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Army in Europe
Regulation 40-501

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Medical Services

Army Hearing Program–Europe

For the Commander:

KAI R. ROHRSCHNEIDER
Brigadier General, GS
Chief of Staff

Official:

DWAYNE J. VIERGUTZ
Chief, Army in Europe
Document Management

Summary. This regulation prescribes policy and procedures for the Army Hearing Program in Europe.

Precedence (*Vorrangigkeit*):

● This regulation was translated into German (that is, AE Reg 40-501-G). If discrepancies arise between AE Reg 40-501 and AE Reg 40-501-G, the provisions of AE Reg 40-501 take precedence for all employees except for local-national employees (glossary) in Germany employed under the provisions of the Collective Tariff Agreement II (CTA II)). For those employees, the provisions of AE Reg 40-501-G take precedence.

● *Diese Dienstvorschrift wurde ins Deutsche übersetzt (d.h. AE Reg 40-501-G). Sollten zwischen AE Reg 40-501 und AE Reg 40-501-G Abweichungen bestehen, so haben die Bestimmungen der AE Reg 40-501 Vorrang für alle Arbeitnehmer außer für ortsansässige Arbeitnehmer (glossary) in Deutschland, die entsprechend den Bestimmungen des TV AL II beschäftigt sind. Für diese Arbeitnehmer haben die Bestimmungen der AE Reg 40-501-G Vorrang.*

NOTE: AE Regulation 40-11 prescribes Army in Europe policy for providing occupational-health services (including hearing-protection services) to local-national employees in Germany. In cases of conflict between the two regulations, AE Regulation 40-11 will take precedence.

Applicability. This regulation applies to all "Army in Europe personnel" (glossary) who live and work in the USAREUR area of responsibility. This regulation is also applicable to other DOD military and civilian personnel who live or work on Army installations or are assigned to Army units in Europe.

Records Management. Records created as a result of processes prescribed by this regulation must be identified, maintained, and disposed of according to AR 25-400-2. Record titles and descriptions are on the Army Records Information Management System website at *https://www.arims.army.mil*.

Supplementation. Organizations will not supplement this regulation without approval of the Force Health Protection Branch, Office of the Command Surgeon (OCSURG), HQ USAREUR.

Suggested Improvements. The proponent of this regulation is the Force Health Protection Branch, OCSURG, HQ USAREUR (mil 537-3710). Users may suggest improvements to this regulation by sending DA Form 2028 to the OCSURG, HQ USAREUR, Unit 29351, APO AE 09014-9351.

Distribution. This regulation is available only electronically and is posted in the Army in Europe Library & Publishing System at *http://www.eur.army.mil/aepubs/*.

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Glossary

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1. PURPOSE

This regulation—

a. Prescribes the Army Hearing Program–Europe (AHP-E) according to the applicable U.S. law, DOD directives and guidance, and DA guidance.

b. Provides supplemental guidance to the Army Hearing Program (AHP) as well as information about the AHP and AHP-E that is unique to the Army in Europe (AE).

2. REFERENCES

Appendix A lists references.

3. EXPLANATION OF ABBREVIATIONS AND TERMS

The glossary defines abbreviations and terms.

4. RESPONSIBILITIES

a. The Office of the Command Surgeon (OCSURG), HQ USAREUR. The OCSURG, HQ USAREUR, on behalf of the CG, USAREUR, is responsible for prescribing overall policy and procedures for the AHP-E.

(1) The OCSURG, HQ USAREUR, will periodically prepare AE command memorandums (AE Reg 25-35, para 16b) for the CG, USAREUR, to sign in support of the AHP-E. These memorandums will be used to encourage command support of the AHP-E, announce new AHP-E requirements, and raise awareness of AHP-E procedures, particularly when compliance is lacking.

(2) The Force Health Protection Branch, OCSURG, HQ USAREUR, will coordinate implementation of AHP-E policy and procedures with the Army Hearing Program Manager for Europe (HPM-E), the Industrial Hygiene Program Manager for Europe (IHPM-E), and the Occupational Health Program Manager for Europe (OHPM-E) (who are appointed by the Commander, Public Health Command Europe (PHCE) (d below)), and other HQ USAREUR staff sections.

b. Chief, Safety Division, Office of the Chief of Staff, HQ USAREUR. According to AR 385-10 and DA Pamphlet 385-10, the Chief, Safety Division, will do the following in support of the AHP-E:

(1) Evaluate compliance with hearing-loss prevention requirements during standard Army safety and occupational health (SOH) inspections.

(2) Record and monitor incidents of hearing loss that are reportable under the Occupational Safety and Health Administration (OSHA) as an occupational illness (that is, repetitive trauma) or as a one-time acoustic trauma. The Safety Division will record these incidents on the OSHA log of injuries and illnesses, except when the loss of hearing is directly attributable to combat.

(3) Facilitate the resolution of safety issues related to hearing-loss prevention.

(4) Coordinate and consult with the HPM-E for any issues related to the AHP-E identified during USAREUR safety councils, advisory councils, or both.

c. Commanders of Army in Europe Units. Army in Europe commanders (that is, unit commanders), activity directors, and supervisors of all Soldiers and all civilians exposed to noise will—

(1) Endorse higher-level and local garrison memorandums that stress the importance of hearing-protection and prominently display their endorsement memorandum.

(2) Develop a standing operating procedure (SOP) for implementing the AHP-E in their units.

(3) Include the AHP-E and the requirement for a unit AHP-E SOP as an item of command interest in the organizational inspection program (OIP).

(4) Appoint, on orders, an individual (military or civilian) who is a staff sergeant, staff sergeant equivalent, or above to act as the unit hearing program (HP) officer. The HP officer is the responsible unit official for hearing readiness (HR) with the AHP-E responsibilities identified in paragraph 7d.

(a) Brigade and battalion-level units must appoint at least one HP officer.

(b) Geographically dispersed battalions will appoint at least one company-level HP officer at each distinct location to provide area coverage.

(5) Ensure their unit-level HP officers enforce the specific unit requirements of the AHP-E (para 7d) at their unit and the unit Soldiers and applicable civilian personnel comply with the specific individual requirements (para 7e) of the AHP-E.

d. The Commander, PHCE. In support of the AHP-E, the Commander, PHCE—

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

(2) Appoints the following on orders:

(a) A military audiologist as the HPM-E with the AHP-E responsibilities listed in paragraph 7a.

(b) An individual as the IHPM-E with the AHP-E responsibilities listed in paragraph 7b.

(c) An individual as the OHPM-E with the AHP-E responsibilities listed in paragraph 7c.

5. ARMY HEARING PROGRAM OVERVIEW

a. AR 40-501 prescribes the AHP, which comprises Army policy, strategies, and processes to prevent noise-induced hearing loss among U.S. Soldiers, DOD civilian employees (glossary) (that is, U.S. DOD civilian-service employees, local-national (LN) employees of the U.S. Forces (glossary), and DOD-contractor employees supporting the U.S. Forces). According to DA Pamphlet 40-501, paragraph 3-1, the AHP has the following four major components:

(1) Hearing readiness.

(2) Clinical hearing services.

(3) Operational hearing services (para 13).

(4) Hearing conservation.

b. On the advanced technology battlefield, Soldiers must communicate effectively, which requires normal hearing. Normal (good) hearing enables Soldiers and civilian employees to maintain critical situational awareness and effective oral communication in many different environments (for example, in combat, during field operations, in garrison, at industrial worksites, during military training). Hearing loss degrades mission capability, training effectiveness, and ultimately combat readiness. Good hearing is a proven combat multiplier that preserves the lethality and survivability of Soldiers and civilians.

c. Noise-induced hearing loss is one of the most prevalent injuries among DOD military and civilian personnel and represents a significant portion of the annual cost of service-connected-disability compensation. Hearing loss and the associated symptoms (for example, tinnitus) that qualify for permanent disability are in most cases preventable.

d. An under-recognized, yet commonly occurring component of the hearing-related threat to health is nuisance noise. Nuisance noise is any unwanted sound that interferes with communication or the ability to achieve restful sleep periods.

(1) Nuisance noise induces non-auditory effects that create stress and fatigue in dangerous combinations.

(2) Nuisance noise in garrison and workplace environments can also interfere with personnel hearing warning sirens or emergency signals and jeopardize the safety of all installation personnel.

(3) Acceptable nuisance-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).

(4) Intrusive nuisance-noise has been heavily researched. The strategies for controlling nuisance noise that resulted from this research can improve short- and long-term care of deployed and garrison-based Soldiers and civilian employees.

(5) Sufficient sleep cycles in rest areas that have limited ambient or nuisance-noise increase the immune system's ability to fight diseases, sustain keen perception ability, and preserve mental abilities and motor skills. Proper rest helps restore Soldiers to an alert, combat-ready condition.

(6) Reducing nuisance-noise levels makes communication (for example, face-to-face briefings, radio transmissions) easier, reduces stress levels, and increases the operating efficiency of all personnel.

e. Good hearing is sustained by preventing both temporary and permanent hearing loss and improving communication in noisy environments (that is, improving the signal-to-noise ratio) through a comprehensive unit hearing readiness and conservation program (HRCP) under the auspices of the AHP.

(1) According to DA Pamphlet 40-501 and because their military training requirements are known to be noise hazardous, all Soldiers are required to participate in the HR component of the AHP, which requires an initial reference and annual followup "audiograms" (glossary). Based on their current duty-assignment or a requirement to work in a hazardous-noise area, Soldiers may have additional requirements based on the hearing conservation (HC) component of the AHP.

(2) According to DA Pamphlet 40-501, Army civilian personnel will participate in a comprehensive unit HRCP when their occupational duties require exposure to hazardous noise, suspected ototoxins (ear poisons), or both. As part of the HR component of the AHP, Army civilian personnel participating in a unit HRCP must receive a reference audiogram as soon as possible and by no later than 30 days after initial exposure. Exposed personnel must also receive annual and termination audiograms.

f. Emphasizing HC and measures that prevent hearing loss supports the primary Force health-protection goal of the Army Medical Department. Prevention of hearing loss is also consistent with the Army Medical Department goal of preventing or eliminating disease and nonbattle-related injuries.

6. THE ARMY HEARING PROGRAM–EUROPE

a. The AHP-E comprises the same components (5a above) and essential elements ((1) thru (7) below) as the AHP (DA Pam 40-501). This regulation provides information about the procedures and services supporting these elements, by exception and specific to the Army in Europe.

(1) Noise-hazard identification.

(2) Engineering controls.

(3) Hearing protection.

(4) Hearing readiness and monitoring audiometry.

(5) Health education.

(6) Enforcement.

(7) Program evaluation.

b. DOD civilian employees and military personnel will be enrolled in a comprehensive unit HRCP when they are exposed to either of the following:

(1) Steady-state noise with a time-weighted average (TWA) of 85 A-weighted "decibels" (dBA) (glossary) or greater. Common sources of hazardous steady-state noise include aircraft, generators, and tactical vehicles. Appendix B, table B-1, provides the noise levels of commonly used models of Army equipment for reference and use in determining the exposure risk.

(2) Impulse noise of 140 decibels peak-measurement (dBP) or greater. Appendix B, table B-2, provides the noise levels of commonly used models of Army weapons.

NOTE: All current Army weapons exceed 140 dBP, even when firing blanks. Because all Soldiers must conduct weapons-qualification training annually, all Soldiers must be enrolled in a comprehensive unit HRCP.

(3) Airborne high "frequency" (glossary) or ultrasonic noise, regardless of duration, that meets or exceeds the applicable values listed in Appendix B, table B-5.

(4) Known or suspected ototoxins (ear poison) measured at one-half of the occupational exposure limit. Appendix C, table C-1 provides a list of potential ototoxins.

(a) An excessive exposure to a workplace ototoxin can, on its own, result in hearing loss.

(b) In combination with even marginal noise exposure, ototoxins can have a synergistic effect on hearing and cause more damage than a higher exposure to either single hazard. Activities where noise and ototoxins often combine include, but are not limited to construction, manufacturing (for example, metal, leather, petroleum products), painting, and printing.

c. According to the European Union (EU) Noise Directive (Directive 2003/10/EC), the DOD must offer AE LN employees a hearing-monitoring program (for the Army, that is the HR component of the AHP). Therefore, LN employees—

(1) May participate in the comprehensive unit HRCP when occupational noise levels exceed either 80 dBA TWA or 135 dBP.

(2) Must participate in the comprehensive unit HRCP when noise levels equal or exceed either 85 dBA TWA or 137 dBP.

d. Individual host-nation laws and regulations may apply more stringent conditions or differ from the EU standard in non-EU European nations. AE regional industrial hygienists can provide additional details on host-nation regulations that are applicable to the local area (that is, applicable to all DOD military and civilian employees (including LN employees)).

7. AHP-E ROLES AND RESPONSIBILITIES

a. HPM-E. The HPM-E manages and coordinates the AHP and AHP-E for the U.S. Army in Europe. The HPM-E is responsible for—

(1) Developing AHP-E policy recommendations, educational course standards, and SOPs that are adapted to the USAREUR area of responsibility (AOR) and meet or exceed the intent and regulatory requirements of the AHP.

(2) Providing guidance and support to regional "hearing program managers" (HPMs) (glossary) to ensure local regions comply with program policy, training standards, and procedures. The HPM-E will also help regional HPMs acquire resources and equipment necessary for program implementation. In addition to the HPM-E, the Army in Europe currently has two regional HPMs:

(a) HPM Bavaria. The HPM Bavaria is located in Vilseck, Germany, manages the AHP-E at the regional level, and is responsible for the AE sub-region that comprises the United States Army Garrison (USAG) Ansbach, the USAG Bavaria, the USAG Stuttgart, and the Kosovo Force AORs as well as supporting the United States Army Central Command AOR as required.

(b) HPM Rheinland-Pfalz. The HPM Rheinland-Pfalz is located in Kaiserslautern, Germany, manages the AHP-E at the regional level, and is responsible for the AE sub-region that comprises the USAG Benelux, the USAG Italy, the USAG Rheinland-Pfalz, and the USAG Wiesbaden AORs as well as supporting the United States Army Africa/Southern European Task Force AOR if required.

(3) Providing staff oversight of agencies that provide audiometric-monitoring services for all military personnel and for civilian employees who are exposed to noise or ototoxins. The HPM-E ensures agencies use only audiometric equipment, computer software, and guidance authorized by the "Defense Occupational Environmental Health and Readiness System–Hearing Conservation" (DOEHRS-HC) (glossary) program and according to DA Pamphlet 40-501, paragraph 4-2. The HPM-E will establish a standard SOP and validate local SOPs to ensure uniform processing at hearing test sites across the USAREUR AOR.

(4) Ensuring audiometric test records are maintained using authorized forms (that is, "DD Form 2215" (glossary) or "DD Form 2216" (glossary), which are generated by the DOEHRS-HC system) (not applicable to contractors). The HPM-E also ensures that all audiometric records are uploaded to the "Defense Occupational Environmental Health and Readiness System–Data Repository" (DOEHRS-DR) (glossary) for DOD-wide access (not applicable to contractors).

