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HEADQUARTERS, DIVISION WEST (FIRST ARMY) AND FORT CARSON
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FORT CARSON SOP

24 JANUARY 2008

Army Hearing Program
FORT CARSON HEARING PROGRAM

1. PURPOSE. This regulation provides guidance and requirements for implementing the U.S. Army Hearing Program at Fort Carson and Butts Army Airfield while incorporating additional initiatives which have a direct and positive impact on program effectiveness.

2. APPLICABILITY. This regulation applies to all units on Fort Carson, tenant units, and civilian personnel living and working at Fort Carson and Butts Army Airfield, in addition to all active duty and civilians living and working at Dugway Proving Ground, Pueblo Chemical Depot, Tooele Army Depot and Deseret Chemical Depot.

3. REFERENCES. Listed in Appendix A.

4. GENERAL.

a. Army Hearing Program: The Army Hearing Program (AHP) represents leadership policies, strategies and processes to prevent noise induced hearing loss among military and Department of Defense (DOD) civilian personnel. The hearing program has four major elements: hearing readiness, clinical hearing services, operational hearing services, and hearing conservation. Good hearing enables a Soldier and/or civilian employee to maintain critical situational awareness and effective voice communication in any environment (i.e. garrison, industrial, training, operational and combat missions). This is accomplished by: 1) preventing both temporary and permanent hearing loss, and 2) improving communication in noise (signal-to-noise or S/N ratio). Civilian personnel will be enrolled in a comprehensive hearing conservation program (HCP) when duties require exposure to hazardous noise or suspected ototoxins (ear poisons). DA Pam 40-501, para 3-3 provides definitions of hazardous exposures. Appendix D provides examples of typical exposures that meet the criteria for enrollment in a comprehensive HCP. All Soldiers on Fort Carson, due to military training requirements known to be noise hazardous, are automatically enrolled in the HCP.

b. Hearing loss degrades combat readiness and effectiveness. On today's advanced technology battlefield, Soldiers must be prepared to communicate effectively and perform optimally, which requires essentially normal hearing sensitivity. Good hearing is a proven combat multiplier, preserving the lethality and survivability of the War Fighter.

c. Noise-induced hearing loss is one of the most prevalent injuries among military and civilian personnel, representing a significant portion of the annual cost for service-connected

c. Noise-induced hearing loss is one of the most prevalent injuries among military and civilian personnel, representing a significant portion of the annual cost for service-connected disability compensation. Hearing loss and/or its associated symptoms (i.e.; tinnitus) result in permanent disability, which in most cases is preventable. It is imperative that emphasis on hearing conservation and preventive measures be maintained. The primary goal of the Army Medical Department is Force Health Protection. Hearing loss prevention is consistent with the goal to prevent or eliminate disease and non-battle related injuries.

d. Nuisance noise is defined as any unwanted sound that interferes with communication or the ability to achieve restful sleep periods. It capitalizes on the non-auditory effects of noise, creating stress and fatigue in dangerous combinations for Soldiers and civilians. Acceptable noise levels are task-specific, for example, the amount of tolerable ambient noise is greater for a tactical operations center (TOC) than for a sleep tent. The presence of unwanted or intrusive noise has been heavily researched and the resulting insights can assist in short and long-term care of the deployed Soldier at all ranks. Preservation of communication ease, including face-to-face briefings or radio communications, *significantly reduces stress levels and increases the operating efficiency* of all personnel. In addition, *sufficient sleep cycles* in the rest areas 1) increases the immune system's ability to fight disease, 2) sustains keen perception ability, and 3) preserves higher mental abilities and motor skills. In essence, an alert, combat-ready Soldier is restored. Finally, nuisance noise common to the Garrison community potentially interferes with hearing warning sirens or emergency signals, potentially jeopardizing the safety of all installation personnel.

e. The essential elements of the Fort Carson Hearing Program are listed below with general details provided in DA Pam 40-501, chapters 4-10 and FM 4-02.17, Preventive Medicine Services, Appendix C. Procedures and services pertaining specifically to Fort Carson are provided in the following paragraphs:

- (1) Noise Hazard Identification (para 6).
- (2) Engineering Controls (para 7).
- (3) Hearing Protectors (para 8).
- (4) Monitoring Audiometry & Hearing Readiness (para 9).
- (5) Health Education (para 10).
- (6) Enforcement (para 11).
- (7) Program Evaluation (para 12).
- (8) Operational Hearing Services (para 13).
- (9) Garrison Nuisance Noise (para 14).

Additional Hearing Services available to installation units are outlined in para 15 with contact information provided.

5. RESPONSIBILITIES AND IMPLEMENTATION.

a. The Fort Carson Commanding General

- (1) Meets the requirements of AR 40-5 and AR 385-10.

(2) Issues a command emphasis letter endorsing the Hearing Program at Fort Carson.

b. The MEDDAC Commander

(1) Facilitates medical surveillance and provides staffing oversight for hearing program services afforded to all military and identified civilians exposed to hazardous noise IAW AR 40-5 and DA Pam 40-501.

(2) Appoints on orders a military audiologist to act as the Fort Carson Hearing Program Manager (HPM) for Fort Carson, Dugway Proving Ground, Tooele Army Depot, Pueblo Chemical Depot, Deseret Chemical Depot and Butts Army Airfield personnel, with tasks outlined in section c.

(3) Appoints an individual to act as the Industrial Hygiene Program Manager (IHPM) with responsibilities outlined in section d.

c. The Fort Carson Hearing Program Manager (HPM) manages and coordinates all aspects of the Hearing Program outlined in this SOP for Fort Carson, Dugway Proving Ground, Tooele Army Depot, Pueblo Chemical Depot, Deseret Chemical Depot and Butts AAF. These responsibilities include:

(1) Supervision of staff providing hearing examinations (monitoring audiometry) services at least annually (to include pre- and post-deployment evaluations) for all noise-exposed personnel. Uses authorized Defense Occupational Environmental Health and Readiness System-Hearing Conservation (DOEHRS-HC) audiometric instruments, computers and guidance IAW DA Pam 40-501 Chapter 7.

(2) Ensures audiometric testing records are maintained using authorized DD Form(s) 2215 and 2216, which are generated by DOEHRS-HC system. Ensures that all audiometric records are included in the medical record per AR 40-66.

(3) Performs clinical, diagnostic audiometric testing services for soldiers with Hearing Readiness Classification III or IV in a way that shows dignity and respect. Instructs all Soldiers and civilian personnel prior to testing that feigning or exaggerating hearing loss in an attempt to avoid duty or to increase disability payments is punishable under UCMJ:

"Any person pretending to have a hearing loss which is subsequently found to be non-existent is subject to prosecution under federal law. Feigning illness to avoid duty is a violation of Article 115 (Malingering), Uniform Code of Military Justice, subjecting the violator to confinement for one year, forfeiture of all pay and allowances, and a dishonorable discharge.

Feigning illness to increase one's disability is a violation of Article 132 (Fraud Against the United States), Uniform Code of Military Justice, subjecting the violator to confinement for five years, forfeiture of all pay and allowances, and a dishonorable discharge."

Addresses inconsistencies in test results in a way that ensures patient confidence, trust, and understanding.

(4) Ensures notification of appropriate personnel (Commanders, civilian supervisors, safety and occupational health managers) when an individual has sustained a positive significant threshold shift (STS) or permanent hearing loss that may endanger the individual and others. Notification can include the need for STS follow up, a diagnostic evaluation, a DA 3349 profile form (with appropriate recommendations for maximum remediation of risks), and/or a written confirmation of a permanent hearing shift. All soldiers and civilians who require audiologic follow up for means of profiling, retention, separation or fitness for duty must be seen by the Ft. Carson Hearing Program Manager (audiologist) for diagnostic audiometry. *Note: The civilian audiologist in the Ear, Nose, Throat (ENT) Clinic, Department of Surgery at Evans Hospital has a rehabilitative clinical audiology role (including hearing aid dispensing) for Soldiers. The civilian audiologist in the ENT Clinic does not issue permanent hearing profiles. This falls under the role of the military HPM audiologist at Fort Carson.

