "dBA" derated NRR is approx. 11 (i.e. $29 - 7 \times 0.5$). The approximate upper SPL attenuation limit of the derated single HPD is 96 dBA (i.e., $85 + 11$)
$> 96 - 100$ dBA or ≥ 165 dBP	Double (plugs <u>and</u> muffs) with derated NRR that will bring the effective exposure to less than an 8-hour TWA of 85 dBA or 140 dBP	Ex. One HPD has a NRR of 29 and the other has a NRR of 27. The effective "dBA" derated NRR for the higher rated HPD is approx. 11 (i.e. $29 - 7 \times 0.5$). The second HPD adds approximately 5 dB of additional attenuation. The approximate upper SPL attenuation limit of the derated double HPDs is 101 dBA (i.e., $85 + 11 + 5$). (Upper limit was rounded to 100 dBA)
> 100 dBA	Double (plugs and muffs) with a derated NRR combined with administrative controls to bring the effective exposure to less than an 8-hour TWA of 85 dBA or 140 dBP	Same basic rationale as for "Double" HPDs

¹OSHA's experience and the published scientific literature indicate that laboratory-obtained real ear attenuation NRR values for HPDs can seldom be achieved in the workplace. Therefore, OSHA has implemented the concept of 50 percent derating of labeled NRRs as a tool to make determinations of HPD adequacy. Studies have found that on average, workers only received approximately 50 percent of the published NRR values and OSHA felt that this should be accounted for especially in programs with high STS rates. The 50 percent derating means that the listed NRR of a HPD is divided by half in an effort to more realistically represent a HPD's real world attenuation..
²The "96" and "100" dBA criterion for single and double HPD use, respectively are general "rules of thumb". Therefore, BUMED IHs shall recommend the appropriate type of HPD based upon the actual derated attenuation properties of the HPD for the given assessed environment and other factors such as comfort, length of use, cost, cleaning and maintenance, etc.