(5) Notifying appropriate personnel (for example, commanders, civilian supervisors, safety officers, unit HP officers, occupational health (OH) managers) when an individual has sustained a positive "significant threshold shift" (STS) (glossary) or permanent hearing loss that may endanger the individual and others. Notifications may include, but are not limited to, the need for an STS followup test with hearing technicians, a diagnostic evaluation with a provider, a physical profile (recorded on DA Form 3349 with appropriate recommendations for maximum remediation of risks), a referral to a medical retention board, and, if applicable, a written confirmation of a permanent hearing shift.

(6) Ensuring that medically certified personnel fit noise-exposed individuals with approved earplugs and re-verify the condition and fit of earplugs at least annually.

(7) Providing hearing-health education courses taught by subject-matter experts (SMEs) at least annually for all Soldiers and noise-exposed civilian personnel. The HPM-E will annually establish an AE standard training package for unit education.

(8) Coordinating, in collaboration with regional HPMs, standard certification courses for unit HP officers at brigades and battalions (also, if applicable, at geographically-separated companies and directorates) on a regular basis at locations across the theater.

(9) Providing guidance, unit status reports, and technical support for unit HP officers to accomplish their assigned responsibilities (d below).

(10) Providing the required AHP and AHP-E training for relevant regional courses such as the *Field Sanitation Team (FST) Certification* course (that is, course number CATC-FSTC at the Combined Arms Training Center (CATC), 7th Army Training Command (7th ATC)) or the *Safety Officer/NCO Course* (that is, course number CATC-SOC 40 at the CATC, 7th ATC).

(11) Coordinating required training for the AHP components of Army Tactical Communication and Protective Systems (TCAPSs) for units in the USAREUR AOR as directed by the Product Director–Soldier Systems Integration (PD SSI), Project Manager–Soldier Warrior (PM SWAR), Program Executive Office–Soldier (PEO Soldier).

(12) Managing the regional course schedule and providing workshops for unit medical personnel or support personnel who require national certification as U.S. Army hearing technicians. The HPM-E will ensure the course content meets or exceeds the standards established by the "Council for Accreditation in Occupational Hearing Conservation" (CAOHC) (glossary).

(13) Conducting announced or unannounced noise surveys and inspections of noise-hazardous areas, including in field environments (for example, field common areas, firing ranges, rest areas, TOCs).

(14) Training Soldiers to understand the nonauditory effects of nuisance noise and how to effectively use noise-abatement strategies (particularly in a field-training environment).

(15) Embedding with supported units, on request, during field and range exercises to determine practical solutions using a variety of equipment combinations and strategies to resolve difficult hearing-protection issues and communication requirements.

(16) Overseeing the AHP-E portion of the USAREUR OIP by providing AHP-E checklists that identify the standards for achieving passing ratings.

(17) Reporting program participation and progress metrics through the OCSURG, HQ USAREUR, to the CG, USAREUR, on a regular basis.

(18) Coordinating, on request, with compensation program administrators to review claims for occupational hearing loss. As part of this review, the HPM-E will provide consultation and send written comments through the local compensation program to the U.S. Department of Labor.

b. IHPM-E. In support of the AHP and the AHP-E, the IHPM-E will—

(1) Perform surveys of all known and suspected noise-hazardous areas and equipment and ototoxic exposures using approved and calibrated equipment, and will repeat the survey within 30 days after notification of any changes in equipment or worksite operation.

(2) Provide a survey report with pertinent recommendations for personnel to commanders, preventive-medicine personnel, OH nurses, and safety managers (as appropriate) following an initial evaluation or re-evaluation.

(3) Maintain a current list of all noise-hazardous areas using DD Form 2214 and the DOEHRS–Industrial Hygiene database, as applicable.

(4) Maintain a current list of all ototoxin-hazardous areas and operations.

(5) On an annual basis, provide the HPM-E a list of personnel who were exposed to high-intensity noise or ototoxins during that fiscal year. The list should identify personnel by name and an identification number (for example, common-access-card number (preferred), Social Security number (discouraged)), and specify the magnitude of the exposure and the location where the exposure occurred.

(6) Provide notification letters outlining noise-dosimetry results to supervisors, with instructions to provide a copy to the surveyed employee. The IHPM-E will forward an additional copy of the notification letter to the OH nurse to assist with tracking the employee in the unit HRCP, as necessary.

c. OHPM-E. In support of the AHP and the AHP-E, the OHPM-E will—

(1) Coordinate with the IHPM-E and HPM-E to identify and maintain a database of all DOD civilian employees that are exposed to ototoxins (measured at one-half of the occupational exposure limit) or high-intensity noise.

(2) Ensure DOD civilian employees being monitored in unit HRCPs are referred to the appropriate medical facility for placement, periodic, and termination audiometric evaluations and receive appropriate hearing-protection devices (HPDs). The OHPM-E will also—

(a) Refer DOD civilian-service employees for further evaluation of hearing as appropriate and provide appropriately trained personnel to fit DOD civilian-service employees with the proper size and type of HPDs.

(b) Ensure that contractor and LN personnel for whom the U.S. Government has specific contractual obligations for medical care are medically referred for appropriate audiometric monitoring (usually to a contracted local OH physician), are fit with HPDs by medically certified personnel, and receive annual hearing-health education that meets the AE training standard (if provided by an outside agency).

(3) During worksite visits, ensure that preformed earplugs and all other HPDs are checked for fit and any signs of deterioration.

(4) Provide appropriately trained personnel to incorporate education classes on hearing-loss prevention into the annual health-education training plan of the unit HRCP. The course content must meet or exceed the Army in Europe course standard established by the HPM-E (a(1) above).

d. Unit HP Officers. Unit HP officers will—

(1) Complete a unit-level HP-officer certification course provided by or coordinated through the AHP-E.

(2) Serve as the designated officials responsible for managing the hearing program and monitoring personnel HR at the unit level. HP officers may request guidance and technical support for implementing a comprehensive unit HRCP through the regional HPM or the HPM-E. The HP officer will also inform the unit commander of AHP-E requirements, provide the commander with regular updates for unit HRCP statistics, and ensure the unit complies with the following AHP-E unit-level requirements:

(a) Post and maintain noise-hazard danger and caution signs and decals for all identified areas and equipment according to AR 420-1 and DA Pamphlet 385-11.

(b) Enforce the mandatory use of HPDs for all personnel when around noise-hazardous areas and (request commanders) take appropriate action for noncompliance.

1. Provide all Soldiers and personnel exposed to noise a pair of preformed earplugs and the earplug carrying case and require them to maintain those items as individual equipment.

2. Require Soldiers to wear the earplug carrying case containing earplugs as part of the Army combat uniform (ACU) (universal camouflage pattern (UCP)) and ACU (operational camouflage pattern (OCP)) as prescribed by USAREUR (para 10a).

(c) Ensure Soldiers and noise-exposed civilian personnel complete annual, pre- and postdeployment, termination, and followup hearing evaluations as required.

(d) Ensure all Soldiers and noise-exposed civilian personnel complete annual hearing-health education briefings that meet or exceed the AHP-E training standard.

(e) Ensure medical-threat and predeployment briefings include noise-hazard descriptions and preventive measures (for example, hearing-protection requirements, noise-abatement strategies).

(f) Coordinate with the HPM-E and IHPM-E to properly identify positions that require working in noise-hazardous areas and annotate this requirement on job descriptions. Unit HP officers will ensure that annotated job descriptions include the requirement to wear personal protective equipment (PPE) (for example, HPDs) and noise-survey dosimeters when requested, and to report for scheduled medical examinations as required. They will enforce survey recommendations for mitigation of exposure risks.

(g) Notify employees about noise and ototoxic chemical exposure levels as needed and provide them copies of survey results and hearing program documents on request.

(3) Prepare a unit-level hearing-protection SOP for the commander’s approval. HP officers should also review the unit range SOP for inclusion of hearing-loss prevention procedures as necessary.

(4) Ensure unit compliance with AHP-E requirements for all OIP inspections.

(5) Monitor the unit data in the hearing-readiness module in the Medical Protection System (MEDPROS) on a monthly basis to screen the hearing-readiness classification (HRC) of all assigned personnel. Refer all Soldiers identified with a status of HRC class 4 (HRC-4) to the local hearing test site for completion of an annual, pre- or postdeployment, or other hearing test, as applicable.

(6) Ensure Soldiers identified with a significant change in hearing acuity (that is, an STS) return to the local hearing test site to complete required followup tests no sooner than 24 hours and no later than 30 days after initial identification.

(7) Coordinate the referral of Soldiers identified in MEDPROS with a status of HRC class 3 (HRC-3) for a diagnostic evaluation with an audiology provider, as required. HP officers may request support from regional HPMs or the HPM-E as needed to enter medical consultations and obtain provider appointments.

(8) Requisition and maintain an adequate supply of approved HPDs (with an appropriate range of sizes) for Soldiers and noise-exposed civilian personnel to maintain as an item of individual equipment. Approved HPDs comprise helmets, noise muffs, and preformed (that is, triple-flange, quad-flange, or nonlinear) earplugs. HP officers should ensure that all preformed earplugs are fit by medically certified personnel (including Rapid Fielding Initiative (RFI) team-issued nonlinear earplugs that are provided during predeployment preparations).

(9) Ensure the unit provides an approved earplug and carrying case, free of charge, to all personnel exposed to noise hazards. The unit should require Soldiers to wear earplugs and the earplug carrying case as part of the ACU (UCP) and ACU (OCP) as prescribed by USAREUR (para 10a).

(10) Ensure newly assigned personnel are properly fitted with an authorized HPD and have completed a hearing evaluation within the 6-month period before their arrival date or schedule the personnel for a hearing evaluation, as applicable.

(11) Maintain an adequate supply of approved handformed (orange and green foam) earplugs for visitors, for use as alternative HPDs for ranges or field exercises, or to temporarily replace lost or forgotten HPDs of unit personnel.

(12) Consult with the HPM-E or regional HPM for training on TCAPS and nonlinear earplug use as needed.

(13) Ensure all Soldiers and noise-exposed civilian personnel receive annual hearing-health education briefings. HP officers must send appropriate documentation of course completion to the HPM-E and maintain original course sign-in rosters in the unit records for 2 fiscal years for inspection purposes (para 12a(6)). Courses must meet or exceed the AHP-E established training standard.

(14) Provide information about noise hazards, hearing-injury prevention, HPD use, communication enhancement, and noise-abatement strategies relevant to the projected threat of the intended theater of operations to preventive-medicine and operations personnel for use in deployment medical-threat briefings. Recommended content and materials are available through the AHP-E.

(15) Ensure an equipment SME conducts semiannual inspections of helmets and noise muffs (for example, Combat Vehicle Crewman **(**CVC) helmets, Product Improved Combat Vehicle Crewman **(**PICVC) helmets, SPH4 (rotary-wing aircrew) helmets) to determine serviceability status.

NOTE: For these helmets to be effective at reducing noise, the chin strap must be fastened.

(16) Conduct periodic checks of maintenance and operational areas to determine if noise levels are increasing, areas are posted as noise-hazardous, and personnel are using HPDs. If noise levels have changed or new equipment is being used or emplaced, the HP officer should request a noise-hazard evaluation by the local industrial-hygiene office.

(17) Research new equipment during the unit's acquisition process to determine best options for lowering generated noise levels. (For example, when purchasing weedeaters, $20.00 more per weedeater may result in a tool that operates at less than 85 dBA.)

e. Soldiers and Noise-Exposed Civilian Personnel. All Soldiers and noise-exposed civilian personnel in the Army in Europe will—

(1) Report to hearing test sites for in- and outprocessing (includes placement and termination), pre- and postdeployment, and annual hearing examinations as directed by their unit. Personnel must also complete any necessary followup testing as directed by clinic personnel or unit HP officers.

(2) Maintain a pair of preformed earplugs and an earplug carrying case as individual items of PPE. Soldiers will wear the earplugs and carrying case as part of their uniform (para 10a).

(3) Correctly maintain and consistently wear approved and properly fitted HPDs when exposed to hazardous noise (for example, while conducting weapons firing, simulated training exercises (including when firing blanks), or military operations on urbanized terrain; while operating motorboats, motorcycles, power tools, or tactical vehicles).

(4) Report for hearing-health education briefings at least annually.

(5) Immediately report to their supervisor any suspected hearing loss resulting from weapons firing or exposure to blasts or explosions that occur in combat or training environments to facilitate appropriate medical attention.

8. NOISE-HAZARD IDENTIFICATION

a. As a part of the Army in Europe Industrial Hygiene Program (IHP-E) and the AHP-E, industrial-hygiene personnel will—

(1) Conduct noise surveys of all suspected noise-hazardous areas, vehicles, and equipment at least once before areas or equipment are used and within 30 days after any change in operating conditions that affect noise levels.

(2) Determine the 8-hour TWA sound level for all DOD civilian employees routinely working in hazardous-noise areas and military personnel working in hazardous-noise industrial-type operations at least once before the areas are used and within 30 days after any change in operating conditions that affect noise levels.

(3) Complete visits to each potentially noise-hazardous area at least annually according to AR 385-10 requirements. Annual visits may also be provided by SOH professionals (with a referral to industrial-hygiene personnel if new equipment or operating conditions are identified on site that could affect current noise levels).

b. Industrial-hygiene technicians or personnel trained to use noise-measurement equipment will—

(1) Perform noise surveys as required.

(a) United States Army Public Health Command (formerly, United States Army Center for Health Promotion and Preventive Medicine) Technical Guide 181 (USAPHC TG 181) provides guidance for performing noise surveys.

(b) DA Pamphlet 40-501, paragraph 7-5, provides information about survey equipment and calibration guidelines.

(2) Complete standardized reports that identify hazardous-noise survey results. Reports will be distributed and maintained according to DA Pamphlet 40-501, paragraph 3-2d.

c. DOD military and civilian employees may request a noise survey any time potentially noise-hazardous equipment is purchased or following any change in operating conditions. In addition, units may request previous noise-survey records for specific locations. Unit HP officers may contact the local industrial-hygiene office or the IHPM-E (mil 486-8237) for noise-survey requests or requests for previous noise-survey records.

d. Unit commanders and supervisors are responsible for ensuring that danger and caution signs and decals (including noise-contour warning signs ((2) below) are posted at entrances to, on the periphery of, and on noise-hazardous equipment and vehicles according to DA Pamphlet 385-11. In addition, units must post a copy of 29 CFR 1910.95 in all industrial, noise-hazardous areas.

(1) DA Pamphlet 385-11 provides general information and a list of references for specific commodities, hazardous materials, and operations.

(2) HP officers should request assistance from industrial-hygiene personnel to determine and define applicable 85 dBA and 140 dBP noise contours in order to advise the unit commander or supervisor about where to locate the appropriate contour signs.