(5) Provides operational hearing education at least annually for all noise-exposed personnel.

(6) Provides hearing program training for installation-directed courses, to include (but not limited to) the annual Safety Day Training briefs for all active duty soldiers assigned to Fort Carson.

(7) Ensures that appropriately trained personnel fit noise-exposed individuals with approved earplugs, and ensures that the condition and fit of earplugs are examined at least annually.

(8) Conducts unannounced inspections of noise-hazardous areas, including ranges.

(9) Conducts noise surveys in field training environments (TOC, rest and common areas), training Soldiers to understand the non-auditory effects of nuisance noise and to utilize effective noise abatement strategies.

(10) Reports program participation and quality assurance thru Chief, Preventive Medicine, to the MEDDAC Commander at least annually.

(11) Provides training, guidance, and technical support for unit-appointed Hearing Program Officers\Non-commissioned Officers (HPOs) in their appointed responsibilities (outlined in section h) for managing their Company level, unit hearing program.

(12) Provides training for unit medical assets or support personnel in obtaining national certification as occupational hearing conservation technicians. Training requirements must meet standards of the Council for Accreditation in Occupational Hearing Conservation (CAOHC). These individuals will serve as the unit's subject matter expert on hearing conservation and support the unit with annual hearing readiness and operational requirements.

(13) Provides courses for battalion- and company-level HPOs on a regular basis, instructing Soldiers in the requirements and procedures for maintaining/monitoring unit hearing

readiness, proper use of hearing protection for training and deployments, nuisance noise abatement strategies, and methods for prevention of acoustic trauma while maintaining critical communication ability.

(14) Upon request, embeds with installation units during field and range exercises to determine practical solutions for difficult hearing protection and communication requirements, using various equipment combinations and strategies.

(15) Coordinates with the Installation Compensation Program Administrator (ICPA) to review claims for occupational hearing loss. Provides consultation and submits written comments through the ICPA to the Department of Labor.

d. Installation Compensation Program Administrator (ICPA)

(1) Reports OWCP claims and awards for hearing loss and STS follow-up compliance to the CG semi-annually.

e. Industrial Hygiene Program Manager (IHPM)

(1) Performs survey of all known and suspected noise-hazardous areas and equipment and ototoxic exposures, and repeats survey within 30 days of any reported changes in equipment or work-site operation using approved and calibrated equipment.

(2) Maintains current inventory of all noise-hazardous areas using DD Form 2214 or 2214C.

(3) Identifies noise and ototoxic-exposed personnel, and the magnitude of their noise exposure. Provides a survey report with pertinent recommendations for appropriate personnel (commanders, supervisors and safety managers) following initial evaluations, re-evaluations or upon request).

(4) Provides the HPM with the number of noise-exposed and ototoxic-exposed civilian personnel for the specific calendar year on an annual basis. This is required to determine HCP participation rates.

f. Chief, Occupational Health (OH)

(1) Coordinates with the IHPM and HPM to identify and maintain a database of all DOD civilians that are exposed to ototoxins and high intensity noise for the HCP.

(2) Schedules and performs placement, periodic and termination audiometric evaluations on DOD civilian personnel exposed to hazardous noise.

(3) Provides appropriately trained personnel to fit DOD civilians with proper size or types of hearing protective devices.

(4) Provides appropriately trained personnel to incorporate hearing program education classes in conjunction with ongoing health education as required to promote individual understanding of hearing loss prevention.

(5) Ensures that preformed earplugs and all other hearing protective devices are checked on an annual basis for any signs of deterioration.

(6) Refers individuals for further testing and evaluation as appropriate.

g. Installation Safety Program Manager (per AR 385-10)

(1) Coordinates with Fort Carson Garrison and Tenant Commands' Safety Offices to ensure the Hearing Program SOP is followed for Soldiers and noise exposed civilians within each individual Safety Office's jurisdiction.

(2) Evaluates hearing program compliance during Standard Army Safety and Occupational Health Inspections.

(3) Ensures that Garrison and Tenant Command Safety Offices record and monitor incidence of OSHA Reportable Hearing Loss as occupational illness (repetitive trauma) or as a one time acoustic trauma on the OSHA log of injury and illness, (with the exception of OSHA reportable hearing losses directly contributed to combat).

(4) Coordinator for safety issues related to the Hearing Program.

(5) Ensures HPM is a member of the Installation Safety Council.

h. Unit Commanders (Primarily Battalion-and Company-level), Directors and Supervisors of noise-exposed personnel.

(1) Appoints on orders an individual (officer, NCO, or civilian staff) to act as the unit Hearing Program Officer (HPO) as his/her primary appointed duty, to manage the unit hearing program with responsibilities outlined in section h. Ensures HPO completes installation-required training for hearing program activities.

(2) Endorses the Fort Carson Commanding General's emphasis policy letter on the Hearing Program and stresses the importance of preventive measures with a unit-level Hearing Program emphasis letter and a unit SOP detailing the Hearing Program.

(3) Posts and maintain noise hazard danger and caution signs and decals for all identified areas and equipment IAW AR 420-70 and the Safety Color Code Markings, Signs and Tags Information Guide.

(4) Enforces the mandatory use of appropriate, authorized hearing protectors for all personnel when around noise hazard areas and takes disciplinary action as appropriate for non-compliance. Requires all Soldiers and noise-exposed personnel to maintain proper size earplugs

and the earplug carrying case as an item of individual equipment. Soldiers will wear the earplugs and earplug carrying case as part of the army combat uniform (ACU), either on the Soldier's front right belt loop of the ACU trousers, on the Soldier's top right row of loops on the flack vest or in the left arm pocket of the nomex coverall.

(5) Consults with Fort Carson HPM for noise-hazardous missions requiring preservation of critical communication ability using communication enhancement/protection systems. Ensures Soldiers are adequately trained with nonlinear systems as required.

(6) Ensures medical threat briefings provided prior to unit deployments include noise hazard descriptions and preventive measures (i.e.; hearing protection and noise abatement strategies) for troops.

(7) Coordinates with the IHPM to properly identify noise-hazardous areas, noise-exposed personnel, and positions for annotation on job descriptions when appropriate. Ensures that annotated job descriptions include requirement to wear personal protective equipment, for example, hearing protectors and noise-survey dosimeters when requested, and to report for scheduled medical examinations as required.

i. Unit Hearing Program Officers\NCOs (HPOs).

(1) Contacts the Fort Carson HPM for guidance and technical support for implementing a comprehensive hearing program for the unit. Utilizes the Hearing Program webpage posted at <http://www.evans.amedd.army.mil/PM/hp.html> for educational resources, tools and documents.

(2) Functions as POC for the Hearing Program. Maintains copies of all pertinent regulations, unit education records and unit hearing readiness tracking records. (See Appendix F for Hearing Program Checklist).

(3) Coordinates and schedules annual, pre- and post-deployment hearing examinations for all Soldiers and noise-exposed personnel (may schedule entire unit if appropriate) by contacting the Hearing Readiness section personnel located at the Soldier Readiness Center (SRC) at Fort Carson.

(4) Ensures hearing examinations are provided using the authorized Defense Occupational and Environmental Health Readiness System - Hearing Conservation (DOEHRS-HC) audiometer equipment. Ensures appropriate DD Form 2215 and 2216 hearing test records are maintained in the individual's medical records.

(5) May utilize appropriately trained individuals within the unit who are certified by CAOHC as hearing conservation technicians to assist with unit hearing examinations. Contacts the Fort Carson HPM for technician certification course schedules.

(6) Ensures all in-processing personnel receive a hearing examination, to include hearing protection check, fit and initial installation hearing health education.

(7) Maintains tracking system through the Medical Protection System (MEDPROS) for monitoring the Hearing Readiness Classification (HRC) of unit personnel. Reports unit compliance and hearing readiness rates to unit Commander. Ensures Class 4 Soldiers complete required DOEHRS-HC hearing tests and Class 3 Soldiers complete diagnostic evaluations with an installation audiologist in a timely manner.

(8) Ensures all Soldiers and noise-exposed personnel receive operational hearing education at least annually and maintains training roster as documentation. Coordinates with Fort Carson HPM for health education course.

(9) Provides input to deployment medical threat briefings, and/or to preventive medicine assets, in regards to noise hazards, hearing protection, communication enhancement, and noise abatement strategies relevant to the projected threat of the intended theater of operations.

(10) Requisitions and maintains an adequate supply of approved hearing protectors, including helmets, noise muffs, and preformed (triple-flange, quad-flange or combat arms types) earplugs in preparation for training exercises and deployments. Information on approved preformed earplugs and requisition information is provided in DA Pam 40-501, table 6-1, or in Appendix E, or from the HPM and Hearing Readiness staff located at the Soldier Readiness Center (SRC).

(11) Must maintain an adequate supply of approved hand-formed (Sound Guard, SuperFit 30, and Superfit 33) earplugs for visitors or personnel not possessing preformed earplugs. Yellow E.A.R. polyvinyl foam earplugs are not authorized for DoD purchase. See below:

“Under the provisions of the Javits-Wagner-O’Day Act, the Sound Guard foam earplug has been substituted for the Aearo Classic foam plug as a set aside item for the Blind and Disabled Industries. If government personnel purchase polyvinyl foam earplugs, they must use the Defense Logistics Agency and National Stock Number 6515-00-137-6345. Even if a higher quality foam plug with a fitting ring is available directly from Aearo at less cost, we must use this government source.

THIS DOES NOT MEAN THAT THE SOUND GUARD FOAM EARPLUG IS THE ONLY EARPLUG THAT IS AUTHORIZED FOR USE. Other approved earplugs can continue to be ordered from government and commercial sources as long as they are not polyvinyl foam earplugs. An exception can be made to still purchase large (Superfit 33) and small (Superfit 30) sized foam earplugs from Aearo to accommodate the extreme ends of the fitting distribution provided that the Sound Guard is used for the majority of users. This policy is consistent with federal and DOD regulations that permit a freedom of choice from among approved hearing protectors unless medically or environmentally contraindicated.”

Fort Carson Units are permitted to exhaust their existing supplies of yellow EAR foam earplugs but future purchases must follow the above congressionally mandated guidance.

(12) Ensures that approved pre-formed and hand-formed earplugs are selected and fitted by a Hearing Program Officer (HPO) or appropriately trained personnel. Ensures these earplugs are examined at least annually to ensure proper fit and condition. Coordinates with Fort Carson HPM for earplug fitting training.

(13) Ensures aviation or CVC type helmets and noise muffs are examined for proper fit and condition at least semi-annually.

(14) May obtain noise muffs through commercial sources as well as through the Federal Supply System.

(15) Ensures approved earplugs and carrying case is provided, free of charge, to personnel exposed to noise hazards. Ensures appropriate wear of earplugs and earplug case by unit Soldiers. (See Appendix E for order information)

(16) Prepares a unit SOP detailing Hearing Program implementations at the Company unit level. Reviews unit range SOP for inclusion of hearing protection procedures (including calling a cease fire when improperly fitted hearing protection falls out of the ear). Contacts Fort Carson HPM for assistance with preparing a unit SOP.

j. Soldiers and Noise-Exposed Personnel

(1) Reports for in-/out-processing, pre-/post-deployment, and annual hearing examinations.

(2) Maintains a pair of properly fitted, preformed earplugs and an earplug carrying case as an item of personal protective equipment, and keeps earplugs and carrying case in their possession as part of their uniform or load bearing vest as directed.

(3) Correctly wears approved and properly fitted hearing protectors when exposed to hazardous noise (i.e. weapons firing, tactical vehicles, motorcycles, motorboats, power tools, MOUT, etc.).

(4) Reports for operational hearing education at least annually.

(5) Immediately reports suspected hearing loss following weapons firing or exposure to blasts/explosions in the combat or training environment to their supervisor for appropriate medical attention.

(6) Provides all pertinent information regarding noise exposure and use of hearing protective devices in noise hazardous areas.

(7) Ensures the best effort is put forth when taking a DOEHRS-HC or diagnostic hearing test.

6. NOISE HAZARD IDENTIFICATION

(a) As a part of the Industrial Hygiene Program, the IHPM

(1) Conducts noise surveys of all suspected noise-hazardous areas, vehicles, and equipment at least once and within 30 days of any change in operations.

(2) Determines the time weighted average (TWA) for all Department of Defense (DOD) civilian employees routinely working in hazardous noise areas and military personnel working in hazardous noise industrial-type operations at least once and within 30 days of any change in operations affecting noise levels.

(3) Supervises and ensures industrial hygiene staff completes visits to each potentially noise-hazardous area at least once a year to fulfill requirements of AR 385-10.

(b) Industrial hygiene technicians or personnel trained in the use of noise measurement equipment:

(1) Will perform noise surveys as required. Guidance for performing noise surveys is provided in USACHPPM TG 181. Details for survey equipment and calibration guidelines are outlined in DA Pam 40-501, para 4-2.

(2) Will complete and document noise surveys using the DOEHRS-HC DD Form 2214 and/or DD form 2214C to identify hazardous noise survey results. Reports will be distributed and maintained IAW DA Pam 40-501, para 4-5.

(c) Military and DOD civilian personnel may request a noise survey any time potentially noise-hazardous equipment is purchased or following any change in operations. In addition, previous noise survey records for specific locations can be requested. Record and survey requests can be directed to the IHPM at (719) 526-2939 or by reporting to the Department of Preventive Medicine, Evans Army Community Hospital (EACH), in BLDG 2059.

(d) Posting:

(1) The unit Commander or supervisor ensures that danger/caution signs and decals are posted at entrances to, on the periphery of, and on noise-hazardous equipment and vehicles in accordance with the Safety Color Code Markings, Signs and Tags Information Guide. In addition, 29 CFR 1910.95 must be posted in all industrial, noise-hazardous areas.

(2) The IHPM ensures applicable 85 dBA and 140 dBp noise contours are established and advises the unit Commander or supervisor where to locate contour signs.

7. ENGINEERING CONTROLS

(a) The most desirable hearing conservation measure is reducing noise levels at their source and eliminating harmful health effects. Implementation is generally feasible, if technologically and operationally practicable and cost effective. Procuring new equipment, vehicles or facilities offers the ideal opportunity to implement noise controls. The objective is to review all acoustic specification before purchase to ensure, if possible, a steady-state level less than 85 dBA at all personnel work locations during normal operations.

(b) Control measures for existing equipment and facilities to reduce steady-state noise levels below 85 dBA and impulse noise levels below 140 dBp should be employed to the maximum

extent possible. In some instances, the implementation of engineering controls requires funding which is rank ordered on the installation hazard abatement plan per AR 385-10 and TB MED 503 . In other instances, simple maintenance of the equipment, vehicles, or facilities will eliminate or control the hazard. Details for effective maintenance noise-control measures can be found in DA Pam 40-501, para 5-2.

(c) An Industrial Hygienist from the Department of Preventive Medicine, EACH, can be consulted for engineering control recommendations and follow-up measures. The section is located in BLDG 2059 and can be contacted at 526-2939.

8. HEARING PROTECTORS

(a) All personnel working within or visiting potentially noise-hazardous areas must have hearing protectors with them at all times. Military personnel will wear the earplug case containing authorized and appropriate, preformed or hand-formed earplugs as a standard part of the uniform, either on the Soldier's front right belt loop of the ACU trousers, the Soldier's top right equipment loop of the flak vest, or the left arm pocket of the nomex coverall.

(b) Hearing protection devices (HPDs) consist of earplugs, noise muffs, ear canal caps, noise-attenuating helmets, or a combination of these. A list of approved hearing protection devices for government purchase can be found in Appendix E, which includes an example of a typical HPD purchase for a military unit. Personnel may select the type of protector desired (pre-formed or hand-formed), unless the selection is medically contraindicated or inappropriate for a particular noise-hazardous environment. In-depth descriptions and maintenance recommendations of approved HPDs can be found in DA Pam 40-501, paras 6-3 and 6-5.

(c) HPDs are issued at no charge to all military personnel and to all DOD civilians working in potentially noise-hazardous areas. An earplug carrying case must also be provided at no charge with each set of preformed earplugs. This case can also be used for hand-formed earplugs. HPDs are considered required personal protective equipment for military deployments.

(d) Initial Fittings & Annual Integrity Checks. Medically-certified preformed earplug fittings will be completed during in-processing activities at the Soldier Readiness Center for military, and as required during the Occupational Health Services entry physical for DOD civilians at EACH Department of Preventive Medicine. Earplug re-fits and integrity checks can be completed during annual, pre-, or post-deployment hearing evaluations. Organic unit assets that are CAOHC certified hearing technicians and/or Hearing Program Officers (HPOs) who have been issued a certificate of completion from the Fort Carson Hearing Program are qualified to complete integrity checks. Units without certified CAOHC technicians or HPOs may request support from the Fort Carson Hearing Program Manager at EACH Dept of Preventive Medicine 526-2939 or at SRP Hearing Readiness section 526-6976.

(e) Requisition. HPOs must requisition HPDs through their Medical Supply Officers (MSOs) using appropriate national stock numbers (Appendix E). The SuperFit 30 and SuperFit 33 (small and large size) foam earplugs are credit card purchases through the GSA website.

(f) Protector Requirements. Civilians and military personnel must wear appropriate hearing protection when working with or around equipment, tactical vehicles or weapons that produce hazardous levels of noise. Definitions of hazardous noise are listed below. Examples of steady-state and impulse noise levels produced by common military equipment are included in Appendix B.

(1) *Steady-state noise levels of ≥ 85 dBA* (regardless of duration) – requires single hearing protection.

(2) *Steady-state noise levels of ≥ 103 dBA* (regardless of duration) – requires double protection (i.e.; earplugs and helmets or earplugs and noise muffs).

(3) *Steady-state noise exposure > 108 dBA* – exposure is not permitted.

(4) *Impulse noise levels of ≥ 140 dBP* – requires single hearing protection.

(5) *Impulse noise levels > 165 dBP, but less than or equal to curve Z* per MIL-STD 1474D, requirement four, figure 4-1, personnel must wear earplugs in combination with noise muffs or a noise-attenuating helmet.

(6) *Impulse noise levels greater than curve Z*, TSG must approve exposure.

(7) *Combat scenarios and HPDs*. In combat, Soldiers should wear appropriate and authorized hearing protectors, especially when firing weapons or riding in tactical vehicles or aircraft. Hearing protectors improve readiness and prevent permanent or temporary threshold shifts which impair the ability to communicate and to detect and localize quiet or low level combat sounds.

(8) *Combat scenarios and communication requirements*. In combat, Soldiers should use appropriately fitted nonlinear HPDs (i.e.; combat arms earplugs) or communication enhancement systems when impairment to hearing is detrimental to mission requirements (i.e.; dismounted infantry operations).

9. MONITORING AUDIOMETRY & HEARING READINESS. Monitoring audiometry detects changes in an individual's hearing sensitivity. This information identifies individuals who are highly susceptible to noise-induced hearing loss, allows for early identification of and intervention for hearing loss, and evaluates the effectiveness of the hearing program. Hearing Readiness (HR) specifically focuses on ensuring Soldiers have the required physical capabilities, personal protective equipment (i.e.; HPDs) and medical equipment that are needed to deploy. The main components of HR are monitoring audiometry and HPD fitting. All hearing evaluations are to be completed on the DOEHRS-HC audiometer with results recorded on DD forms 2215 (Reference Audiogram) and 2216 (Hearing Conservation Data).

(a) DOD Civilians. Reference audiograms for new civilian personnel with a potential for hazardous noise exposure must be performed as soon as possible, but not later than 30 days after initial exposure. Civilians will receive hearing tests administered by the Occupational Health

section of Evans Army Community Hospital (Department of Preventive Medicine) upon referral to the Hearing Conservation Program (one of the four elements of the Army Hearing Program). Hearing tests can be administered by the CAOHC certified nurses or technicians in the Occupational Health section, and in the Soldier Readiness Processing Center (SRC).

(c) ALL noise-exposed and/or ototoxically exposed civilian personnel must receive reference, 90-day, annual, and termination audiograms. Follow-up hearing tests, 1 and 2, must also be provided, if required. Deaf civilians working in noise-hazardous areas must have reference and termination audiograms.

(d) Termination audiograms must be conducted as part of out-processing or when a worker is going to stop working in a designated noise-hazardous area.

(e) Soldiers. ALL Soldiers, regardless of potential noise exposure, must receive reference, pre-/post-deployment, annual and termination audiograms. Audiograms are required every 12 months.

(f) Deployable Status. In order to be deployable, Soldiers must maintain a Hearing Readiness Classification (HRC) of Class 1 or Class 2. Appendix F provides the four basic HRC categories with definitions. To meet hearing readiness requirements, HPOs may schedule unit Soldiers for their DOEHRS-certified hearing tests by CO, BN or BDE by contacting the Soldier Readiness Processing Center at (719) 526-6976.

(g) Recordkeeping. Soldiers and DOD civilians will be provided with a copy of all hearing test results for the medical record. All DOEHRS-HC data will be forwarded to the DOEHRS-Data Repository, maintained at Aberdeen Proving Grounds, on at least a weekly basis (daily uploads are strongly recommended).

(h) MEDPROS. The Medical Protection System (MEDPROS) HR module is used to track and monitor individual and unit level HR. D2215 and 2216 audiograms are stored in the DOEHRS-DR and are used to calculate the HR status for MEDPROS. The DOEHRS-DR feeds the MEDPROS system on a weekly basis. HPOs can obtain unit Hearing Readiness (HR) reports through the MEDPROS Hearing Readiness Reporting Options function. Soldiers and HPOs can obtain copies of test results through personal Army Knowledge Online (AKO) accounts and through the MEDPROS Web Data Entry portal. In summary:

(1) Soldiers with an HRC of Class 1 or 2 are deployable.

(2) Soldiers with an HRC of Class 3A-C are non-deployable and require a referral to an audiologist for the completion of a diagnostic evaluation, profile and/or MMRB (required for H3 profiles).

(3) Soldiers with an HRC of Class 3D-E are non-deployable and require either a hearing aid fitting and/or a 6 month supply of batteries for issued hearing aid(s).

(4) Soldiers with an HRC of Class 4A require an annual DD2215/16 hearing evaluation. Class 4B indicates a significant threshold shift (STS) was detected on the annual hearing evaluation and requires a follow-up with the hearing conservation section technicians within 30 days.

(i) The Hearing Program Manager will ensure installation test equipment, test methods, clinical services, diagnosis, medical and MEDPROS coding, referrals and notification processes (including OSHA reportable hearing losses) are in compliance with DA Pam 40-501, para 7-3 through 7-7 and FM 4-02.17 Appendix C, para C-9 through C-10.

10. HEALTH EDUCATION. The HPM or designee must provide hearing health education at least annually to ALL military and noise-exposed civilian personnel. Instruction requirements and educational materials are detailed in DA Pam 40-501, paras 8-1 and 8-2. Unit HPOs are required to track annual unit requirements, coordinate instruction blocks with HPM via email or by contacting Preventive Medicine 526-2939, and maintain documentation for completion of course (i.e.; sign-in rosters). HPOs may also obtain educational resources for briefings from the Hearing Program website at <http://www.evans.amedd.army.mil/PM/hp.html>.

11. ENFORCEMENT.

(a) Command Emphasis. The unit commander or supervisor of personnel working in noise-hazardous areas must endorse the installation Commander's command emphasis letter explaining the importance of the Army Hearing Program, the Fort Carson Hearing Program, and the wearing of the earplug carrying case as part of the ACU, flak vest and/or the nomex coverall.

(b) Compliance Measures.

(1) Military and civilian supervisors of noise-hazardous areas must enforce the mandatory use of hearing protectors and take disciplinary action (i.e.; counseling statements) as appropriate for non-compliance. Commanders must enable unit safety officers and HPOs to bring units into compliance with the Fort Carson Hearing Program.

(2) The Hearing Program Manager will conduct unannounced inspections of noise-hazardous areas (including motorpools, ranges, etc.) to ensure compliance with both the Hearing Program and with hearing protective devices requirements. Inspection results will be reported through command channels as appropriate.

(3) The IHPM will inspect noise-hazardous areas to ensure compliance with Hearing Program and HPD requirements during both announced and unannounced surveys.

12. PROGRAM EVALUATION. The Hearing Program will be evaluated using both external and internal reports IAW DA Pam 40-501, paras 10-2 and 10-3. Program effectiveness, quality assurance, and compliance indicators will be forwarded to the MEDDAC Commander on a regular basis as required.

13. OPERATIONAL HEARING SERVICES (OHS). The primary objective of operational hearing services is to enhance Soldier survivability. Hearing is a critical sense that directly affects mission success. Activities in garrison are geared toward preserving the ability to hear in a deployed, combat environment which will enable the Soldier to detect the enemy and communicate effectively in noise. Garrison OHS includes communication enhancement/protection devices, hearing loss prevention tactics and noise surveillance/abatement strategies.

(a) Communication Enhancement/Protection Devices (CEPDs). CEPDs are systems with active filters that protect hearing in the combat environment while *enhancing* the ability to hear on radios and among dismounted team members during missions.

(1) Contact the Ft. Carson HPM for information regarding CEPD use and procurement. Training with sample CEPDs can be scheduled.

(2) Commanders must ensure their units are provided the opportunity to train with CEPDs and understand the use and importance of these devices in maintaining effective communication and situational awareness.

(b) Noise Surveillance and Abatement. For suspected *hazardous* noise levels, refer to section 6 for standard procedures. For *nuisance* noise abatement, contact the Ft. Carson HPM for training and assistance. Field environments, including TOCs, rest areas and motor pools, will be assessed with strategies for effective abatement outlined in verbal and written reports. HPOs will be trained in abatement during required operational and hearing readiness training courses and are responsible for implementing recommendations. *Nuisance noise* is not normally recognized, addressed or limited, but its *effects (stress, fatigue) can be devastating on the Soldier, the unit, and the mission.*

(1) Ideal Noise Levels. Ideal noise levels for the field environment that allow for maximum efficiency:

(i) TOCs and common areas – noise levels not exceeding 55 dBA SIL preserve the ability to communicate comfortably at distances up to 15 feet.

(ii) Sleep Areas – *steady-state* noise levels of ≤ 40 dBA allow for sufficient sleep cycles. In noisy environments, however, ‘maskers’ or broadband noise (such as a fan) may be required to eliminate the negative effects of relatively low-level intrusive noise (i.e.; intermittent field radio communications). The impact of *intrusive noise* varies (i.e.; intermittent landings of rotary and fixed-wing aircraft or tactical vehicles entering/leaving the compound). The sound level will depend on the engine type and distance from the source. For example, a UH-60 helicopter will produce up to 90 dBA of intrusive noise inside a sleeping tent located 150 yards from the landing pad. This level of intrusive noise can be expected to awaken approximately 40% of tent occupants. The use of disposable foam earplugs is the best remedy for situations involving regular intrusive noise.

(2) Basic Abatement Strategies. Basic strategies for nuisance noise abatement in the field are as follows:

(i) Move generators away from tents and use air conditioner extension hoses whenever feasible. The Inverse square law predicts that doubling the distance from a sound source decreases intensity levels by 6 dB.

(ii) Place generators behind natural berms or enclose three sides of generators with sand bags, leaving room for proper ventilation. Point vented side of generator (normally the loudest side of equipment) *away* from tents.

(iii) Design the TOC layout for maximum efficiency (i.e.; provide briefing areas away from radios). Determine which strategies work in the field environment *before* deployment.

(iv) Provide foam earplugs for sleep tents to reduce effects of intrusive noise and ensure maximum ability to achieve REM sleep for Soldiers.

14. GARRISON NUISANCE NOISE. Nuisance noise produced by vehicles (i.e.; excessive engine noise or stereo volume levels) and in post housing must be kept to a minimum to avoid interference with the perception of warning sounds or emergency vehicle signals. Nuisance noise is a citable offense in accordance with local ordinances. Car stereos detectable at distances of ≥ 20 feet from the vehicle is excessive with violators subject to appropriate disciplinary action.

15. HEARING SERVICES. Maintaining good hearing is an individual and organizational responsibility. All Commanders are encouraged to utilize the resources of the Fort Carson HPM and Evans Army Community Hospital Department of Preventive Medicine for the development and maintenance of their unit level Hearing Program.

(a) Additional operational hearing services, including range and worksite consultations, custom hearing protection services, and hearing certification workshops are available to installation units.

(b) Contact the Hearing Program at (729) 526-2939 or through the website <http://www.evans.amedd.army.mil/PM/hp.html> for more information and/or assistance.



MARK A. GRAHAM
Major General, USA
Commanding

- APPENDIX A- References
- APPENDIX B- Military Equipment Steady Noise/Impulse Noise Values
- APPENDIX C- Terms and Abbreviations
- APPENDIX D- Examples of Hazardous Exposures
- APPENDIX E- Earplugs and Carrying Case Requisition Information
- APPENDIX F- Hearing Readiness Classification System
- APPENDIX G- Check-List

APPENDIX A REFERENCES

- AR 40-5, Preventive Medicine - Rapid Action Revision (RAR), January 2007.
- AR 40-66, Medical Record Administration and Health Care Documentation, 21 June 2006.
- AR 40-501, Standards of Medical Fitness, 27 June 2006.
- AR 420-70, Building and Structures, 10 October 1997.
- AR 385-10, Army Safety Program, 29 February 2000.
- CHPPM Form 326, Assessing the Effects of Sound on Sleep, 01 November 2005.
- DA PAM 40-501, Hearing Conservation Program, 10 December 1998.
- DD Form 2214, Noise Survey, 1 January 2000.
- DD Form 2214C, Noise Survey Continuation Sheet, 1 January 2000.
- DD Form 2215, Reference Audiogram, 1 January 2000.
- DD Form 2216, Hearing Conservation Data, 1 May 1996.
- FM 4-02.17, Preventive Medicine Services, January 2006.
- MIL-STD-1472F, DoD Design Criteria Standard Human Engineering, 31 March 1998.
- Safety Color Code Markings, Signs and Tags Information Guide. (Copies are available from the U.S. Army Safety Center, ATTN: CSSC-SM, Fort Rucker, AL 36362-2563).
- TB MED 503, The Army Industrial Hygiene Program.
- 29 CFR 1910.95, Occupational Noise Exposure (Copies are available from the Superintendent of Documents, U.S. Government Printing Office, WASH, DC 20402).

APPENDIX B
NOISE LEVELS

The sound levels listed in tables B-1 and B-2 are the highest typical measured values under normal operation. For most items of equipment there may be several normal operating conditions. Each condition generates a different noise level. For example, there is a 5 to 10 dB difference in noise at the driver position of a truck depending on window closure and auxiliary equipment such as heater fans. There can also be some variation among individual units of the same type of equipment. Different test reports may list somewhat different levels.

Section B-1

STEADY-STATE NOISE

Photo	Model	Name, Condition	Location	Speed km/hr (mph)or	Sound Level dB(A)
	M966, also: M996 M997 M998 M1037 and other non-heavy	High mobility multi- wheeled vehicle (HMMWV), at 2/3 payload	Crew positions	0(idle)	78
				48(30)	84
				88(55)	94
	M996 M997	HMMWV mini and maxi ambulance, at 2/3 payload	Patient areas	up to 88 (55)	less than 85
	M1097 M1097A2 M1113 M1114	HMMWV heavy variants, at 2/3 payload	Crew positions	up to 50 (31)	less than 85
				64(40)	88
				80(50)	92
				96(60)	98
	M1097	HMMWV heavy variant, at full payload	Crew positions	up to 40 (25)	less than 85
				96(60)	100
	M1008 M1009 M1010 M1028	Commercial utility cargo vehicle (CUCV)	In cab	below 88 (55)	less than 85
				88(55)	85 to 91

Photo	Model	Name, Condition	Location	Speed km/hr (mph) or	Sound Level dB(A)
	M1010	Ambulance	Patient Areas	all speeds	below 85
	M1080 chassis, includes M1078 M1079 M1081	Light medium tactical vehicles (LMTV 2 1/2 ton trucks), 2/3 payload	In cab	0 idle 72(45) 75(46) 88(55)	80 84 85 89
	M1092 and M1096 chassis, except M1089 wrecker	Medium tactical vehicles (MTV 5 ton trucks), 2/3 payload	In cab	0 idle 72(45) 75(46) 88(55)	80 84 85 89
	M1089	5 ton wrecker, towing, 2/3 payload	In cab	up to 48 (30) 56(35)	less than 85 87
	M984E1	Heavy Expanded Mobility Tactical Truck (HEMTT)	In cab	64(40) and below 72(45)	below 85 93.1
	M44A3 series includes M35A3 M35A3C M36A3	2 1/2-ton truck, extended life program (ESP), 2/3 payload	In cab	Idle 16(10) 32(20) 80(50)	72-81 85 87 97
	M1070	Heavy Equipment Transporter (HET), loaded	In cab	All speeds	Below 85
	M1074 M1075	Palletized load system, 16.5 tons	In cab, windows closed Windows open	All speeds 88(55) below 88(55)	85 or below 87 below 85

Photo	Model	Name, Condition	Location	Speed km/hr (mph)or	Sound Level dB(A)
	M113A3 family including M106A2 M1064A3 M1059A3 M58A3 M730A2 M901A3 M981A3	Armored Personnel Carrier A3 version. M113, M113A1, M113A2, OSV(BMP2) have similar noise levels		Idle 16(10) 32(20) 48(30) 63(40)	85-92 106 109 114 118
	M1A2, M1, M1A1 M1 chassis similar	Abrams tank Grizzly breacher, Wolverine Heavy assault bridge (HAB)	In vehicle	Idle Tac idl 16(10) 48(30) 63(40)	93 103 108 114 117
	M2A2 M2, M3, M2A1, M3A1, M3A2 similar	Bradley Fighting Vehicle	In vehicle	Idle 16(10) 32(20) 61(38)	74-95 110 115 115
	M88A2	Hercules recovery vehicle	In vehicle	various	89 to 106
	M270	Multiple Launch Rocket System (MLRS) vehicle	In vehicle	Idle Moving, various speeds	83-98 99 to 111
	M109A3E2 other versions similar	Paladin, 155 mm self propelled howitzer	In vehicle	Idle Moving, various speeds	83-98 99 to 111
	MEP-802A	5 kW Tactical Quiet Generator(TQG)	Operator panel	Rated load	80

Photo	Model	Name, Condition	Location	Speed km/hr (mph)or	Sound Level dB(A)
	MEP-803A	10 kW TQG	Op panel	Rated load	81
	MEP-804A	15 kW TQG	Op panel	Rated load	84
	MEP-805A	30 kW TQG	Op panel	Rated load	84
	MEP-806A	60 kW TQG	Op panel	Rated load	87
	CH-47D	Chinook helicopter	Cockpit		102.5
	UH-60A	Blackhawk helicopter	Pilot copilot		106 106
	YAH-64	Apache helicopter	Pilot copilot		104 101.3
	OH-58D	Kiowa helicopter	Right seat Left seat		101.6 100.3
	UH-1H	Huey helicopter	Pilot/copilot Max in rear		101.9 102.9

Section B-2

IMPULSE NOISE

Photo	Model	Name	Location	Sound Level dB(P)
	M16A2	5.56mm rifle	Shooter	157
	M9	9mm pistol	Shooter	157
	M249	5.56mm Squad Automatic Weapon (SAW) fired from a HMMWV	Gunner	159.5
	M60	7.62mm machine gun fired from a HMMWV	Gunner	155
	M2	0.50 caliber machine gun fired from a HMMWV	Gunner	153
	MK 19 Mod 3	machine gun fired from a HMMWV	Gunner	145
	M26	Grenade	At 50 ft	164.3
	M3	MAAWS recoilless rifle	Gunner	190
	M72A3	Light Antitank Weapon (LAW)	Gunner	182
		JAVLIN	Gunner open Position	159.9
			Gunner enlosed position & Gunner fighting position	166.2
				172.3

Photo	Model	Name	Location	Sound Level dB(P)
	M119	105MM towed howitzer at charge 8	Gunner	183
	M198	155mm towed howitzer firing M203 propellant	Gunner	178
	M109A5/6	Paladin, 155mm self propelled howitzer firing M4A2 zone 7 charge	In fighting compartment, hatches open except driver's	166.1
	M110A2	8-inch self propelled howitzer firing M106 projectile with a M188A1 zone 9 propelling charge,	Gunner	176.9
	M224	60mm mortar, M888 round, charge 4, QE 800 mil	0.5 m from the muzzle, 0.9 m above ground, 105 degree azimuth	185
		TOW II Missile from HMMWV	Gunner	179.4
	M29A1	81 mm mortar, M374A3 round with charge 4	1 m from the muzzle, 0.9 m above ground, 135 degree azimuth	178.8

CHARACTERISTICS OF INDIVIDUAL EQUIPMENT NOISE

The following paragraphs summarize additional noise exposure considerations for common Army equipment:

a. *Trucks and High Mobility Multi-wheeled Vehicles (HMMWV)*. Noise levels increase with increasing speed and, for the HMMWV, with increasing load. The levels are below 85 dBA at low to medium speeds and can be over 100 dBA at top speed for some models. When driven mostly at low speeds with short periods at moderate or high speed trucks and HMMWVs are not hazardous. They can be hearing hazards to unprotected Soldiers if operated for long time periods at high speed.

b. *Bradley Fighting Vehicle (BFV) and derivatives*. The major noise source is the drive train, particularly the action of the track links as they round over the sprockets, idlers and wheels. For this reason, high noise levels (101 to 115 dBA) occur when the vehicle is in motion. The crew wears the combat vehicle crewman's (CVC) helmet which has integral hearing protectors. A CVC with active noise reduction (ANR) providing added noise protection is available on newer models. The passengers (infantry squad) must rely on their own hearing protectors such as earplugs. These are less effective than the CVC with ANR. For training, the exposure time in moving carriers is restricted depending on the hearing protectors worn and the speed of the vehicle. The severest restriction is on exposure of passengers wearing the less effective earplugs.

c. *M113 Armored Personnel Carrier and derivative vehicles*. Among the loudest of Army equipment. Noise sources and hearing protection are similar to the BFV. Levels are very high when moving.

d. *Abrams Tank and derivative vehicle (Wolverine and Grizzly)*.

(1) Steady noise levels range from 96 to 117 dBA when moving. The crew wear the CVC helmet which has integral hearing protectors.

(2) On the tank, impulse noise levels at exterior commander and loader positions are above or just below the limit of hearing protector effectiveness for training depending on caliber (105 or 120 mm), cartridge model, and tube elevation. The drivers hatch should be closed at all times when firing the main gun. Training with crew heads above the hatch plane is not permitted per the user manuals for certain defined conditions. These restrictions are not applicable to battle situations.

e. *Helicopters*. In flight, helicopter crews wear the helicopter crew helmets which have integral hearing protectors. Passengers must rely on their own hearing protectors such as earplugs or ones supplied by the air operations. Training restrictions on exposure time apply, as discussed for the BFV.

f. *Generators*. Diesel powered generators form the Tactical Quiet Generator (TQG) series are quiet at the operator panel and other close-in areas if the covers are in place. Older generators

have been loud with levels above 100 dBA at the panel and above 85 dBA up to several meters away. High levels are generated by TQG if the covers are removed.

g. *Impulse noise from weapons.* All firearms produce impulse noise levels requiring hearing protection at crew positions for training. Some produce levels under certain conditions, which exceed the safe training limit for crews wearing hearing protectors.