Positive and negative features of some HPDs

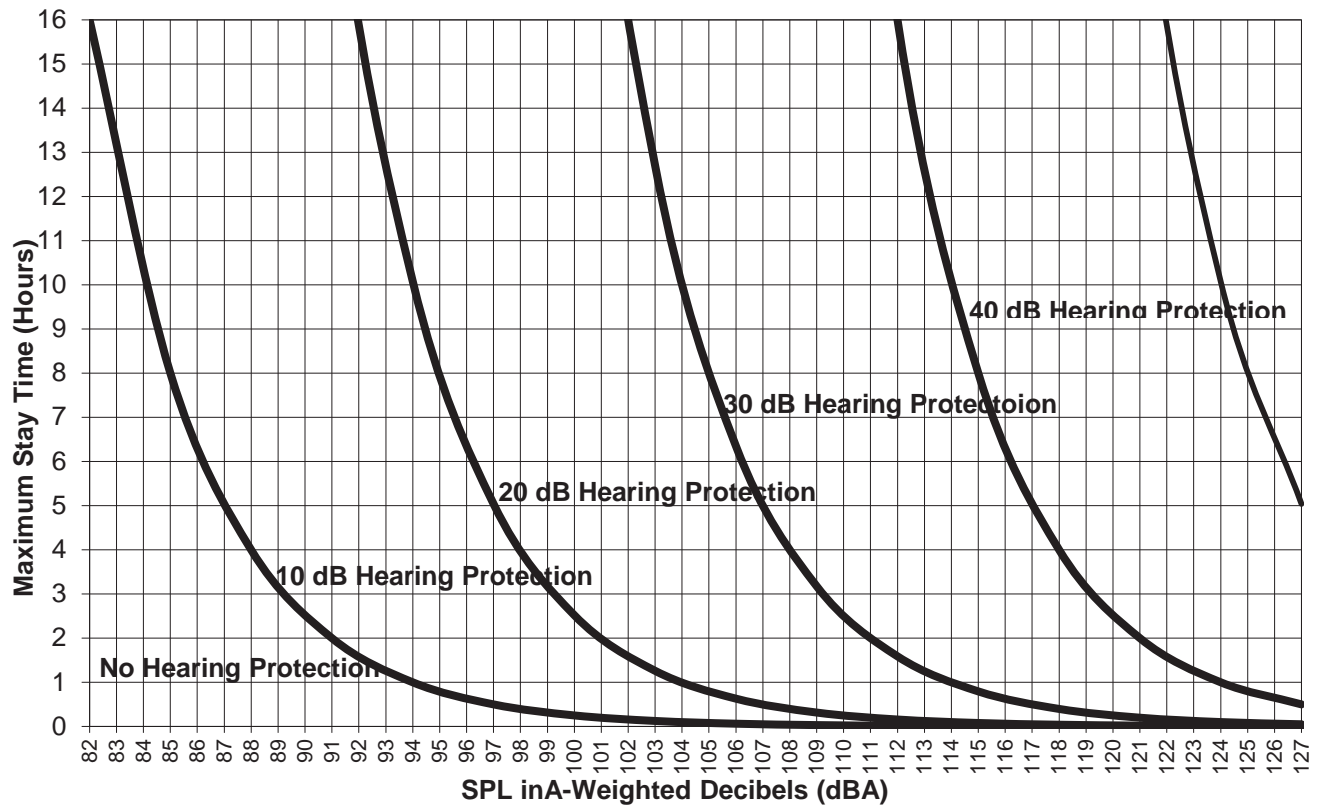
TYPE	POSITIVE	NEGATIVE	Typical Derated Min – Max Noise Reduction Ratings (NRR) ¹
Plugs (pre-molded)	Inexpensive; Variety of sizes; Easily carried; Easily soiled.	Individual fitting by medical personnel required; Frequent reinsertion may cause irritation; May loosen with jaw movement.	Depending on product, compliance & fit ≈ (0 to 10dB NRR when derated)
Disposable	Inexpensive; One-size-fits-most; Easily carried; Shows dirt so replaced more frequently	Requires conscientious insertion; May loosen with jaw movement; Limited choice of size; Not easily cleaned.	Depending on product, (0 to 16 dB NRR when derated)
Custom Molded Plugs	Comfortable; May be worn for long periods; Sense of ownership /compliance with use; Can accommodate Comms. & other specialized use; Can be cleaned. May include interchangeable filters to vary level of noise reduction; Easily soiled; not easily cleaned	Expensive Requires medically supervised ear impression; If lost or damaged must remake; With weight loss may not fit correctly; May loosen with jaw movement	Depending on product, compliance fit and electronic features. ≈ (0 to 16 dB NRR when derated)
Headband Ear Canal Caps	Quickly fitted without touching ears or caps; Easily carried; Inexpensive; Easily cleaned	Relatively poor sound attenuation; May be uncomfortable after short time	Depending on product, compliance & fit. ≈ (0 to 7 dB NRR) when derated
Circumaural Noise Muffs	Can be worn over plugs; Universal fit (one size fits most); Can accommodate Comms. & other; Can be cleaned	Relatively Expensive; If swivel band must have support strap; May be difficult to wear with other PPE; Heavy; Difficult to carry; Hair and eyeglasses interfere	Depending on product, compliance fit and electronic features. ≈ (0 to 16 dB NRR when derated)

¹OSHA's experience and the published scientific literature indicate that laboratory-obtained real ear attenuation NRR values for HPDs can seldom be achieved in the workplace. Therefore, OSHA has implemented the concept of 50 percent derating of labeled NRRs as a tool to make determinations of HPD adequacy. Studies have found that on average, workers only received approximately 50 percent of the published NRR values and OSHA felt that this should be accounted for especially in programs with high STS rates. The 50 percent derating means that the listed NRR of a HPD is divided by half in an effort to more realistically represent a HPD's real world attenuation. Any single type of hearing protective device will not meet the needs of all personnel in a HCP. The appropriate types of HPDs should be selected while considering the factors listed above and the amount of attenuation required reducing noise to levels below an 8 hour TWA of 85 dBA or 140 dbP. Refer to the command's most recent IH survey for specific HPD recommendations or consult with your supporting BUMED MTF, NEPMU or the Navy and Marine Corps Public Health Center.

Appendix B

HEARING PROTECTION DEVICES STAY TIMES

Administrative Control of Noise Exposure with Hearing Protective Devices Maximum Stay Times



NOTE: Values may also be calculated using the formula:

$$T = \frac{16}{2^{\left(\frac{L-82}{3}\right)}} \quad T = 8 \times 2^{\frac{85-L}{3}}$$

Where: T = time in hours (decimal)

L = effective sound level in dBA, i.e. environmental SPL - NRR

* Sound levels may be measured in either dBA or dBC. However, if dBA is used, the NRR must be reduced by 7 dB.

Intermediate values may be interpolated by adding or subtracting the decibel difference to the appropriate column.