9. ENGINEERING CONTROLS

The most desirable hearing-loss prevention measure is to reduce noise levels sufficiently at the source to eliminate harmful health effects.

a. The ideal opportunity to implement noise controls is at the time when the organization is procuring new equipment, facilities, or vehicles. The unit’s objective should be to review all acoustic specifications before a purchase to ensure, if possible, that a steady-state noise level of less than 85 dBA is achieved at all personnel work locations for normal operating conditions.

b. For existing equipment and facilities, units should employ control measures to reduce the noise level to the maximum extent possible such that—

(1) Steady-state noise levels are reduced to below 85 dBA.

(2) Impulse-noise levels are reduced to below 140 dBP.

c. According to AR 385-10 and DA Pamphlet 40-503, implementation of engineering controls may require funding that is normally provided through the USAG according to a prioritized hazard-abatement plan.

d. In some cases, simple maintenance of equipment, facilities, or vehicles provides sufficient engineering controls to eliminate or control the hazard.

e. DA Pamphlet 40-501, paragraph 7-10, provides more information about effective maintenance noise-control measures.

f. Unit HP officers may consult with an industrial hygienist for additional engineering-control recommendations and followup measures. The IHPM-E (mil 486-8237) can provide contact information for local industrial-hygiene personnel.

10. HEARING PROTECTION

Civilian personnel working in or visiting potentially noise-hazardous areas must have HPDs with them at all times. All military personnel stationed in Army in Europe units will wear the earplug case containing preformed or handformed earplugs (or, if applicable, another type of HPD) as a standard part of their uniform.

a. Locations for Wearing HPDs. There is no standardized location for civilian personnel or personnel in civilian attire to wear HPDs. Soldiers in the Army in Europe will wear HPDs (normally that is, earplugs and earplug case) on uniforms as follows:

(1) When wearing the ACU (UCP) and ACU (OCP) in garrison environments, on the right-front belt loop of the ACU trousers.

(2) When wearing the ACU (UCP) and ACU (OCP) in field environments with combat equipment, on the top-right row of loops of the outer tactical vest (protective vest).

(3) When wearing the Army aircrew combat uniform (A2CU) or the Nomex coveralls, in the left chest (upper) pocket or left arm pocket of the uniform or coveralls.

NOTE: For personnel using a nonstandard HPD (for example, pilots and aircrew using communication earplugs (CEPs)), carrying a second set of HPDs with a case is not required. The intent of the requirement (that is, maintaining accessibility) is met by carrying the CEP headset in the left chest (or upper) pocket of the A2CU.

b. HPD Types. HPDs comprise earplugs, noise muffs, ear-canal caps, noise-attenuating helmets, and combinations of these. In general, Army personnel may select the type of HPD desired, unless the selection is medically contraindicated or inappropriate for a particular noise-hazardous environment.

(1) Appendix D, table D-1 and table D-2, provide lists of HPDs (Army standard and nonlinear earplugs, respectively) approved for Government purchase by Army units.

(2) DA Pamphlet 40-501, paragraphs 7-16 and 7-18, provide more information about approved HPDs, including detailed descriptions and maintenance recommendations.

c. Requisition of HPDs. HPDs are required and considered mission-essential PPE for military deployments and for all personnel working in potentially noise-hazardous areas.

(1) Units will requisition and issue HPDs (at no charge to personnel) to all military personnel and all DOD civilian employees working in potentially noise-hazardous areas. Units must also provide an earplug carrying-case at no charge with each set of preformed earplugs. This case may also be used for handformed (temporary-issue) earplugs.

(2) HPDs are usually requisitioned as a class VIII supply item by unit supply personnel (that is, company supply sergeants or the battalion S4) using standard methods for requesting medical supplies.

(a) Appendix D, table D-1 and table D-2, provide more information (that is, national stock numbers (NSNs), Defense Medical Logistics Standard Support (DMLSS) (glossary) system item numbers, and product descriptions) to assist units with their requisitions.

(b) Units may also requisition HPD supplies as follows:

1. Directly from the United States Army Medical Materiel Center, Europe (USAMMCE), at *https://usammce-cust.amedd.army.mil/*.

2. Directly from the Government Services Administration (GSA) Advantage online shopping portal at *https://www.gsaadvantage.gov/advantage/main/start_page.do*.

3. Through their medical support units using the DMLSS system. DMLSS is an information-technology system that is part of the Defense Medical Logistics–Enterprise Solution.

(3) Units are required to maintain a sufficient supply of various sizes and types of HPDs to enable mission-appropriate fittings for all personnel. To account for the differences in ear-canal sizes among unit personnel while minimizing expense, preformed earplugs must be ordered in specific size ratios. Tables D-3 and D-4 provide examples of a typical HPD purchase for two types of military units.

(a) Table D-3 provides an example by earplug type and size of an earplug requisition for a table of distribution and allowances (TDA) unit using an average population size-fit.

(b) Table D-4 provides an example by earplug type and size of an earplug requisition for a modified table of organization and equipment (MTOE) or table of organization and equipment (TOE) unit using an average population size-fit.

d. Initial Fittings and Annual Integrity Checks. Medically certified unit HP officers will conduct preformed earplug fittings for Soldiers during inprocessing activities and for civilian employees during inprocessing, if applicable, or when requirements are identified. If Occupational Health Services entry physicals for DOD civilian employees are required, OH personnel will perform the fittings for those civilian employees.

(1) Units should conduct earplug fit re-verification and integrity checks during annual, predeployment, or postdeployment hearing evaluations.

(2) Units may request additional support for mass fittings, integrity checks, or both from the regional HPM or the local hearing test-site technicians, as needed. The HPM-E (mil 486-6034) can also provide the unit with appropriate POCs for fitting support at the unit's required location.

e. Protection Requirements. Civilian and military personnel must wear appropriate HPDs when working with or around equipment, tactical vehicles, or weapons that produce hazardous levels of noise. Appendix B, table B-1, table B-2, and paragraph B-3, provide information about the steady-state and impulse-noise levels produced by common items of military equipment. The following are the hearing-protection strategies that DOD Servicemembers and civilian employees must use at the defined hazardous noise levels:

(1) A steady-state noise level of 85 dBA or higher and lower than 103 dBA (regardless of duration). This noise level requires personnel to wear single hearing protection.

(2) A steady-state noise level of 103 dBA or higher and lower than 108 dBA (regardless of duration). This noise level requires personnel to wear double protection (that is, earplugs and a noise-attenuating helmet or earplugs and noise muffs). If the operational environment requires personnel to wear the ACU helmet and compatible noise muffs are not available, personnel must wear earplugs and comply with the time limits for daily noise exposure applicable to wearing earplugs and the ACU helmet (table B-3).

NOTE–Caution: The use of noise muffs precludes the use of most eyewear. If eye protection is required, a minimal break of the earmuff's circumaural cup (the enclosure around the ear) at the temples (by the eyewear) is strongly encouraged; however, any break of the earmuff seal will significantly reduce the amount of noise attenuation.

(3) A steady-state noise level of 108 dBA or higher and lower than 129 dBA. This noise level requires personnel to wear double hearing protection and comply with the time limits on daily noise exposure applicable to the wear of double hearing protection (table B-4).

(4) A steady-state noise level of 129 dBA or higher. The Surgeon General must approve any protection strategy for operations that expose personnel to this noise level.

(5) An impulse-noise level of 140 dBP or higher and lower than 165 dBP. This noise level requires personnel to wear single hearing protection.

(6) An impulse-noise level of 165 dBP or higher and lower than curve Z (MIL-STD 1474G, requirement four, fig 4-1). This noise level requires personnel to wear earplugs in combination with noise muffs or a noise-attenuating helmet.

(7) An impulse-noise level equal to or higher than curve Z. The Surgeon General must approve any protection strategy for operations that expose personnel to this noise level.

f. HPDs in Combat Environments. In combat, Soldiers should wear nonlinear HPDs, especially when firing weapons or riding in tactical vehicles or aircraft.

(1) Nonlinear HPDs improve HR and help prevent permanent hearing loss and "temporary threshold shifts" (TTSs) (glossary) while preserving the ability to communicate and to detect and localize quiet or low-level combat sounds.

(2) The RFI equipment list includes nonlinear earplugs (that is, either the Battle Plug from Moldex or the Combat Arms Earplugs from 3M). RFI-issued earplugs are typically shipped in bulk directly to the unit supply section in three sizes as part of the predeployment equipment draw. These earplugs must be fit to Soldiers by medically certified personnel (that is, unit HP officers who are AHP-E certified, hearing technicians, or regional HPMs).

(3) Commanders must ensure Soldiers and civilian personnel are trained on the proper insertion and use of nonlinear earplugs to ensure the personnel receive the benefits of a two-setting earplug. Unit HP officers must coordinate the required fittings and training for these nonlinear earplugs. Units can meet this requirement at the same time as the RFI issue takes place (with support requested from the regional HPM or hearing test-site technicians, if required) or shortly before deployment (for example, at the deployment processing center) by coordinating with regional AHP-E personnel or the HPM-E (mil 486-6034).

g. Communication Requirements in Combat Environments. In combat environments, Soldiers should wear approved Army nonlinear earplugs (currently that is, Battle Plugs, Combat Arms Earplugs, or the EP-3 Sonic Defender from Sure Fire) or TCAPS HPDs (if attenuated hearing is detrimental to mission requirements).

(1) TCAPS HPDs are electronic HPDs that improve situational awareness (by enhancing low-level sounds), employ active noise-reduction strategies to protect against hazardous-noise exposures, and typically interface with common military radio equipment to enable effective communication in high-noise environments. All TCAPS HPDs require advanced training before use.

(2) Currently, PEO Soldier, through the Army RFI Team, distributes Army-approved TCAPS HPDs. Appendix E provides information about current Army-approved TCAPS HPDs.

(3) The AHP-E (mil 486-6034) can help units requisition TCAPS HPDs and coordinate for training on using TCAPS HPDs.

11. HEARING READINESS AND MONITORING AUDIOMETRY

Hearing readiness focuses on ensuring Soldiers have the required physical capabilities, PPE (that is, HPDs), and medical equipment necessary for deployment, and is a key enabler of the HC component of the AHP for both Soldiers and civilian employees.

a. Monitoring Audiometry. The main enabler of Army HR is monitoring audiometry. A continuous program of monitoring audiometry establishes a hearing baseline for each individual and detects changes in an individual’s hearing sensitivity.

(1) Monitoring audiometry information helps medical personnel identify individuals who are highly susceptible to noise-induced hearing loss, to identify and intervene early after hearing injuries occur, and to evaluate the effectiveness of the AHP-E.

(2) All Army-conducted monitoring-audiometry hearing evaluations are completed using the DOEHRS-HC audiometer. Results are recorded on DD Form 2215 and DD Form 2216.

(3) To meet HR requirements (b and c below), unit HP officers may schedule unit personnel in groups for their DOEHRS-HC-certified hearing tests by contacting the local hearing test site and reserving blocks of time with the lead hearing technician or by directing personnel to use the normal walk-in hours established at each hearing test site. HP officers may request test sessions for company, battalion, or brigade-sized elements.

(4) If required, the HPM-E (mil 486-6034) can provide units POC information for regional hearing test sites.

b. Audiometry Requirements for DOD Civilian Employees. New or reassigned DOD civilian employees who have a potential for hazardous-noise exposure, exposure to ototoxins measured at one-half of the occupational exposure limit, or both must have a reference audiogram performed as soon as possible and no later than 30 days after an initial exposure. Appendix C provides additional information about noise and ototoxin exposure guidelines.

(1) If IHP-E noise surveys identify that DOD civilian employees should be enrolled in the HC component of the AHP (that is, the unit HRCP), Army in Europe Occupational Health Program (OHP-E) personnel will refer—

(a) DOD U.S. civilian-service employees to a Government hearing test site (or other appropriate hearing test site if necessary).

(b) Contractor and LN personnel for whom the U.S. Government has specific contractual obligations for medical care to an appropriate hearing test site (usually a non-Government, contracted, local OH physician).

(2) All civilian personnel exposed to high-intensity noise or ototoxins (except (3) below) must receive reference (baseline), initial (90-day), annual, and termination audiograms. As necessary, followup hearing tests (e below) must also be provided after any of these audiograms. Annual audiograms must be performed by 12 months after the last audiogram.

(3) Deaf civilian employees who are working in noise-hazardous areas must receive only reference and termination audiograms.

(4) Termination audiograms must be conducted as part of outprocessing or when a worker will stop working in a designated noise-hazardous area (for example, transferred between departments).

c. Audiometry Requirements for Soldiers. All Soldiers are noise exposed because of their Army-directed annual training requirements. All Soldiers (including those assigned to TDA units) must receive reference, pre- and postdeployment, annual, and termination DOEHRS-HC audiograms. Based on the test results, followup hearing tests (e below) may also be required after any of these audiograms.

(1) Annual audiograms must be performed within 12 months after the last audiogram.

(2) Predeployment audiograms must be performed within 6 months before the scheduled deployment date.

(3) Postdeployment audiograms must be performed within 6 months after the redeployment date.

d. HR and Deployable Status. To be deployable, Soldiers must maintain an HR status of HRC class 1 (HRC-1) or HRC class 2 (HRC-2).

(1) Table 1 provides the definitions for the four HRC classes.

(2) The following are the deployability statuses associated with the four HRC classes:

(a) Soldiers with a status of HRC-1 or HRC-2 are deployable.

NOTE: According to AR 40-501, a medical board is required only for a physical profile functional capacity (PULHES) (glossary) code of "H-3."

(b) Soldiers with a status of HRC-3A through HRC-3C are nondeployable and require a referral to an audiologist to complete a diagnostic evaluation and, if applicable, update the profile, or schedule a military medical review board (MMRB), military occupational specialty administrative retention review (MAR2) board, or both.

(c) Soldiers with a status of HRC-3D through HRC-3E are nondeployable because they require either a hearing-aid fitting, a 6-month supply of batteries for any issued hearing aids, or both.

Table 1
Hearing Readiness Classification System

HR Class	HRC Code	Definition
Class I	HRC-1	No corrective action is required. The Soldier has completed a hearing evaluation within the last 12 months, and unaided hearing is within the standards (AR 40-501) of profile class "H-1" for both ears.
Class II	HRC-2	No corrective action is required. The Soldier's unaided hearing is within the standards (AR 40-501) of profile class "H-2" or "H-3." The Soldier has a current hearing profile class of "H-2" or "H-3" assigned and a completed MMRB (for H-3 only) that showed no active middle-ear disease or medical pathology in the ear. If the Soldier wears hearing aids, the Soldier must possess hearing aids appropriate for the hearing loss and a 6-month supply of batteries.
Class III	HRC-3	A comprehensive audiologic examination is required to establish a profile, make a recommendation for an MMRB, or verify the need for hearing aids or TCAPS HPDs. MMRB is required only for H-3 profiles. The Soldier has completed a hearing evaluation within the last 12 months, however, unaided hearing is within the standards of profile class "H-2" or "H-3" and no current hearing profile is assigned.
Class IV	HRC-4	The HRC is unknown and the Soldier requires a hearing examination. The Soldier does not have a hearing evaluation (that is, a DOEHRS-HC audiogram) from within the last 12 months in the medical record. This includes Soldiers without a reference (baseline) audiogram (DD Form 2215) or whose last periodic audiogram (DD Form 2216) is older than 12 months.
NOTE: Soldiers with an HRC-3 or HRC-4 status at the time of medical-record screening will immediately be reclassified in MEDPROS after they obtain corrective-hearing or hearing-aid services.		

(d) Soldiers with a status of HRC-4 are nondeployable and require an annual hearing evaluation to determine their current HR status.

e. Followup Hearing Testing. The intent of monitoring audiometry is to identify hearing loss early, before the injury affects the performance level of the individual. Personnel who have sustained a potential injury or are identified on their annual, predeployment, or postdeployment hearing test with a worsening of hearing acuity will be identified as having an STS.

(1) When an STS is identified, the hearing technician will counsel the Soldier or civilian employee to return to the local hearing test site to complete a followup hearing test within a specific time period (that is normally, to return for testing no earlier than 24 hours after the first test that identified the STS and no later than 30 days after that test).

(2) The followup process includes two hearing tests, which can be done back-to-back on the same day to minimize interruptions to the unit mission or training schedule.

(3) The followup hearing tests with the hearing technician will determine whether the STS has resolved by itself or will require a referral to a provider for a more advanced diagnostic evaluation and possibly require rehabilitative services.

(4) The STS notification process includes notifications to unit commanders and unit HP officers.

(a) When an STS is identified, hearing technicians will send notifications about the individual to the company-level unit commanders, the unit HP officer, or both. These notifications may be sent by official mail (memorandum) or by encrypted e-mail directly to the commander or HP officer. The notification memorandum or e-mail will include instructions for completing the followup requirements.

(b) On a monthly basis, the HPM-E will send a unit-specific list of unit personnel who are identified with an STS to all major commands stationed in the USAREUR AOR. This report does not provide any detailed medical information. The report only makes recipients aware that a significant change in hearing has occurred for the identified individuals and that followup hearing tests are required. The HPM-E sends these lists to commanders and certified unit HP officers using encrypted e-mail.

1. These monthly lists are compiled from STS reports received from the DOEHRS-HC hearing test sites and are grouped by unit identification code (UIC) to enable units to more easily identify and manage the individuals assigned to their units.

2. The monthly list will include instructions for the unit to resolve the STS status either by referring the individual to a local hearing test site to conduct followup 1 and followup 2 tests or scheduling a diagnostic evaluation with a provider (if followup tests are complete and advanced care is required).

3. Unit command teams are expected to ensure that unit personnel make followup hearing tests a priority. Unit HP officers should coordinate the unit response by notifying the applicable personnel and ensuring they complete required hearing tests by checking with local hearing test sites.

a. To verify hearing-test completion, unit HP officers may request an updated "Positive STS Tracker" report for specific UICs from the hearing test site.

b. The hearing test-site technician may provide this report as a printout or as an attachment to an encrypted e-mail message.

f. Recordkeeping. The hearing test-site technician will provide Soldiers and DOD civilian employees a copy of their hearing-test results for their medical record. All DOEHRS-HC data is forwarded by hearing test-site personnel on a daily basis to the DOEHRS-DR, which is maintained at Aberdeen Proving Grounds, Maryland.

g. MEDPROS. The Army uses the MEDPROS HR module to track and monitor individual and unit-level HR (for Soldiers and DA civilian employees only). The DD Form 2215 and DD Form 2216 audiograms that are stored in the DOEHRS-DR are used to calculate individual and unit HR statuses for MEDPROS. The DOEHRS-DR provides the MEDPROS system a data update on a weekly basis.

(1) Unit HP officers can obtain unit-level HR reports through the MEDPROS "Hearing Readiness Reporting Options" function. The Army in Europe requirement is for units to maintain HR-status levels that meet or exceed 95 percent (that is, the number of personnel with a deployable status (that is, HRC-1 or HRC-2) meets or exceeds 95 percent of the unit's assigned strength) in accordance with occupational-safety goals and requirements (including annual DOEHRS-HC audiogram) as prescribed by the Chief of Staff, Army, in the All Army Activities Message (ALARACT) 24/2016.

NOTE: MEDPROS calculation algorithms have a known error that, in reports, may identify Soldiers who are assigned to TDA units and have at least one hearing test on file as compliant, even if that Soldier is noncompliant because the last test is more than 1 year old. Until this MEDPROS error is corrected, HP officers in TDA units must closely monitor MEDPROS report data and correct reports for the error.

(2) Unit HP officers can obtain copies of individual test results through the MEDPROS Web Data Entry portal or by requesting individuals to provide a copy ((3) below).

(3) Soldiers can obtain copies of their individual test results through their personal Army Knowledge Online (AKO) account.

NOTE: Table 1 and subparagraph d above provide explanations of the status codes used in test results.

h. Regional HPMs. Regional HPMs will ensure hearing-testing equipment, test methods, clinical services, diagnosis, medical (MEDPROS) codes, profile actions, referrals, and notification processes (including OSHA-reportable hearing losses) are standardized to ensure these actions and services are performed uniformly across the USAREUR AOR and according to DA Pamphlet 40-501.

12. HEARING-HEALTH EDUCATION

The AHP-E provides three educational courses (a thru c below) on a regular basis, each meeting a different regulatory requirement. These courses normally will vary in length and content based on the target audience.

a. Unit Hearing-Health Education Brief. This is an annual 1-hour training requirement for all military and noise-exposed civilian personnel. DA Pamphlet 40-501 (paras 4-7 and 7-19) and AE Regulation 350-1 (table B-1) provide additional information about instruction requirements and educational materials.

(1) Qualified instructors include the HPM-E, regional HPMs, certified unit HP officers, and local OH nurses.

(a) Unit HP officers receive training as SMEs for unit education in a "train-the-trainer" format during the Hearing Program Officer Certification Course (b below).

(b) Certified unit HP officers may teach the unit education themselves or opt to request a regional HPM, OH nurses, or the HPM-E to instruct the course. Noncertified HP officers must request assistance from a certified HP officer or other SME.

(2) Unit course content must meet or exceed the content of the AE standardized training package, which is available from the HPM-E. The HPM-E will provide unit HP officers the annually revised Army in Europe standardized course electronically to be used in unit health-education instruction.

(3) Unit HP officers will track unit accomplishments of the annual educational training requirement, coordinate support for unit instruction (for example, room reservations, training schedule, requests for the preferred instructor (for example, regional HPM, certified HP officer)), and, when complete, send appropriate documentation to the HPM-E to confirm the requirement was met.

(4) A unit meets the Army in Europe training requirement when 80 percent or more of all unit-assigned personnel have completed the standardized course each FY. The HPM-E is responsible for tracking and reporting this education metric for the USAREUR AOR.

(5) Unit HP officers may document course completion in either of the following ways:

(a) By sending scanned or electronic copies of course sign-in rosters to the HPM-E.

(b) By entering training records into the Army Digital Training Management System (DTMS) (*https://dtms.army.mil*) based on the sign-in rosters.

(6) Unit HP officers are required to maintain 2 FYs of original sign-in rosters in their unit records for verification of training during OIP or other inspections.

b. HP Officer Certification Course. This course is required for all civilians, noncommissioned officers and officers who are designated on orders to serve as the unit HP officer. AE Regulation 350-1, paragraph 4-12, provides more information about the course requirements.

(1) Qualified instructors are the HPM-E and regional HPMs.

(2) The course content includes the requirements and procedures for maintaining and monitoring unit HR, proper use of HPDs for training and deployments, the AHP-E portion of the OIP, nuisance-noise abatement strategies, and methods for preventing acoustic trauma. Additionally, this course provides information about the Army in Europe hearing-health-education standard, certifies HP officers to instruct annual hearing-health-education briefings, and certifies HP officers to conduct medical fittings of preformed earplugs.

(3) The HPM-E (mil 486-6034) can provide the current course schedule.

c. Hearing Technician Certification Workshop. This 40-hour course certifies Soldiers and civilian employees as qualified to complete all HR requirements, including the ability to conduct periodic hearing tests for supported personnel.

(1) Regional HPMs who are certified as course directors by CAOHC are qualified to teach this course.

(2) The course content must meet the standards of CAOHC and the AHP-E to qualify for national certification and ensure uniformity across the USAREUR AOR.

(3) The HPM-E (mil 486-6034) can provide information about the current course schedule and assistance with making course reservations.

13. OPERATIONAL HEARING SERVICES

The primary objective of operational hearing services (OHS) is to enhance Soldier survivability and lethality. Hearing is a critical sense that directly affects mission success. Training about OHS, usually conducted in garrison, should teach Soldiers to preserve the ability to hear in a deployed combat environment, which will help Soldiers to detect threats and communicate effectively in noisy environments. Instruction should include information about TCAPS HPDs as well as general noise-surveillance and noise-abatement strategies.

a. TCAPS. TCAPS HPDs are electronic systems with active filters that protect hearing in a combat environment while enhancing communication capabilities on radios and among team members during missions. Appendix E provides an overview of TCAPS HPDs currently in use by the Army.

(1) In FY 14, the PD SSI tested the TCAPS Program, which provides TCAPS equipment to units in fielding packages that include new equipment training normally conducted in coordination with local audiology support from the regional HPM.

(a) The Office of the G-3/5/7, HQDA, provides the TCAPS Program with the fielding and prioritization list. The HPM-E can provide units with information about the fielding schedule of TCAPS HPDs to Army in Europe units or how to procurement and use TCAPS equipment, as required.

(b) Training with TCAPS is paramount for maximizing the system's capabilities while developing an awareness of the differences in the acoustical environment. Units may contact the HPM-E (mil 486-6034) to schedule training using the newly-issued HPDs or sample TCAPS HPDs, if necessary.

(c) The HPM-E can also assist units who need to requisition TCAPS HPDs to ensure units use their limited funds in the best way to acquire appropriate types and quantities of HPDs and accessories.

(2) Commanders must ensure their unit personnel have an opportunity to train with TCAPS HPDs and understand their use and importance in maintaining effective communications and situational awareness. After procurement or unit fielding, units should distribute the TCAPS HPDs to the appropriate individuals to allow adequate familiarization. Because TCAPS HPDs are non-expendable items that are posted to the unit property book, units should use hand-receipts (that is, DA Forms 2062) to maintain accountability when distributing the TCAPS HPDs to the unit personnel.

b. Noise Surveillance and Abatement. Paragraphs 8 through 10 provide standard procedures for controlling and abating noise in areas with known hazardous-noise levels. Nuisance noise (para 5d), however, often is not recognized, addressed, or abated, but the physiological effects (for example, stress, fatigue) can be devastating on the Soldier, the unit, and the mission. Abatement of nuisance noise (e below) can reduce physical fatigue and improve Soldiers' operational effectiveness.

(1) Regional HPMs or the HPM-E can provide information about, training on, and assistance with nuisance-noise surveys and nuisance-noise abatement strategies. On request, the regional HPMs or the HPM-E can also provide unit preventive medicine personnel or HP officers recommendations for implementing noise-abatement strategies.

(2) Unit HP officers are also trained in basic abatement strategies (e below) during their required certification course and are responsible for implementing survey-report recommendations that are applicable to their unit.

c. Ideal Limits to Noise Levels. The following are the noise-level limits in a field environment that ideally allow for effective communications or operations:

(1) TOCs and Common Areas. Units should try to limit noise levels in TOCs and common areas to 55 dBA (that is, the speech-interference level (SIL) (glossary)) to preserve the ability to communicate comfortably at distances of up to 15 feet.

(2) Sleep Areas. Units should try to limit steady-state noise levels to 40 dBA to allow for sufficient rest during sleep cycles.

d. Intrusiveness of Noise. The effect of intrusive noise varies by noise source (for example, intermittent landings of rotary- and fixed-wing aircraft, tactical vehicles entering and leaving the compound), distance, and duration of exposure.

(1) The intrusiveness of these sounds can be predicted by using researched predictive curves of calculated sound-exposure levels (SELs).

(2) Figure 1 provides a predictive curve of sleep-disturbance percentages for various SELs of intrusive noise. For example, a UH-60 helicopter will produce up to 96 dBA of intrusive-noise inside a sleeping tent located 100 meters from the landing pad. The predictive curve estimates that this level of intrusive noise can be expected to awaken approximately 60 percent of the tent occupants.

e. Basic Abatement Strategies. To use some basic strategies for nuisance-noise abatement in a field environment, units should—

(1) Move electrical generators and other noise-generating equipment away from tents by using extension cables and air-conditioner extension hoses whenever feasible. The inverse-square law predicts that doubling the distance from a sound source decreases intensity (glossary) levels by 6 decibel (dB) (6 dB is the human perceptual equivalent of cutting the noise level in half).

(2) Place generators behind natural berms or enclose the generators on three sides with sand bags (leaving room for proper ventilation). The vented side of the generator (normally the loudest side of equipment) should always be pointed away from rest areas, sleeping areas, and other occupied workareas.

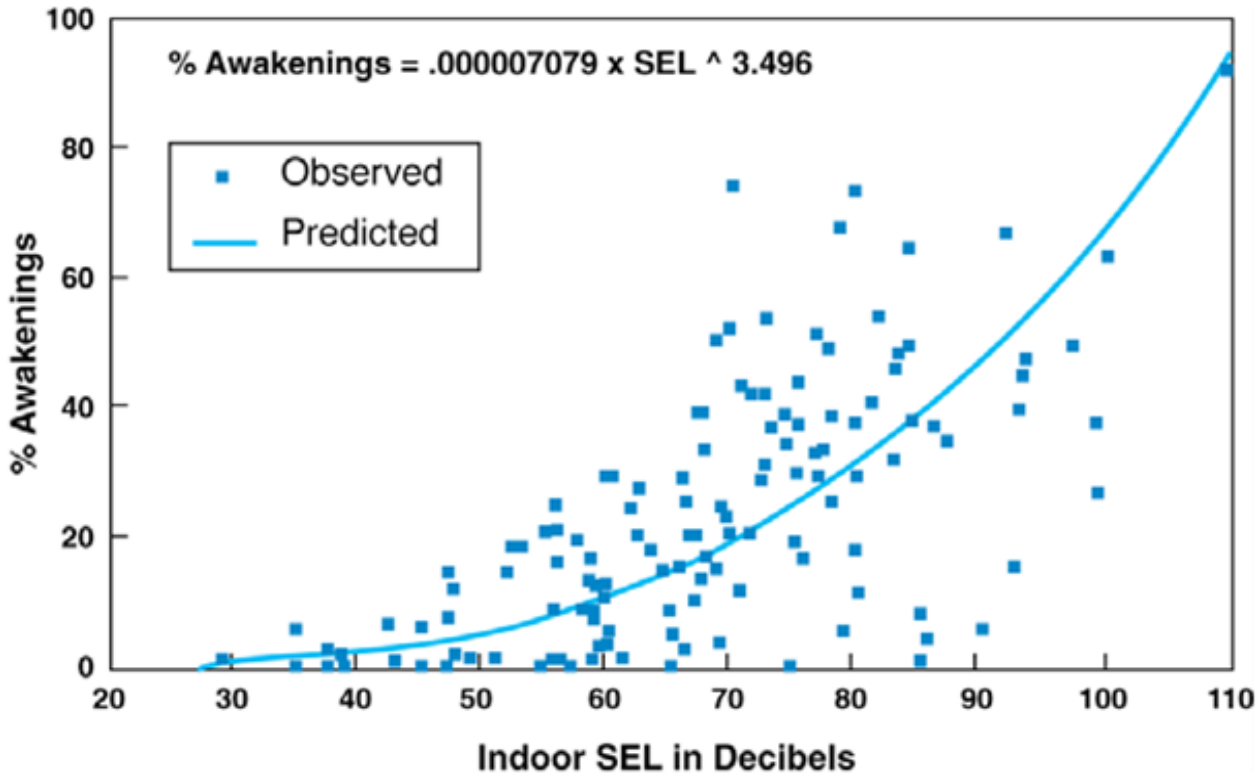

Figure 1. Sleep-Disturbance Predictive Curve

(3) Design the TOC layout for maximum communications efficiency (for example, lay out briefing areas away from radio workstations, segregate areas by using sound baffles).

(4) Separate or isolate sources of intrusive noise away from sleep tents and rest areas as much as space permits. If necessary, unit HP officers should also ensure Soldiers use their HPDs (or temporary foam earplugs) to reduce the effects of intrusive noise and maximize Soldiers' ability to achieve "rapid eye movement (REM) sleep" (glossary) (that is, restful sleep).

(5) In noisy environments with no other abatement option, use maskers or broadband noise (for example, fans) to ameliorate the adverse effects of relatively low-level intrusive noise (for example, intermittent field radio communications).

(6) Before a deployment is imminent, experiment and test various strategies to determine the ones that work best for their unit in a field environment, and then incorporate those strategies in unit SOPs.

14. NUISANCE NOISE IN THE GARRISON ENVIRONMENT

a. For safety reasons, nuisance-noise produced by vehicles (for example, excessive engine noise, loud music) or generated in post housing areas must be kept to a minimum to avoid interfering with others' ability to perceive warning sounds or emergency-vehicle signals.

b. Nuisance noise is generally a citable offense according to local ordinances (both on post and off post). Army in Europe command policy for Germany (AE Reg 190-1/CNE-CAN-C6F Inst 11240.6Y/USAFE/AFAFRICA Inst 31-202, para 5-5j and table 2-1) states that noise produced by a radio in a vehicle that can be heard at distances of 10 feet or more away from a vehicle (with windows rolled up) is excessive, and violators may be subject to the assessment of traffic points or appropriate disciplinary action.

15. ENFORCEMENT OF THE AHP-E

a. Command Emphasis. Unit commanders and supervisors of civilian personnel working in noise-hazardous areas must endorse the USAREUR command memorandum that emphasizes the USAREUR CG's support of the AHP-E, and publicly post their endorsement at appropriate locations (for example, unit bulletin boards, unit informational websites). Units should base their command emphasis memorandums on the USAREUR command memorandum, but tailor it to unit requirements.

b. Compliance Measures.

(1) Supervisors of military personnel and civilian employees who work in noise-hazardous areas must enforce the mandatory use of HPDs and may take corrective action, as appropriate, for noncompliance. Unit commanders should fully support efforts of unit safety officers and unit HP officers to comply with the AHP-E standards.

(2) The HPM-E or regional HPMs will conduct unannounced inspections of noise-hazardous areas (for example, motor pools, ranges) to ensure units comply with the requirement to wear HPDs and report inspection results through command channels as appropriate.

(3) The IHPM-E will inspect noise-hazardous workareas (during announced and unannounced industrial-hygiene surveys) to ensure units comply with AHP-E and HPD standards.

(4) In coordination with the HPM-E, the OCSURG, HQ USAREUR, will develop AHP-E compliance metrics for the USAREUR OIP, submit those metrics to the USAREUR G3/5/7 for inclusion in the USAREUR OIP standards, and maintain or modify those standards as required. Army in Europe OIP inspectors should specifically include the results of inspection portions that used the AHP-E metrics (compliance or noncompliance) in comprehensive OIP reports provided to unit commanders and staff at the conclusion of each inspection.

16. ACCESSING AHP-E PROGRAM SERVICES

The AHP, and therefore the AHP-E, are ultimately both an individual and organizational responsibility. All commanders are encouraged to use the resources and services the AHP-E provides to develop and maintain their own unit-level hearing program.

a. Additional operational hearing services (for example, preparatory assistance for OIP inspections, range consultations and surveys, worksite consultations, custom hearing-protection services, HP certification workshops) are available to all Army in Europe units on request.

b. The Office of the HPM-E (mil 314-486-6034, civ 0049-(0)6371-86-6034) can provide more information or assistance with accessing these services.

17. EVALUATING THE AHP-E

The OCSURG, HQ USAREUR, will continuously evaluate the AHP-E for improvement using both external and internal reports and metrics according to DA Pamphlet 40-501, paragraphs 10-2 and 10-3.

a. The HPM-E and regional HPMs will forward indicators of program effectiveness, quality assurance, and compliance to the OCSURG, HQ USAREUR, for consolidation and analysis.

b. The OCSURG, HQ USAREUR, will provide the CG, USAREUR, statistical summaries about the program on a quarterly basis to help evaluate program effectiveness.

c. Users and units with suggestions to improve the AHP-E may send those suggestions to the OCSURG, HQ USAREUR (para *Suggested Improvements*).

APPENDIX A
REFERENCES

SECTION I
REFERENCES

29 Code of Federal Regulations 1910.95, Occupational Noise Exposure

European Union Noise Directive, Directive 2003/10/EC of the European Parliament and of the Council, Minimum Health and Safety Requirements Regarding the Exposure of Workers to the Risks Arising from Physical Agents (Noise)

Military Standard (MIL-STD) 1472G, DOD Design Criteria Standard–Human Engineering (available from Defense Logistics Agency Assist Quick Search online at http://quicksearch.dla.mil/qsSearch.aspx using document ID: DI-SDMP-81472A NOT 2 or search by name)

DI-SDMP-81472A NOT 2 or search by name)

AR 25-400-2, The Army Records Information Management System (ARIMS)

AR 40-5, Preventive Medicine

AR 40-66, Medical Record Administration and Health Care Documentation

AR 40-501, Standards of Medical Fitness

AR 385-10, The Army Safety Program

AR 420-1, Army Facilities Management

DA Pamphlet 40-11, Preventive Medicine

DA Pamphlet 40-501, Army Hearing Program

DA Pamphlet 40-503, The Army Industrial Hygiene Program

DA Pamphlet 385-10, Army Safety Program

DA Pamphlet 385-11, Army Guidelines for Safety Color Codes, Signs, Tags and Markings.

All Army Activities Message (ALARACT) 24/2016, HQDA, DASG-HSZ, date-time group: 312021Z Mar 16, subject: ALARACT 024/2016 – Guidance for FY 16 Army Safety and Occupational Health Objective – Hearing Loss Rates

AE Regulation 40-11, Local National Employee Occupational Health Services Contract

AE Regulation 190-1/ CNE-CAN-C6F Inst 11240.6Y/USAFE/AFAFRICA Inst 31-202, Driver and Vehicle Requirements and the Installation Traffic Code for the U.S. Forces in Germany

AE Regulation 350-1, Training and Leader Development in Europe

United States Army Public Health Command (USAPHC) Technical Guide 181 (TG 181), Noise Dosimetry and Risk Assessment

NOTE: The USAPHC TG 181 is also still available and better known under the organization's and publication's former names: United States Army Center for Health Promotion and Preventive Medicine (USACHPPM) TG 181, Noise Dosimetry and Risk Assessment.

USACHPPM Technical Information Paper 51-003-0112 (TIP 51-003-0112), Noise Levels of Common Army Equipment, 3 January 2012 [no longer published or available, but source of data for app B]

USAPHC Fact Sheet 51-002-0713, Occupational Ototoxins (Ear Poisons) and Hearing Loss

NOTE: USAPHC publications are available at *https://phc.amedd.army.mil/Pages/Library.aspx*.

SECTION II
FORMS

DD Form 2214, Noise Survey

DD Form 2215, Reference Audiogram

DD Form 2216, Hearing Conservation Data

DA Form 2028, Recommended Changes to Publications and Blank Forms

DA Form 2062, Hand Receipt/Annex Number

DA Form 3349, Physical Profile

NOTE: AE and higher level forms are available through the Army in Europe Library & Publishing System (AEPUBS) at *http://www.aepubs.eur.army.mil/*.

APPENDIX B
NOISE LEVELS AND NOISE CHARACTERISTICS OF COMMON ARMY EQUIPMENT

B-1. NOISE LEVELS OF COMMON ARMY EQUIPMENT

Table B-1 and table B-2 provide the highest-measured typical values of steady-state-noise and impulse-noise levels for common Army equipment under normal operating conditions (data sourced from USACHPM TIP 51-003-0112).

a. These researched and validated values should be used only as a guide and cannot replace actual onsite measurements or field surveys.

b. Different test reports may list different guide levels for the following reasons:

(1) For most items of equipment, there may be several “normal” operating conditions. Each condition can generate a different noise level (for example, there is a 5 to 10 decibel (dB) difference in noise at the driver position of a truck depending on whether or not the window is closed or auxiliary equipment (heater fans) is used).

(2) Individual units of the same type of equipment may also vary based on the age and maintenance condition of the unit.

NOTE: The glossary provides abbreviations used in tables in this appendix.

Table B-1
Steady-State-Noise Levels of Common Army Equipment

Equipment Name	Model Numbers	Condition	Measured Location	Speed (kph (mph))	Sound Level (dBA)
HMMWV	M966, M996, M997, M998, M1037, and other nonheavy variants	At 2/3 payload	At crew positions	0 (idle)	78
				48 (30)	84
				88 (55)	94
HMMWV ambulance	M996, M997	At 2/3 payload	In patient area	Up to 88 (55)	Less than 85
HMMWV-heavy	M1097, M1097A2, M1113, M1114	At 2/3 payload	At crew positions	Up to 50 (31)	Less than 85
				64 (40)	88
				80 (50)	92
				96 (60)	98
	M1097	At full payload	At crew positions	Up to 40 (25)	Less than 85
				96 (60)	100
LMTV 2 1/2-ton trucks	M1080 chassis (M1078, M1079, M1080, M1081)	At 2/3 payload	In cab	0 (idle)	80
				72 (45)	84
				75 (46)	85
				88 (55)	89
MTV 5-ton trucks	M1092 and M1096 chassis (except M1089 wrecker)	At 2/3 payload	In cab	0 (idle)	80
				72 (45)	84
				75 (46)	85
				88 (55)	89

Table B-1
Steady-State-Noise Levels of Common Army Equipment—Continued

Equipment Name	Model Numbers	Condition	Measured Location	Speed (kph (mph))	Sound Level (dBA)
Abrams tank	M1 chassis: M1, M1A1, M1A2 (also includes, Grizzly breacher, Wolverine bridge)	Operating (stationary or moving)	In vehicle	Idle	93
				Tactical idle	103
				16 (10)	108
				48 (30)	114
				63 (40)	117
Armored Personnel Carrier	M113A3 family of vehicles	Operating (stationary or moving)	In vehicle	Idle	85–92
				16 (10)	106
				32 (20)	109
				48 (30)	114
				63 (40)	118
Bradley Fighting Vehicle	M2 chassis: M2, M3, M2A1, M3A1, M2A2, M3A2	Operating (stationary or moving)	In vehicle	Idle	74–95
				16 (10)	110
				32 (20)	115
				61 (38)	115
Hercules	M88A2	Operating	In vehicle	Various speeds	89–106
Paladin, 155 mm howitzer	M109A3E2	Operating (stationary or moving)	In vehicle	Idle	83–98
				Various speeds	99–111
Helicopter, Chinook	CH-47D	Operating	In cockpit	NA	102.5
Helicopter, Blackhawk	UH-60A	Operating	Pilot-copilot seats	NA	106
Helicopter, Apache	AH-64	Operating	Pilot seat	NA	104
			Copilot seat	NA	101.3
Helicopter, Kiowa	OH-58D	Operating	Right seat	NA	101.6
			Left seat	NA	100.3
Tactical Quiet Generator	MEP-802A, 5 kw	Operating at rated load	At operator panel	NA	80
	MEP-803A, 10 kw				81
	MEP-804A, 15 kw				84
	MEP-805A, 30 kw				84
	MEP-806A, 60 kw				87

Table B-2
Impulse-Noise Levels of Common Army Equipment

Equipment Name	Model Number	Measured Location	Sound Level (dBP)
Rifle, 5.56 mm	M16A2	Shooter position	157
Pistol, 9 mm	M9	Shooter position	157
Machine gun, SAW, 5.56 mm	M249	Gunner position (fired from a HMMWV)	159.5
Machine gun, 7.62 mm	M60	Gunner position (fired from a HMMWV)	155
Machine gun, 0.50 caliber	M2	Gunner position (fired from a HMMWV)	153
Machine gun, grenade-launcher, 40 mm	MK 19 Mod 3	Gunner position (fired from a HMMWV)	145
Grenade, hand fragmentation	M26	At 50 ft from detonation	164.3
Recoilless rifle, MAAWS	M3 Carl Gustav	Gunner position	190
Mortar, 60 mm	M224	At 0.5 m from muzzle and 0.9 m above ground [105 deg az] (M888 round, charge 4, QE 800 mil)	185
Mortar, 81 mm	M29A1	At 1 m from muzzle and 0.9 m above ground [135 deg az] (M374A3 round, charge 4)	178.8
Light anti-armor weapon	M136 AT4	Gunner position	179–190
Missile, anti-armor, man-portable, JAVELIN	FGM-148, JAVELIN	Gunner position (open position)	159.9
		Gunner position (enclosed position)	166.2
		Gunner position (fighting position)	172.3
Missile, anti-armor, wire-guided, TOW II	TOW II	Gunner position (fired from a HMMWV)	179.4
Howitzer, 105 mm, towed	M119	Gunner position (firing at charge 8)	183
Howitzer, 155 mm, towed	M198	Gunner position (firing M203 propellant)	178
Howitzer, 155 mm, self-propelled, Paladin	M109A5/6	In compartment (with hatches open [except driver], firing M4A2 zone 7 charge)	166.1

B-2. NOISE CHARACTERISTICS OF COMMON ARMY EQUIPMENT

Subparagraphs a through i below provide more information about the noise characteristics and noise-exposure considerations for the common Army equipment listed in tables B-1 and B-2.

a. Trucks and High Mobility Multipurpose Wheeled Vehicles (HMMWVs). The noise levels of trucks increase with increased speed and, particularly for the HMMWV, with increased load. The noise levels are below 85 A-weighted decibels (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 or for only short periods (that is, less than 2 hours) at moderate or high speeds, trucks and HMMWVs are not hazardous to hearing. Operating trucks for longer periods or constantly at a high speed can present hearing hazards, particularly to Soldiers not wearing hearing-protection devices (HPDs).

b. Abrams Tank and Derivative Vehicles (for example, Wolverine, Grizzly). The steady-state noise levels for the Abrams tank range from 96 to 117 dBA when the vehicle is moving.

(1) The crew must wear the Combat Vehicle Crewman (CVC) helmet or the newer model CVC helmet (that is, the Product Improved Combat Vehicle Crewman (PICVC) helmet with active noise-reduction (ANR), which provides additional noise protection). Both the CVC and the PICVC have integrated hearing protection.

(2) At the exterior commander and loader positions, the peak impulse-noise levels (during main gun firing) are above or just below the limit of HPD effectiveness (depending on the cartridge model being fired and the gun-tube elevation).

(3) The driver's hatch should be closed at all times when the crew is firing the main gun.

(4) For certain defined conditions (according to user manuals), crews are not permitted to conduct training with the crew's heads above the hatch plane. These restrictions are generally not applicable to the combat environment.

c. Armored Personnel Carrier (APC) M113A3 and Derivative Vehicles. The M113A3 APC is among the loudest items of Army equipment. The noise-levels for the M113 APC are very high (that is, from 106 dBA up to 118 dBA) when the vehicle is moving. The noise sources and hearing-protection requirements are similar to those of the Bradley Fighting Vehicle (BFV) (d(1) thru (3) below).

d. BFV and Derivatives. The major noise source of the BFV is the drive train (particularly the action of the track links as they pass around and over the sprockets, idlers, and wheels). For this reason, the BFV generates a high noise level (that is, from 101 dBA up to 115 dBA) when the vehicle is moving.

(1) The BFV crew must wear the CVC helmet or the PICVC helmet with ANR.

(2) The passengers (that is, the infantry squad) normally must rely on their own individual HPDs (for example, earplugs) and the Army advanced combat helmet (ACH). This equipment is much less effective at noise reduction than the PICVC with ANR.

(3) During training activities, the exposure time in moving carriers is restricted depending on the types of HPDs being worn and the speed of the vehicle. For passengers (wearing ACHs and less effective earplugs), the exposure time is the most restricted.

e. Towed Howitzers (Without Fighting Compartments). The steady-state noise level for the 155-mm towed howitzer is generally dependent on the towing vehicle being used (a above). The impulse-noise levels for the 155-mm towed howitzer are medium to high (up to 178 dBP) and depend on the charge increment being fired, but normally are below the training exposure limit for protected Soldiers.

f. Self-Propelled Howitzers (With Fighting Compartments). The steady-state-noise level for the 155-mm self-propelled howitzer is similar to the BFV (that is, from 101 dBA up to 115 dBA). The impulse-noise level for the 155-mm self-propelled howitzer tends to be attenuated from peak levels by the walls of the fighting compartment (up to 166 dBP), but the reverberation within the compartment aggravates the overall noise exposure. For some higher charges, the crew must close the front, top, and side hatches during training fire.

g. Helicopters. In flight operations, helicopter crews must wear helicopter crew helmets, which have integrated hearing protection. Passengers normally must rely on their own individual HPDs (for example, earplugs) or temporary HPDs supplied by the air-operations personnel or aircrew. During training (similar to the BFV (c(3) above)), the exposure time of personnel in helicopters is restricted depending on the type of HPDs being worn.

h. Generators.

(1) If the acoustic-panel covers are closed, the steady-state noise levels of diesel-powered generators of the Tactical Quiet Generator (TQG) series at the operator panel and other adjacent areas are normally low (that is, less than or equal to 80 dBA).

(2) The steady-state noise levels of the newer Advanced Medium Mobile Power (AMMP) series of generators are similar to those of the TQG series.

(3) The steady-state noise-levels of older (non-acoustically suppressed) generators have been measured at levels exceeding 100 dBA at the control panel and above 85 dBA at distances of up to several meters away.

(4) If their acoustic-panel covers are removed, the TQG-series and AMMP-series generators can also produce high steady-state noise levels (similar to older generators ((3) above)).

i. Impulse-Noise Levels From Weapons Fire. All Army firearms generally produce impulse-noise levels that require the use of HPDs at the individual or crew positions during training. Additional firing restrictions are often associated with howitzers, mortars, and shoulder-fired weapons. Under certain conditions, some weapons can produce levels that exceed the safe limit for crews wearing HPDs. Users should familiarize themselves with and closely follow the published Army doctrine for the individual weapon to prevent unnecessary exposures to unsafe noise levels.

(1) Small Arms (Machine Guns, Pistols, Rifles) and 40-mm Grenade Launchers. The impulse-noise levels at the gunner positions are normally relatively modest and, except for very close to the muzzle, all impulse-noise levels are within the mitigation capability of Army-issued HPDs.

(a) The overall noise-exposure hazard for small arms can still be a serious concern because of the large number of rounds that may be fired by an individual.

(b) Users should also note that the impulse-noise levels of small arms are higher in front and to the side of the muzzle than to the rear. Impulse-noise levels at 5 feet to the side can be higher than at the firing position. During training, users should plan the layout of their firing positions to account for this noise hazard as much as possible.

(2) Mortars. The impulse-noise levels for mortars range from low to very high because of the wide variation in charge increments and the proximity of the crew to the muzzle. If the greatest possible charge is used when firing large ground-mounted mortars, the crew must be more than 2 meters away from the muzzle and no higher than 0.9 meters above the ground to be at a safe noise level (while wearing HPDs). Some mortars include a funnel-shaped blast-attenuating device on the muzzle, which may lower impulse noise levels.

B-3. DAILY STEADY-STATE-NOISE EXPOSURE LIMITS

a. Tables B-3 and B-4 provide the steady-state-noise exposure limits for daily exposure periods for personnel who are wearing the Army ACH with earplugs and double hearing protection, respectively.

Table B-3
Steady-State-Noise Exposure Limits While Wearing the ACH with Earplugs

Noise Level (dBA)	Exposure-Time Limit per Daily Period
106	4 hours
109	2 hours
112	1 hour
115	30 minutes
118	15 minutes
121	7 minutes and 30 seconds
124	3 minutes and 45 seconds

Table B-4
Steady-State-Noise Exposure Limits While Wearing Double Hearing Protection

Noise Level (dBA)	Exposure-Time Limit per Daily Period
111	4 hours
114	2 hours
117	1 hour
120	30 minutes
123	15 minutes
126	7 minutes and 30 seconds
129	3 minutes and 45 seconds

b. Table B-5 provides the noise-exposure intensity limits for airborne high-frequency (ultrasonic) noise.

Table B-5
Airborne High-Frequency (Ultrasonic) Noise-Exposure Limits

One-third Octave Band Center Frequency (kilohertz)	One-third Octave Band Level Intensity Limit (dB)
10	80
12.5	80
16	80
20	105
25	110
31.5	115
40	115
50	115

NOTE: For the identified center frequency of the noise, personnel may not be exposed for any duration of time to an intensity level that exceeds the associated intensity limit.

APPENDIX C
EXAMPLES OF HAZARDOUS-NOISE EXPOSURES

This appendix provides information about the noise-exposure levels and types of materials (that is, ototoxins (ear poisons)) that require enrollment of exposed personnel in a comprehensive unit hearing readiness and conservation program (HRCP).

C-1. NOISE EXPOSURES REQUIRING ENROLLMENT IN A UNIT HRCP

Paragraphs a and b below provide examples of typical Army noise exposures that require enrollment of exposed personnel in a comprehensive unit HRCP:

a. Impulse-Noise (Impact-Noise) Levels Exceeding 140 Decibels Peak-Measurement. The following are examples of this level of impulse noise:

(1) All individual weapons firing (annual or periodic) using current Army weapons and specifically all weapons firing using 9-mm through .50-caliber ammunition.

(2) Grenade explosions (from grenade-firing weapons or hand-thrown grenades).

(3) Mortar fire.

(4) Artillery fire.

(5) Armament fire (from all tracked and wheeled combat vehicles).

(6) Demolitions explosions.

(7) Most training rounds and simulators.

b. Any Noise With a Time-Weighted Average of More Than 85 A-Weighted Decibels. The following are examples of this level of impulse noise:

(1) Operating, riding in, or performing maintenance operations on tactical vehicles that require hearing protection according to the applicable manuals (for example, technical manuals (TMs) (that is, operators' manuals, unit-level maintenance manuals, higher-level maintenance manuals), field manuals (FMs)), Army doctrine, the unit standing operating procedure (SOP)).

(2) Operating, riding in, or performing maintenance operations on aircraft that require hearing protection according to the applicable manuals (for example, TMs (as in (1) above), FMs, Army doctrine, the unit SOP).

(3) Operating, riding in, performing maintenance operations on, or performing other operations around heavy equipment or noisy machinery that require hearing protection according to the applicable manuals (for example, TMs (as in (1) above), FMs, Army doctrine, the unit SOP).

C-2. OTOTOXIN EXPOSURES REQUIRING PARTICIPATION IN A UNIT HRCP

Exposures to known or suspected ototoxins (ear poisons) measured at one-half of the occupational exposure limit require enrollment of exposed personnel in a comprehensive unit HRCP.

a. Table C-1 provides a list of known or suspected ototoxins typically in use throughout the Army.

Table C-1
Typical Known or Suspected Ototoxins

Ototoxins
Arsenic
Carbon disulfide
Carbon monoxide*
Cyanide
Lead and derivatives
Manganese
Mercury and derivatives
N-hexane
Stoddard solvent
Styrene*
Trichlorethylene*
Tolulene*
Xylene*

NOTE: The "*" identifies high-priority ototoxins. High-priority ototoxins are those that present the most severe hazards to hearing health.

b. If chemicals listed in table C-1 are present or in use at a unit worksite, the unit should consult with the local industrial-hygiene office to ensure the unit is using appropriate precautionary measures.

APPENDIX D
INFORMATION FOR REQUISITIONING HEARING-PROTECTION DEVICES

D-1. INFORMATION FOR REQUISITIONING HEARING-PROTECTION DEVICES

This paragraph provides technical supply-system information for ordering hearing protection devices (HPDs) (that is, Army standard earplugs, standard headsets, and nonlinear earplugs).

NOTES: 1. The glossary provides abbreviations used in tables in this appendix.
2. Prices in tables in this appendix are planning figures that were accurate only as of the date of this publication. Current prices may vary.

a. Table D-1 provides information for units to use for requisitioning the current Army standard earplugs and the Army standard tactical headset. Figure D-1 provides pictures of these HPDs.

Table D-1
Requisitioning Information for Army Standard Earplugs and the Standard Tactical Headset

Type	Size	Price (Qty)	NSN (DMLSS / GSA: #)	Nomenclature	Fitting Estimate (% of population)
Triple-flange earplugs	sm	$6.63 (12 pr/pg)	6515-00-442-4821 (NA)	Plug, ear, 24S (small, green, 3-flange)	Fits ~10–20%. Size fitting required.
Triple-flange earplugs	med	$6.51 (12 pr/pg)	6515-00-442-4818 (NA)	Plug, ear, regular, (orange, 3-flange)	Fits ~75–80%. Size fitting required.
Triple-flange earplugs	lg	$6.65 (12 pr/pg)	6515-00-467-0092 (NA)	Plug, ear (large, blue, 3-flange)	Fits ~5–10%. Size fitting required.
Quad-flange earplugs	sm	$123.17 (100 pr/pg)	6515-01-461-7931 (FUS30SHPX100)	Plug, ear, medium, green, 4-flange (Howard-Leight)	For small sizes ~20%. Size fitting required.
Quad-flange earplugs	sm–med	$76.59 (100 pr/pg)	6515-01-492-0443 (28570EP401)	Earplug, EP-401 medium (Quattro, 4-flange, uncorded, blue)	Fits small–medium between-size ~20%. Size fitting required.
Quad-flange earplugs	med	$76.66 (100 pr/pg)	6515-01-492-0458 (28570EP411)	Earplug, EP-411 medium (Quattro, 4-flange, corded, blue)	Nominally universal ~80%, but size fitting required.
Foam earplugs, handformed	NA	$35.00 (200 pr/bx)	6515-00-137-6345 (GSA: use NSN)	Earplug, foam, orange-green	Universal. Size fitting not required. [1,2]
Foam earplugs, handformed	lg	$26.54 (200 pr/bx)	NA (GSA: 3101008)	E-A-R earplug, 3M Superfit 33, large, foam, yellow-orange-yellow	Fits large sizes ~5%. Size fitting not required. [1,2]
Foam earplugs, handformed	sm	$24.65 (200 pr/bx)	NA (GSA: 3101009)	E-A-R earplug, 3M Superfit 30, small, foam, yellow-orange-yellow	Fits small sizes ~10%. Size fitting not required. [1,2]
Foam earplugs, corded	NA	$120.00 (200 pr/bx)	6515-01-576-8796 (NA)	Plug, ear, foam, corded, yellow	Universal. Size fitting not required. [2]
Carrying case	NA	$10.12 (20/pg)	6515-01-100-1674 (NA)	Earplug carrying case (1.875”x2”, olive)	NA
Carrying case	NA	$11.35 (12/pg)	6515-01-212-9452 (NA)	Earplug carrying case (1.125”x1.75” olive)	NA
Tactical headset	NA	$65.00 (1 pr)	4240-01-519-6066 (NA)	Headset (Peltor Tactical 6S Headset)	Universal. Size fitting not required.

NOTES: 1. For these foam earplugs to be effective, the orange color (or orange ring for 3M earplugs) must not be visible after the earplug is inserted in the ear.
2. These earplugs are disposable and intended for temporary use (used as backups if other HPDs are unavailable).

Figure D-1. Pictures of Army Standard HPDs

b. Table D-2 provides current information for units to use for requisitioning the Army nonlinear earplugs. Figure D-2 provides pictures of these HPDs.

Table D-2
Requisitioning Information for Army Nonlinear Earplugs

Type	Size (Color)	Price (Qty)	NSN (DMLSS ID #)	Nomenclature	Fitting Estimate[1] (% of Population)
Earplugs, double-ended	NA (yellow-olive drab)	$646.49 (50 pr/bx)	6515-01-466-2710 (NA)	Plug, ear, Combat Arms, (yellow-olive drab, double-ended)	Nominally universal. Fits ~65%.[2]
Combat Arms	Small (olive drab)	$738.71 (50 pr/pg)	6515-01-576-8837 (35963701030)	Gen IV Combat Arms Earplug (small, 1-sided, in-ear selector switch)	Fits ~20–30%.
Combat Arms	Medium (desert tan)	$739.18 (50 pr/pg)	6515-01-576-8861 (35963701031)	Gen IV Combat Arms Earplug (medium, 1-sided, in-ear selector switch)	Fits ~55–70%.
Combat Arms	Large (brown)	$738.72 (50 pr/pg)	6515-01-576-8869 (35963701032)	Gen IV Combat Arms Earplug (large, 1-sided, in-ear selector switch)	Fits ~10–15%.
Battle Plug	Small (yellow)	$380.03 (50 pr/pg)	6515-01-632-4167 (6497)	Plug, ear, nonlinear 3-flange, small (Battle Plug, tab to open or close)	Fits ~20–30%.
Battle Plug	Medium (dark green)	$380.03 (50 pr/pg)	6515-01-632-4179 (6498)	Plug, ear, nonlinear 3-flange medium (Battle Plug, tab to open or close)	Fits ~55–70%.
Battle Plug	Large (dark brown)	$380.03 (50 pr/pg)	6515-01-632-4185 (6499)	Plug, ear, nonlinear 3-flange, large (Battle Plug, tab to open or close)	Fits ~10–15%.
SureFire	Small (clear-nude)	$12.24 (1 pr)	6515-01-549-6448 (6244RM126083)	Earplug, small (EP-3 Sonic Defender, stopper to open or close)	Fits ~25–30%.
SureFire	Medium (clear)	$10.88 (1 pr)	6515-01-549-6453 (0530EP3MPR)	Earplug, medium (EP-3 Sonic Defender, stopper to open or close)	Fits ~55–65%.
SureFire	Large (clear-nude)	$11.40 (1 pr)	6515-01-549-6457 (6244RM126085)	Earplug, large (EP-3 Sonic Defender, stopper to open or close)	Fits ~10–15%.
SureFire	Small (clear-nude)	$333.90 (25 pr/bx)	6515-01-606-4493 (NA)	Earplug, small, 25 pair (EP-3 Sonic Defender, stopper to open or close)	Fits ~25–30%.
SureFire	Medium (clear-nude)	$333.90 (25 pr/bx)	6515-01-606-4498 (NA)	Earplug, medium, 25 pair (EP-3 Sonic Defender, stopper to open or close)	Fits ~55–65%.
SureFire	Large (clear-nude)	$333.90 (25 pr/bx)	6515-01-606-4499 (NA)	Earplug, large, 25 pair (EP-3 Sonic Defender, stopper to open or close)	Fits ~10–15%.

NOTES: 1. A size fitting and the issue of an instruction sheet to the individual user are required for all current models of Army nonlinear earplugs (that is, Combat Arms Earplug, Battle Plug, or Sonic Defender).
2. Double-ended: the yellow end is inserted in the ear for impulse-noise (weapons fire) protection and the olive-drab end is inserted in the ear for steady-state-noise protection.

Figure D-2. Pictures of Army Nonlinear HPDs

D-2. DETERMINING THE TYPE, QUANTITY, AND SIZE PROPORTIONS OF HPDS

Units will normally be authorized different HPDs depending on their type of unit and will require different quantities depending on the reason for ordering (for example, new unit or initial bulk issue, fielding for deployment, issue of individual HPDs to replace lost HPDs, issue of individual HPDs to newly assigned personnel).

a. Type of Unit. Table of distribution and allowances (TDA) units (that is, garrison units) and modified table of organization and equipment (MTOE) or table of organization and equipment (TOE) units (that is, deploying tactical units) normally have different requirements for earplug capabilities.

(1) TDA Units. Nondeploying (TDA) units normally require only the Army standard (preformed) earplugs for protection from common noise-hazard exposure. Standard preformed earplugs are less expensive and sufficient for annual weapons-qualification training and steady-state-noise exposures (for example, dining facilities, motor pools).

(2) MTOE or TOE Units. To ensure their Soldiers can maintain situational awareness in field exercise and combat environments, deployable (MTOE or TOE) units will normally order nonlinear earplugs. But these units may also require, order, and use Army standard (preformed) earplugs.

b. Estimate of a Requisition for Earplugs. To determine a unit's requirements for an earplug requisition, the unit hearing protection (HP) officer should determine the unit population and then use the fitting estimate percentages (tables D-1 and D-2) to determine the quantity of earplugs required.

NOTE: By using the highest percentage of the fitting estimates for all three sizes, the HP officer's calculation will result in a total quantity that is 110 percent of the unit strength. Rounding to box quantities will increase this percentage even more. This overage is usually necessary to ensure that all Soldiers receive a proper fit and extra earplugs are available for issue to new arrivals or for replacing lost earplugs.

(1) Table D-3 provides a sample estimate of a requisition for a TDA unit with 200 personnel.

(2) Table D-4 provides a sample estimate of a requisition for an MTOE unit with 250 personnel.

c. POCs. Units may contact the Army in Europe regional hearing program managers (HPMs) (para 7a(2)) for assistance with conducting earplug fittings or providing training on earplug.

Table D-3
Example of a TDA Unit Requisition Calculation for Army Standard Earplugs

Item Name NSN	Unit Pop	Sizes (pop %)	Qty Required	Boxes Ordered (# of items)	Cost
Earplug, 3-flange 6515-00-442-4821	200	Small (20%)	40 pairs (200 * .2)	4 Boxes (48 pr)	$ 26.52
Earplug, 3-flange 6515-01-442-4818	200	Medium (80%)	160 pairs (200 * .8)	14 Boxes (168 pr)	$ 91.14
Earplug, 3-flange 6515-00-467-0092	200	Large (10%)	20 pairs (200 * .1)	2 Boxes (24 pr)	$ 13.30
Earplug, foam 6515-00-137-6345	200	One size for all (backups ~150%)	225-300 (estimated)	2 Boxes (400 pr)	$ 70.00
Carrying case 6515-01-212-9452	200	One size for all (~120%)	220-250 (estimated)	12 Packages (240 cases)	$ 136.20
Totals:	**200**		**220 pairs (+ 250 foam)**	**22 boxes (240 pr) (+ 400 foam)**	**$337.16**

Table D-4
Example of an MTOE Unit Requisition Calculation for Army Nonlinear Earplugs

Item Name NSN	Unit Pop	Sizes (pop %)	Qty Required	Boxes Ordered (# of items)	Cost
Earplug, Combat Arms 6515-01-576-8837	250	Small (30%)	75 pairs (250 * .3)	2 Boxes (100 pr)	$1,477.42
Earplug, Combat Arms 6515-01-576-8861	250	Medium (65%)	163 pairs (250 * .65	4 Boxes (200 pr)	$2,956.72
Earplug, Combat Arms 6515-01-576-8869	250	Large (15%)	38 pairs (250 * .15)	1 Boxes (50 pr)	$ 738.72
Earplug, foam 6515-00-137-6345	250	One size for all (backups ~125%)	300-350 (estimated)	2 Boxes (400 pr)	$ 70.00
Carrying case 6515-01-212-9452	250	One size for all (~110%)	275–300 (estimated)	14 Packages (280 cases)	$ 140.00
Totals:	**250**		**276 pairs (+300 foam)**	**9 Boxes (350 pr) (+ 400 foam)**	**$5,382.86**

APPENDIX E
TACTICAL COMMUNICATION AND PROTECTIVE SYSTEMS

E-1. IN-THE-EAR TACTICAL COMMUNICATION AND PROTECTIVE SYSTEMS

A variety of in-the-ear (ITE) tactical communication and protective systems (TCAPSs) hearing-protection devices (HPDs) are currently in use by the U.S. Army; however, as of FY 14 only one system is currently approved by the Program Executive Office–Soldier (PEO Soldier) for fielding to Army units: the INVISIO X50 headset manufactured by Television Equipment Associates, Inc. (TEA) (figs E-1 and E-2 and para b below).

a. Generic Description of ITE TCAPS HPDs.

(1) Capabilities. In general, all ITE TCAPS HPDs provide—

(a) Hearing and impulse-noise protection.

(b) Hear-through capability with enhanced hearing and situational awareness.

(c) Dual (that is, both radio and intercom) push-to-talk (PTT) capability with auto-sensing.

(2) Requirements. All ITE TCAPS HPDs use a leak test to ensure a proper ear-canal seal is obtained. Active noise control cannot be utilized without a proper ear-canal seal.

(3) Components. All ITE TCAPS HPDs that the Army uses have similar major components (that is, a housing body or control box, microphones (internal and external), cables, and ITE inserts). As an example, figure E-1 displays the components of the INVISIO X50.

Figure E-1. INVISIO X50 Components

(4) Controls. All ITE TCAPS HPDs have similar control features. As an example, figure E-2 displays the controls on the housing body for the INVISIO X50. For a detailed explanation of the controls for this device or other ITE TCAPS HPDs, users should refer to the user's manual or other manufacturer's information.

Figure E-2. INVISIO X50 Controls

(a) Volume Controls. All devices contain a volume control (normally marked with "+" and "-" graphics similar to those in fig E-2). Generally, manufacturers recommend using the lowest volume setting when using a radio because increased volume settings can cause distortion and hazardous noise.

(b) PTT Mode. The PTT feature is activated by an actuator button (normally marked "PTT") that allows the user to transmit his or her voice over the intercom or radio only when the actuator is selected. In this mode, the user will continuously transmit for as long as the actuator button is selected (that is, held down or, if applicable, in a locked-on position).

(c) Voice-Activated Microphone Mode. Some systems will have a voice-activated microphone (VOX) mode, which can detect when the user is talking and transmit the signal automatically. This is a noncontinuous alternative to using the PTT mode.

1. Generally, manufacturers recommend that in quiet environments the volume be set to the lowest level because surrounding sounds can trigger the VOX to transmit those ambient noises over the radio.

2. The VOX mode will remain on for only 1 second after the user stops speaking. If, in conjunction with the user's verbal pauses, any startup delay and this cutoff time result in interrupted conversation, the user should push on the PTT switch. PTT mode will override the VOX mode.

(d) Open-Microphone Mode. Another option in some systems is the open-microphone mode (often marked "O.Mic"); however, this option is recommended for use only on intercom systems.

1. Because the O.Mic mode will also transmit ambient noises from the surrounding environment, this mode is primarily intended for use with an intercom. To avoid transmitting environmental sounds over the radio, users should use the VOX or PTT modes.

2. The O.Mic mode is also not recommended for use in conjunction with radios because the resulting constant transmission can result in damage to the radio and interfere with other users' ability to transmit on the same radio channel.

(5) Radio Compatibility with ITE TCAPS HPDs. When connecting an ITE TCAPS HPD to a radio, the user must ensure the radio and the selected ITE TCAPS HPD are compatible. Users should refer to the ITE TCAPS manufacturer information for compatibility data.

b. Specific Details About the TEA INVISIO X50. In addition to the generic features of all ITE TCAPS HPDs (a(1) thru (5) above), the INVISIO X50 is capable of—

(1) Operating continuously for approximately 100 hours on one AA battery.

(2) Interfacing with all current Army standard radio systems (for example, Army-Navy, Portable Radio Communication-148 (AN/PRC-148), AN/PRC-152, AN/PRC-154, AN/PRC-154A) and vehicle-intercom systems (VIS) (for example, the AN/VIC-3).

c. Specific Details About Communication Ear Plugs for Aviators. In coordination with the helmet, the communication earplug (CEP) part of the ITE TCAPS HPD completes a double hearing protective system for pilots. Aviation ITE TCAPS HPDs are incorporated into the SPH-4B and HGU-56/P aviator helmets.

(1) Because the aviation ITE TCAPS HPDs use a much different control system (that is, from the common controls shown in fig E-2) and models may vary, users should closely follow the manufacturer's instructions.

(2) Custom earmolds may be used with the CEP. Unit Hearing Program officers should contact the regional hearing program manager for information about CEP custom earmolds and how to obtain earmold impressions.

E-2. OVER-THE-EAR TCAPS HPDs

As of the end of FY 14, PEO Soldier has not approved any over-the-ear (OTE) TCAPS HPDs for fielding as new equipment or for deployments. Soldiers may, however, still need to use previously acquired, fielded, or issued OTE TCAPS HPDs that are on hand in Army units. OTE TCAPS HPDs are also integrated into the Combat Vehicle Crewman (CVC) helmet. The Peltor COMTAC III headset (a below) and the Product Improved Combat Vehicle Crewman (PICVC) helmet (b below) are two examples of these existing OTE TCAPS HPDs.

a. Peltor COMTAC III Headset. The COMTAC III headset is an active-volume hearing protector that was designed for integration with the Army advanced combat helmet (ACH). The COMTAC III headset (fig E-3) has the following capabilities and features:

(1) Dual audio input connection capabilities (allows the use of up to two radios).

(2) A volume function that can amplify weak sounds while suppressing loud ambient noise.

(3) Microphones that are spatially separated, which preserves some auditory localization cues.

(4) Both passive and active methods for reducing noise.

(5) A boom microphone that can be mounted on either ear.

(6) A PTT box, optional hard-wired remote PTT, and a tactical keypad (not shown in fig E-3).

Figure E-3. Peltor COMTAC III Headset

b. PICVC Helmet. The PICVC helmet was designed to provide ballistic protection, intercom communication, talk-through capabilities, and hearing protection for Soldiers in ground-combat vehicles.

(1) Capabilities and Features. The primary difference between the PICVC and the legacy CVC (that is, the improved feature of the PICVC) is that the PICVC has talk-through microphones. The PICVC is qualified for use with the standard vehicle intercom systems found in Army ground-combat vehicles. Additionally, the following applies to the PICVC:

(a) The use of eyewear can negatively affect the noise-attenuation effectiveness of the device.

(b) The liners will properly fit approximately 99 percent of Army personnel.

(c) The ear cups pass the windblown rain test.

(2) PICVC Helmet Components. Figure E-4 provides a picture of the PICVC helmet and identifies the major components.

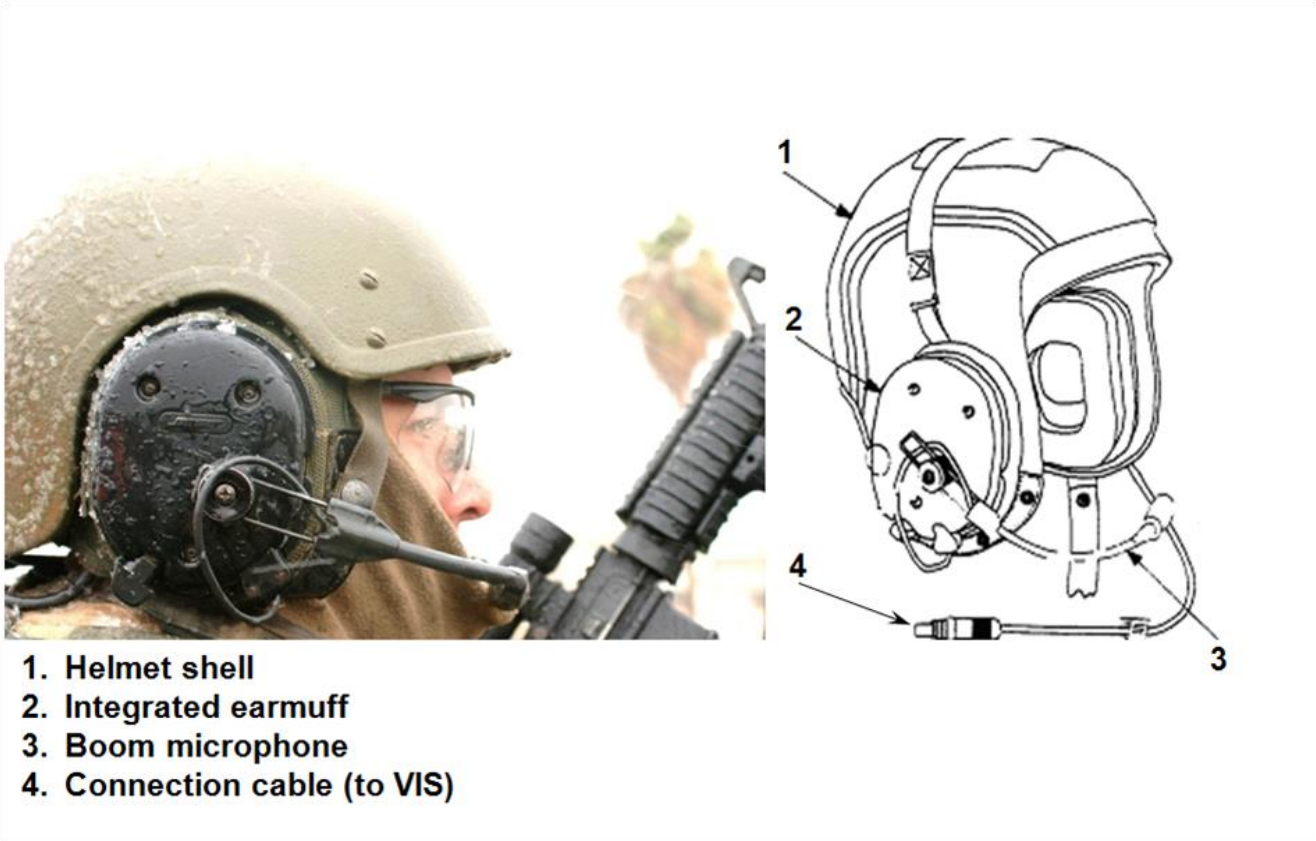

Figure E-4. The PICVC Helmet

GLOSSARY

SECTION I
ABBREVIATIONS

7th ATC	7th Army Training Command
A2CU	Army aircrew combat uniform
ACH	advanced combat helmet
ACU	Army combat uniform
ACU (OCP)	Army combat uniform (operational camouflage pattern)
ACU (UCP)	Army combat uniform (universal camouflage pattern)
AEPUBS	Army in Europe Library & Publishing System
AHP	Army Hearing Program
AHP-E	Army Hearing Program–Europe
AKO	Army Knowledge Online
ALARACT	all Army activities [message]
AMMP	Advanced Medium Mobile Power [generator-series]
AN/PRC	Army-Navy, Portable Radio Communication [radio model]
ANR	active noise reduction
AOR	area of responsibility
APC	armored personnel carrier
AR	Army regulation
az	azimuth
BFV	Bradley Fighting Vehicle
bx	box
CAC	common access card
CAOHC	Council for Accreditation in Occupational Hearing Conservation
CATC	Combined Arms Training Center, 7th Army Training Command
CEP	communication earplug
CG, USAREUR	Commanding General, United States Army Europe
civ	civilian
CTA II	Collective Tariff Agreement (also see, *TV AL II)*)
CVC	combat vehicle crewman (helmet)
DA	Department of the Army
dB	decibel
dBA	A-weighted decibel
dBP	decibel peak-measurement
deg	degrees
d.h.	*das heißt*
DMLSS	Defense Medical Logistics Standard Support
DOEHRS	Defense Occupational Environmental Health Readiness System
DOEHRS-DR	Defense Occupational Environmental Health Readiness System–Data Repository
DOEHRS-HC	Defense Occupational Environmental Health Readiness System–Hearing Conservation
DOD	Department of Defense
DTMS	Digital Training Management System
EU	European Union
fig	figure

FM	field manual
FST	field sanitation team
FY	fiscal year
GSA	Government Services Administration
HMMWV	High Mobility Multipurpose Wheeled Vehicle
HP	hearing program
HPD	hearing-protection device
HPM	hearing program manager
HPM-E	Hearing Program Manager for Europe
HQ USAREUR	Headquarters, United States Army Europe
HR	hearing readiness
HRC	hearing-readiness classification
HRCP	hearing readiness and conservation program
HTL	hearing threshold level
Hz	Hertz
IHP-E	Army in Europe Industrial Hygiene Program
IHPM-E	Industrial Hygiene Program Manager for Europe
inst	instruction [publication]
ITE	in the ear
kph	kilometers per hour
kw	kilowatt
lg	large
LMTV	Light Medium Tactical Vehicle
LN	local national
m	meter
MAAWS	Multi-Role Anti-Armor Anti-Personnel Weapon System
MAR2	military occupational specialty administrative retention review
med	medium
MEDPROS	Medical Protection System
MIL-STD	military standard [publication]
MMRB	military medical review board
mph	miles per hour
MTOE	modified table of organization and equipment
MTV	Medium Tactical Vehicle
NA	not applicable, not available
NCO	noncommissioned officer
NSN	national stock number
OCSURG	Office of the Command Surgeon, Headquarters, United States Army Europe
OH	occupational health
OHP-E	Occupational Health Program–Europe
OHPM-E	Occupational Health Program Manager for Europe
OHS	operational hearing services
OIP	organizational inspection program
O.Mic	open microphone (graphic)
OSHA	Occupational Safety and Health Administration
OTE	over the ear
para	paragraph
PD SSI	Product Director–Soldier Systems Integration; Office of the Project Manager–Soldier Warrior, Program Executive Office–Soldier

PEO Soldier	Program Executive Office–Soldier
pg	package
PHCE	Public Health Command Europe, Regional Health Command, Europe
PICVC	Product Improved Combat Vehicle Crewman (helmet)
PM SWAR	Project Manager–Soldier Warrior, Program Executive Office–Soldier
pop	population
PPE	personal protective equipment
pr	pair
PTT	push to talk
qty	quantity
REM	rapid eye movement
RFI	Rapid Fielding Initiative
SAW	Squad Automatic Weapon
SEL	sound-exposure level
SIL	speech-interference level
sm	small
SME	subject-matter expert
SOH	safety and occupational health
SOP	standing operating procedure
STS	significant threshold shift
TBMED	technical bulletin, medical
TCAPS	tactical communication and protective system
TDA	table of distribution and allowances
TEA	Television Equipment Associates, Incorporated
TG	technical guide
TIP	technical information paper
TOC	tactical operations center
TOE	table of organization and equipment
TQG	tactical quiet generator
TTS	temporary threshold shift
TV AL II	*Tarifvertrag vom 16. Dezember 1966 für die Arbeitnehmer bei den Stationierungsstreitkräften im Gebiet der Bundesrepublik Deutschland* (also see, CTA II)
TWA	time-weighted average
UIC	unit identification code
U.S.	United States
USACHPPM	United States Army Center for Health Promotion and Preventive Medicine
USAG	United States Army garrison
USAMMCE	United States Army Medical Materiel Center, Europe, Regional Health Command, Europe
USAPHC	United States Army Public Health Command
USAREUR	United States Army Europe
USAREUR G3/5/7	Deputy Chief of Staff, G3/5/7, Headquarters United States Army Europe
VOX	voice-activated microphone

SECTION II
TERMS

Army in Europe
An umbrella term for all U.S. Army organizations in Europe. This includes, but is not limited to, the United States Army Europe (USAREUR), which includes HQ USAREUR, USAREUR major subordinate commands (MSCs), and commands under the operational control (OPCON) of USAREUR; the United States Army Installation Management Command Europe (IMCOM-Europe), which includes HQ IMCOM-Europe, United States Army garrisons in Europe, and forward operating sites in Europe managed by IMCOM-Europe; the Civilian Human Resources Agency, Northeast/Europe Region; and other Army units and organizations that are stationed in Europe in support of USAREUR.

NOTE: AE Regulation 10-5 and the USAREUR Organizational Chart (contents FOUO, available on SharePoint at *https://intranet.eur.army.mil/hq/g3fmd/integ/USC/Current/Current%20USC.pdf*) provide more information about HQ USAREUR; USAREUR MSCs, USAREUR OPCON Commands, and other USAREUR affiliated organizations; as well as select Army in Europe tenant organizations.

Army in Europe personnel
All Army Soldiers, Army civilian employees, Army local-national employees, and Army-contracted employees assigned to Army units in the European theater

audiogram
A written representation of human hearing for an individual that is written in graph or serial format to record hearing thresholds. The DOD uses DD Forms 2215 and 2216 (below), which are both serial-format audiograms:

- Graph-format audiogram: This format uses a graph to depict the hearing thresholds and is commonly used only by audiologists in their analysis of an individual's hearing.
- Serial-format audiogram: This format uses numbers in a table to depict hearing thresholds and is more often used to document hearing because it provides a record an individual can read more easily.

Council for Accreditation in Occupational Hearing Conservation
A private organization recognized and underwritten by the National Institute for Occupational Safety and Health that establishes the nationally-recognized board certification standards and requirements (or military course equivalent) for hearing-technician certifications

DD Form 2215, Reference Audiogram
A serial-format record of an individual's hearing thresholds used to record initial hearing test results (a reference audiogram is also known as a baseline audiogram)

DD Form 2216, Hearing Conservation Data
A serial-format record of an individual's hearing thresholds used to document periodic, annual, pre- or postdeployment, initial (90-day), followup, termination, or other hearing-test results (that is, audiograms)

decibel
A unit of measurement for sound intensity (abbreviated as dB)

Defense Medical Logistics Standard Support
A centralized automated information system commonly used by medical treatment facilities to order equipment and supplies

Defense Occupational Environmental Health and Readiness System
A Defense Health Agency (tri-service) automation system composed of multiple modules that provides an enterprise approach to identifying, documenting, and tracking global and local occupational and environmental health hazards and readiness, which includes hearing readiness

Defense Occupational Environmental Health and Readiness System–Data Repository
A DOD database that maintains hearing tests uploaded from local hearing test sites. This database communicates with the Army Medical Protection System (MEDPROS) on a weekly basis to exchange data and update unit and individual hearing status reports.

Defense Occupational Environmental Health and Readiness System–Hearing Conservation
A DOD information system designed to support personal auditory readiness and help prevent hearing loss through early detection of hearing changes. This system also identifies the established standards for equipment to be used at local hearing test sites to conduct automated hearing evaluations.

DOD civilian employees
U.S. DOD civilian-service employees, local-national employees of the U.S. Forces, and DOD contractor employees supporting the U.S. Forces

frequency
A measurement of sound-propagation wavelength that uses the unit of measure of hertz (Hz)

NOTE: The frequency is perceived by a listener as pitch. Humans can detect sound pitches ranging from 20 through 20,000 Hz.

hearing program manager
A subject-matter expert and technical supervisor of unit hearing programs for a designated area or command. For the Army Hearing Program–Europe, regional hearing program managers are currently located in Kaiserslatuern and Vilseck, Germany (the Army in Europe Hearing Program Manager is also located in Landstuhl, Germany).

intensity
A measurement of sound volume, which is perceived by the listener as loudness and is measured in decibels (abbreviated as dB).

NOTE: The intensity of a sound in decibels is normally referenced to a scale (for example, A-weighted decibels (dBA), decibel hearing threshold level (dB HTL)). The dBA scale is used when measuring steady-state noise to represent the sensitivity of the human ear. The dB–HTL scale is used when measuring individual hearing ability (that is, for hearing tests).

local-national employee (also see, *ortsansässige Arbeitnehmer* below)
Civilian employees of the U.S. Forces, who are employed under German labor laws in accordance with and as modified by Article 56 of the Supplementary Agreement to the NATO Status of Forces Agreement and the Protocol of Signature thereto

***ortsansässige Arbeitnehmer* (also see, local-national employee above)**
Zivile Arbeitnehmer der US-Streitkräfte, die nach Maßgabe und gemäß den Einschränkungen des Artikels 56 des Zusatzabkommens zum NATO-Truppenstatut und dem Unterzeichnungsprotokoll hierzu nach deutschem Arbeitsrecht beschäftigt sind

physical profile functional capacity (PULHES) code
A code established by AR 40-501 that indicates the medically evaluated general physical condition of an individual using six general categories abbreviated as PULHES (that is, physical capacity, upper extremities, lower extremities, hearing-ears, vision-eyes, psychiatric)

rapid eye movement sleep
A state of sleep that normally recurs cyclically several times during a sleep period characterized by increased neuronal activity of the forebrain and midbrain, depressed muscle tone, dreaming, and rapid eye movements (REMs). REM sleep is theorized as essential to achieving more restful and regenerative sleep.

significant threshold shift
An average change in an individual's hearing levels from the most recent reference audiogram of at least 10 decibels (plus or minus) at frequencies of 2,000, 3,000, or 4,000 hertz in either ear. The change can be a positive numerical change (that is, hearing has worsened) or a negative numerical change (that is, hearing has improved).

speech-interference level
A level of background noise that reaches 55 A-weighted decibels or more that will preclude individuals from being able to communicate comfortably at distances of up to 15 feet

temporary threshold shift
A short-term change in an individual's hearing that generally results from the body's natural defense mechanism to hazardous levels of noise (that is, a reduction of blood flow to the ears, which lessens the hearing hair cell effectiveness). This change can become permanent if the noise exposure continues long enough such that the reduced blood flow causes some hearing hair cells to die.

threshold (hearing)
The sound level that is the softest at a specific frequency a listener can detect about 50 percent of the time the sound is presented. Individual thresholds are measured with an audiometer and recorded on hearing evaluations (audiograms). The Army uses five ranges of hearing thresholds to classify an individual's hearing capacity. The unit of measure for human hearing thresholds is decibels–hearing threshold level (dB HTLs). Audiometers usually measure hearing from -10 to +110 dB HTL (dial reading).

- 10 to 25 dB HTL -normal hearing
- 26 to 40 dB HTL -mild hearing loss
- 41 to 65 dB HTL -moderate hearing loss
- 66 to 90 dB HTL -severe hearing loss
- over 90 dB HTL -profound hearing loss

NOTE: A measurement of 0 dB does not mean the absence of sound, it actually represents a reference to the average softest sound level that a normal-hearing human ear can detect.