(1) Small arms- rifles pistols, machine guns, and 40 mm grenades. Noise levels at gunner positions are low to moderate. The hazard can be serious because of the large number of rounds that can be fired by the individual shooter. Noise levels are higher in front and to the side of the muzzle than to the rear. For small arms levels at about 5 feet to the side can be higher than at the shooter position. Except very near the muzzle, all levels are within the mitigation capability of hearing protectors.

(2) Mortars. Noise levels range from low to very high because of the wide variation in charge increments and head locations. The requirement to load the cartridge through the muzzle places the head close to the muzzle, which is the source of the impulse. For the top charge on the large ground mount mortars, a safe noise level for training occurs only at 2 m from the muzzle, no higher than 0.9 m above ground. Some mortars include a funnel-shaped blast-attenuating device on the muzzle.

(3) Howitzers without fighting compartments. For the 155 mm towed and 8-inch self-propelled howitzers the levels are medium to high depending on the charge increment, but are below the training exposure limit for protected Soldiers.

(4) Howitzers with fighting compartments. For the 155 mm self propelled howitzers the walls of the fighting compartment tend to attenuate the peak levels but the reverberation within the compartment aggravate the noise exposure. For some higher charges the front, top, and side hatches should be closed during training fire.

(5) Tanks. The levels above the turret hatches can be very high for some cartridges and at some tube elevations. For these, training fire with crew heads above the hatch plane is not recommended. Levels below the hatch plane, even with the hatch open, are lower.

(6) Rocket launcher vehicles. Impulse noise in the MLRS, Avenger, and FOG-M launchers are low to medium.

APPENDIX C TERMS AND ABBREVIATIONS

Terms:

Decibel - unit of measurement for sound, abbreviated dB.

Frequency - is perceived by the listener as pitch. The unit of measure for frequency is Hertz (Hz). Humans can detect pitches ranging from 20-20,000 Hz.

Intensity- is perceived by the listener as loudness. Intensity is measured in decibels (dB). Decibels are normally referenced to a scale, such as dBA or dBHTL. The A scale is used for measuring noise, the HTL scale is used for measuring individual hearing ability. The term **SIL** indicates the speech interference level of background noise.

Threshold- Represents the softest sound level a listener can detect about 50% of the time the sound is presented. Human hearing is measured with an audiometer. The unit of measure for human hearing is dB (HTL) (Hearing Threshold Level). Audiometers usually measure hearing from 0 to 110 dial. 0 dB does not mean the absence of sound. It represents a reference of the softest sound level the human hearing mechanism can detect.

Ranges of Hearing

- -10 - 25 dB HTL Normal hearing
- 26 - 40 dB HTL Mild hearing loss
- 41 - 55 dB HTL Moderate hearing loss
- 56 - 70 dB HTL Moderately severe hearing loss
- 71 - 90 dB HTL Severe hearing loss
- 91 + dB HTL Profound hearing loss

Audiogram- A written representation of human hearing. Audiograms may be written in graph or serial format.

- **Serial** – Uses numbers in a table to depict thresholds. The forms used to record hearing thresholds for hearing conservation are serial audiograms.

DD2215 Reference audiogram, also called a baseline audiogram

DD2216 Periodic, Annual, Pre-/Post-deployment, 90-Day, Follow-up, Termination or Other audiograms

- **Graph** - Uses a graph to to depict threshold.

Abbreviations:

AHP – Army Hearing Program (as redefined in the RAR of AR 40-5)

BMSOs – Brigade Medical Supply Officers

DOEHRS-HC – Defense Occupational Environmental Health and Readiness System-Hearing Conservation

DOEHRS-DR – Defense Occupational Environmental Health and Readiness System-Data Repository

CAOHC – Council for the Accreditation in Occupational Hearing Conservation. Board certification (or military course equivalent) required for hearing technicians

CEPD – Communication Enhancement/Protection Device

HPOs – Hearing Program Officers/Non-Commissioned Officers, appointed by commanders at the unit level (i.e.; BDE, BN, CO)

HCP – Hearing Conservation Program

HPM – Hearing Program Manager

HCS – Hearing Conservation Services

HPDs – Hearing Protection Devices, traditional earplugs, ear muffs, canal caps, etc.

HR – Hearing Readiness

HRC – Hearing Readiness Classification

IHPM – Industrial Hygiene Program Manager

REM Sleep – rapid eye movement sleep, a state of sleep that recurs cyclically several times during a normal period of sleep and that is characterized especially by increased neuronal activity of the forebrain and midbrain, depressed muscle tone, dreaming, and rapid eye movements

SOP – Standard Operating Procedure

SRC/SRP – Soldier Readiness Processing Center, building 1042 on Fort Carson, located on O’Connell Drive

STS – Significant Threshold Shift - a change in an individual’s hearing levels. Can be positive (hearing has worsened) or negative (hearing has improved).

TOC – Tactical Operations Center

TSG – The Surgeon General

Evans ACH – Evans Army Community Hospital, Fort Carson, CO

APPENDIX D
EXAMPLES OF HAZARDOUS EXPOSURES

The following provides examples of typical exposures that meet the criteria for enrollment in a comprehensive Hearing Conservation Program:

1. Impulse & impact noise >140 decibels peak measurement (dBP):
 - a. All weapons firing, including blanks (annual or periodic).
 - b. 9-mm through 50-Caliber. Ammunition
 - c. Grenades
 - d. Mortar fire
 - e. Artillery fire
 - f. Armament from all tracked and wheeled combat vehicles
 - g. Demolition with explosives
 - h. Most training rounds and simulators

2. TWA of >85 A-weighted decibels (dBA):
 - a. Operating, occupying or maintenance operations of tactical vehicles that require hearing protection (per TM/FM or operator's manual).
 - b. Operating, occupying or maintenance operations of aircraft that require hearing protection (per TM/FM or operator's manual).
 - c. Operating on or around heavy equipment or noisy machinery requiring hearing protection (per TM/FM or operator's manual).

3. Known or suspected ototoxins (ear poison):
 - a. Arsenic
 - b. Carbon disulfide
 - c. Carbon monoxide*
 - d. Cyanide
 - e. Lead and derivatives
 - f. Manganese
 - g. Mercury and derivatives
 - h. N-hexane
 - i. Stoddard solvent
 - j. Styrene*
 - k. Trichlorethylene*
 - l. Tolulene*
 - m. Xylene*

*High-priority ototoxin

APPENDIX E
EARPLUG AND CARRYING CASE REQUISITION INFORMATION

STANDARD ITEMS:

Type & Size	Nomenclature	NSN	Fitting Requirements
Triple-flange (small) \$3.88 / package	Earplug, hearing protection, triple-flange 24 ea. / package (12 pair)	6515-00-442-4821	Small size fits (~10%) Size fitting REQUIRED (contact fitting POC below)
Quad-flange (regular size - fits most) \$69.97 / box	Earplug, hearing protection, quad-flange, 100 pair / box	6515-01-492-0443	Reg size fits most (~90%) Size fitting REQUIRED (contact fitting POC below)
Triple-flange (large) \$3.93 / package	Earplug, hearing protection, triple-flange 24 ea. / package (12 pair)	6515-00-467-0092	Large size fits (~5%) Size fitting REQUIRED (contact fitting POC below)
Sound Guard Foam Earplugs Hand-formed \$29.58 / box	Earplug, hearing protection, Foam, 200 pair / box (orange/green color)	6515-00-137-6345	Medium size fits most. Orange color must not show after insertion Disposable "back-up" use
Aearo SuperFit 30 Foam Earplugs Hand-Formed \$25.00 / box	Earplug, hearing protection, Foam, 200 pair / box (yellow / orange / yellow color)	Aearo#310-1009 www.GSAAdvantage.gov	For small ear canals. Orange fitting ring must not show after insertion. Disposable "back-up" use.
Aearo SuperFit 33 Foam Earplugs Hand-Formed \$27.00 / box	Earplug, hearing protection, Foam, 200 pair / box (yellow / orange / yellow color)	Aearo#310-1008 www.GSAAdvantage.gov	For large ear canals. Orange fitting ring must not show after insertion. Disposable "back-up" use.
Earplug Carrying Case \$7.61 / package	Earplug carrying case 20 / package	6515-01-100-1674	

OPTIONAL ITEMS:

Combat Arms (regular) \$369.77 / package	Combat Arms Earplug, (Double-ended) 100 ea. / package (50 pair) Requires user instruction sheet	6515-01-466-2710 Optional Item	Reg size fits most (~80%) Size fitting & Instruction sheet REQUIRED
Combat Arms (small) \$349.83 / package	Combat Arms Earplug, (Single-ended) 200 ea. / package (100 pair)	6515-01-512-6072 Optional Item	For smallest ears (~20%) Size fitting REQUIRED
Quad-flange (small) \$139.93 / package	Earplug, hearing protection, 4-flange, 200 ea. / package (100 pair)	6515-01-461-7931 Optional Item	Option for all small ears Size fitting REQUIRED

Example of Standard requisition:

SAMPLE ORDER FOR COMPANY SIZE UNIT (100-160 Personnel):

- 2 PG SM Triple flange (6515-00-442-4821) = \$ 7.76
- 2 Box Quad-flange (6515-01-492-0443) = \$139.94
- 2 PG LG Triple flange (6515-00-467-0092) = \$ 7.86
- 6 PG of Ear Plug Cases (6515-01-100-1674) = \$ 45.66
- 2 Box Sound Guard Foam Plugs (6515-00-137-6345) = \$ 66.42 (□ Always keep 2 boxes on hand)
- 1 Box Aearo SuperFit 30 (Aearo#310-1009 www.GSAAdvantage.gov) = \$ 25.00
- 1 Box Aearo SuperFit 33 (Aearo#310-1008 www.GSAAdvantage.gov) = \$ 27.00

Estimated Total Cost: = \$ 319.64

Note: Prices are estimations and may change.

Points of Contact:

Earplug Fitting and Instructions: Contact Fort Carson Hearing Program Manager at (719) 526-2939 or the Hearing Readiness Section at SRC (716) 526-6976.

APPENDIX F
HEARING READINESS CLASSIFICATION SYSTEM

<i>CLASS I</i>	Soldier's unaided hearing is within H-1 standards for both ears. No corrective action is required. (Standards are described in AR 40-501).
<i>CLASS II</i>	Soldier's unaided hearing is within H-2 or H-3 standards. Soldier has a current hearing profile assigned (H-2 or H-3), and a completed MOS/Medical Retention Board (MMRB) (H-3) with no active middle ear disease or medical pathology in the ear. If A Soldier wears hearing aids, he must have hearing aids appropriate for hearing loss and a six month supply of batteries. No corrective action is required.
<i>CLASS III</i>	Soldiers who do meet hearing readiness standards: Soldier's unaided hearing is within H-2 or H-3 standards and no current hearing profile assigned. Comprehensive audiologic examination is required to establish profile and/or need for hearing aids.
<i>CLASS IV</i>	Soldiers who do not have a DOEHS-HC audiogram in their medical record within one year. Soldier requires a hearing examination. This includes Soldiers without a reference baseline audiogram (DD Form 2215) or whose last periodic audiogram (DD Form 2216) is greater than one year old. Hearing readiness classification is unknown.
<p>Table Note: Soldiers in Class 1 and Class 2 will be considered fully ready. Soldiers in Class 3 or Class 4 are deficient. Soldiers in Class 3 or 4 at the time of medical record screening will immediately be reclassified in MEDPROS after obtaining corrective hearing/hearing aid services.</p>	

APPENDIX G
HEARING PROGRAM INSPECTION CHECKLIST

Fort Carson Hearing Program Checklist		Date(s) of Assessment	Tab number
Functional/Subordinate Area: Unit Hearing Program Officer / Motor Pool		Score	Checklist Effective Date: 28 Nov 2007
Assisting Office/Agency/phone number: Ft. Carson Hearing Program Mgr (HPM) @ 719-526-2939	Inspected Unit:	Inspector Name/ Phone:	
<p>References: AR 385-10, 1-4o.; AR 40-5; DA Pam 40-501; AR 600-8-101</p> <p>1. TASK (S): Hearing Readiness - To Conserve Hearing for Combat Readiness.</p> <p>2. CONDITION(S): In a garrison environment, given the assistance of hearing program personnel, achieve a Minimum of 70% or 70 points.</p> <p>STANDARDS: Commendable - Unit must attain a score of 96-100 points with no on-the-spot corrections. Satisfactory/Marginal - Unit must receive at least 70 points.</p> <p style="text-align: center;">Operational Hearing Conservation</p>			
Item		Inspector Comments	Points
1. Is a unit Hearing Program Officer/NCO (HPO) appointed on orders? Is he/she knowledgeable of the responsibilities involved with the mission (i.e.; completed HPO training offered by HPM)? Is there an alternate HPO trained? 5 Points			
2. Is a Hearing Program SOP and Command Emphasis letter available and signed by the current Commander? (Generic SOPs & letters are available on HCPM website, http://www.evans.amedd.army.mil/PM/hp.html) 5 Points			
3. Is there a electronic (CD) or hard copy binder containing all Hearing Program Regulations and Documents (see reference list above)? 5 Points			
4. Is the unit HPO able to access MEDPROS to assess unit compliance, either through own login, organic medical assets or the BDE Surgeon? 5 Points			
5. Does the unit HPO track all Soldiers as they in-process to ensure a <u>current</u> DD Form 2215/16 is completed and on record (either in medical record or available on MEDPROS)? Is there a unit in-processing checklist for new Soldiers that includes a hearing check and earplug fit check? 5 Points			

Item	Inspector Comments	Points
6. Is a functional system in place to monitor Hearing Readiness Classifications (1-4) of all Soldiers (i.e.; MEDPROS compliance reports)? 5 Points		
7. Are all Soldiers tested annually while in garrison or have pre-/post deployment(s) exams been completed within 6 months of movement? Is the unit participation rate for annual/pre/post-deployment testing 80 percent or more? (Units may contact Preventive Medicine 526-2939 or the Hearing Readiness section at SRP @ 526-6976 to schedule test sessions & earplug integrity checks). 10 Points		
8. Does the HPO track STS (significant threshold shifts aka decreased hearing) by <i>regularly</i> checking MEDPROS HRC reports for Soldiers with an HRC of 3 or 4B? Are Soldiers required to return <i>within 30 days</i> for follow-up testing? 10 Points		
9. Is there a unit policy that each Soldier will have one set of properly fitted pre-formed earplugs? Are Soldiers required to wear the earplug case on the LBE or ACU belt loop? 5 Points		
10. Have all noise hazardous equipment (including tactical vehicles) and work areas been identified and marked with proper danger signs and decals at eye level? 5 Points		
11. Are Soldiers working in or around posted noise hazardous areas required to use hearing protection at all times? Is there a consequence if caught without hearing protection in identified areas included in unit Hearing Program SOP (i.e.; negative counseling statement)? 10 Points		
12. Is hearing protection (noise muffs, replacement noise muff, CVC or SPH4 helmet seals, fitted pre-formed earplugs and three sizes of disposable hand formed earplugs) available at the unit? Is the supply sufficient for pending range/FTX operations? Is there a person at the unit that is <u>medically trained to fit earplugs</u> ? 10 Points		
13. Is there a unit Range / FTX SOP that requires the HPO to inspect and ensure Hearing Protection is worn properly before a Soldier is allowed to enter a live fire range / blank fire FTX / Urban / MOUT training center? (Example, prior to rodding a weapon, the HPO or Range Safety NCO will check earplugs first, if bad fit, Soldier is sent to back of line to re-insert his/her earplugs.) 15 Points		
14. Is documented Hearing Education training conducted annually? Is it documented IAW DA PAM 40-501, par. 8-1? (HPM can be contacted to deliver briefings or prepared briefings can be downloaded from website http://www.evans.amedd.army.mil/PM/hp.html .) 5 Points		

Green = ≥85 points, Amber = 70-85 points, Red = < 70 points

Total: _____

UNIT POC SIGNATURE _____ INSPECTOR SIGNATURE _____