Appendix C

Hearing Readiness Metrics

1. Two metrics track HCP effectiveness

a. Significant Threshold Shifts (STS) rate is defined as a change in hearing threshold relative to the current Baseline (Reference) Audiogram of an average of 10 dB or more at 2000, 3000, and 4000 Hz, in either ear). STS rate is defined as the number of STSs identified during annual audiograms, regardless of the findings of follow-up audiometry, for each 100 workers identified as potentially exposed to hazardous noise and tested during the annual reporting period. STS rates shall be monitored over time with statistical process control to identify changes in statistical behavior.

STS Rate Formula

A = Number of persons who have a significant threshold shift

B = Number of employees requiring annual audiograms

STS Rate = $(A/B) \times 100$

b. Audiogram Completion (AC) rate is defined as the "percentage of workers identified as requiring annual audiograms who receive their audiograms."

AC Rate Formula

A = Number of persons who receive annual audiograms

B = Number of persons requiring annual audiograms

AC Rate = $(A/B) \times 100$

2. Hearing readiness rates are intended primarily for installations and units to monitor their effectiveness in preventing noise-induced hearing loss. STS rates and AC rates are also used to monitor effectiveness of the HCP. Because STS rates are heavily influenced by the percentage of exposed workers actually receiving annual audiograms, the rate of completion of audiograms is also measured. The STS rate and the audiogram completion rate shall be calculated per reference (a).

Appendix D

HCP Self-Assessment

Unit HCP self-assessment checklist:

a. Do Supervisors maintain data in MRRS or equivalent electronic system for his or her Marines, Sailors as well as hazardous noise-exposed civilian personnel?

Answer:

b. Does the HCP trainer maintain a written lesson plan that addresses the following:

(1) Importance of hearing readiness for mission success?

(2) Understanding the physical and psychological effects hazardous noise plays in situational awareness, combat effectiveness and lifelong impact on ones quality of life?

(3) Knowledge that hearing tests are performed for early detection of hearing loss and are not preventive, but a tool to alert command or unit of weaknesses in HCP?

(4) Knowledge that disciplinary actions are authorized if one is observed not using HPD in hazardous noise environments?

(5) The responsibilities of both supervisors and employees in the prevention of hearing loss?

(6) Incorporation of HCP responsibilities during new employee and supervisory training?

(7) Responsibility to protect one's own hearing from hazardous noise in all live-fire operational training and in garrison?

(8) Discussion of hazardous noise occurrence at home, recreationally and personal choices made while using personal firearms, operating power tools and mowers, as well as volume of music listened to with and without earphones or headphones?

(9) The importance of properly fitted HPDs?

Answer:

c. Do Marines, Sailors and civilian personnel complete their hearing appointments?

Answer:

d. Does MTF notify supervisors of employee no-shows for appointments?

Answer:

e. Are follow-up audiograms performed one year from baseline date?

Answer:

f. Are MTFs providing written notice of PTS within 21 days of identification of PTS by an audiologist?

Answer:

g. Are WESS entries executed for personnel with a PTS?

Answer:

h. Are all Marines, assigned Sailors and only hazardous noise-exposed civilian personnel fitted, issued, and trained to use CAE plugs and cases prior to tactical combat and operational exercises, live fire exercises and deployment training exercises?

Answer:

i. Is use of hearing protectors enforced during combat, firing range exercises and operational exercises in the field?

Answer:

j. Does safety turnover binders contain an inventory of noise hazardous equipment, tools and processes along with SPL measurements; identity of personnel at risk; and the types of controls in place?

Answer:

k. Is a list of all personnel at risk to occupational noise hazards current and available? (Refer to the MRRS hearing conservation report for Marines and Sailors assigned to command or unit.)

Answer:

l. Are training and HPD fitting records maintained for personnel?

Answer:

m. Does hearing readiness status reach these benchmarks: 100 percent at risk personnel have baseline audiograms, 95 percent of monitoring audiograms performed within one month of birth month, 100 percent of civilian personnel no longer exposed to hazardous noise have received termination audiograms?

Answer:

n. Is HCP training provided to all Marines, assigned Sailors and only hazardous noise-exposed civilian personnel?

Answer:

o. Did Marines, Sailors and only hazardous noise-exposed civilians attend initial HCP training session prior to duties in a hazardous noise environment and annually thereafter? (Marines and assigned Sailors typically

obtain initial HCP training at first duty station and shall receive annual refresher training).

Answer:

p. Is annual hazardous noise awareness training documented in official training records for Marines, Sailors, and only hazardous noise-exposed civilians.

Answer: