



# Department of Defense INSTRUCTION

NUMBER 6055.12

March 5, 2004

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USD(AT&L)

SUBJECT: DoD Hearing Conservation Program (HCP)

- References:
- (a) DoD Instruction 6055.12, "DoD Hearing Conservation Program (HCP)," April 22, 1996 (hereby canceled)
  - (b) [DoD Directive 4715.1](#), "Environmental Security," February 24, 1996
  - (c) American National Standards Institute (ANSI) Standard S3.20-1995,<sup>1</sup> "Bioacoustical Terminology," current edition
  - (d) [DoD Directive 5134.1](#), "Under Secretary of Defense for Acquisition, Technology, and Logistics (USD(AT&L))," April 21, 2000
  - (e) through (o), see enclosure 1

## 1. REISSUANCE AND PURPOSE

This Instruction reissues reference (a) to implement policy and update responsibilities and procedures for administering a DoD HCP to prevent occupational illness under reference (b).

## 2. APPLICABILITY AND SCOPE

This Instruction:

2.1. Applies to the Office of the Secretary of Defense, the Military Departments, the Chairman of the Joint Chiefs of Staff, the Combatant Commands, the Office of the Inspector General of the Department of Defense, the Defense Agencies, the DoD Field Activities and all other organizational entities in the Department of Defense (hereafter referred to as "the DoD Components"). The term "Military Services," as used above, refers to the Army, the Navy, the Air Force, and the Marine Corps.

<sup>1</sup> ANSI standards may be obtained for a fee from ANSI at <http://webstore.ansi.org>

2.2. Applies to all DoD military and civilian (appropriated and nonappropriated) personnel and operations worldwide.

2.3. With the exception of requirements for reference and termination audiograms, does not apply to personnel defined as "deaf" in ANSI Standard S3.20-1973 (reference (c)).

### 3. DEFINITIONS

Terms used in this Instruction are defined in enclosure 2.

### 4. POLICY

It is DoD policy under reference (b) to protect all DoD personnel from hearing loss resulting from occupational noise exposure through a continuing, effective, and comprehensive Hearing Conservation Program (HCP).

### 5. RESPONSIBILITIES

5.1. The Under Secretary of Defense for Acquisition, Technology, and Logistics, consistent with DoD Directive 5134.1 (reference (d)), shall:

5.1.1. Provide policy guidance and coordination on hearing conservation matters in the Department of Defense.

5.1.2. Serve as the principal DoD point of contact with Federal regulatory agencies controlling occupational exposure to hazardous noise.

5.2. The Heads of the DoD Components conducting operations involving occupational exposure to hazardous noise shall establish and maintain HCPs to implement this Instruction. Such programs shall encompass the minimum requirements in section 6., below, and shall periodically evaluate the effectiveness of their HCPs.

### 6. PROCEDURES

6.1. Written Plan. The DoD Components shall prepare a written plan for the implementation of a comprehensive HCP. Such plans shall address occupational noise exposure computation and monitoring, noise abatement, hearing protectors, methods for

estimating the adequacy of hearing protector attenuation, training, audiometric testing requirements, audiometric test rooms, audiometric measuring instruments, acoustic calibration of audiometers, record keeping, and program evaluation.

6.2. Program Implementation. HCPs shall be implemented when personnel are exposed to the following:

6.2.1. Continuous and intermittent noise that has an 8-hour time-weighted average (TWA) noise level of 85 decibels A-weighted (dBA), or above. Implementation may also be started regardless of the duration of noise exposure. Those criteria apply only to energy in the frequency range from 20 to 16,000 Hertz (Hz).

6.2.2. Impulse noise sound pressure levels (SPLs) of 140 decibels (dB) peak, or greater.

6.2.3. Upper sonic and ultrasound acoustic radiation exposures occur under special circumstances that require specific measurement and hazard assessment calculations (see subparagraph 6.3.11., below).

### 6.3. Noise Measurement and Analysis

6.3.1. SPLs shall be measured in all potentially hazardous noise work areas at least once and within 30 days of any change in operations affecting noise levels.

6.3.2. TWA noise levels shall be determined for all DoD civilian employees routinely working in hazardous noise areas and military personnel working in hazardous noise industrial-type operations at least once and within 30 days of any change in operations affecting noise levels.

6.3.3. Arisk assessment code (RAC) shall be assigned to all potentially hazardous noise areas and operations, in accordance with DoD Instruction 6055.1 (reference (e)).

6.3.4. A current inventory of all potentially hazardous noise areas and operations shall be maintained to include, minimally, noise levels, RACs, and the types of control measures used.

6.3.5. Only personnel meeting training requirements specified by the DoD Components shall conduct noise surveys.

6.3.6. Instrumentation used for those surveys must meet or exceed requirements for type 2 sound level meter, in ANSI Standard S1.4-1983 with revision in

1985 (reference (f)). Those instruments must have been subjected to a complete electro-acoustic calibration no more than 1 year before the survey. Acoustical calibration must be performed on the instruments before and after each day's measurements. The acoustical calibrator must be accurate to within plus or minus one dB, and must have been subjected to a complete electro-acoustic calibration no more than 1 year before the survey.

6.3.7. Continuous and intermittent noise levels shall be measured using "A" weighting, with the meter response set to "slow."

6.3.7.1. When personal noise dosimeters are used for worker exposure measurements, they must integrate all sound levels from 80 dB to 130 dB. Dosimeters must meet or exceed specifications in the latest approved ANSI Standard S1.25 (reference (g)). DoD Components shall use a time-intensity exchange rate no less protective than a 4 dB exchange rate, and are strongly recommended to use a 3 dB exchange rate.

6.3.7.2. Area monitoring may be used to determine worker exposure. In circumstances such as high worker mobility, significant variations in noise levels, or a significant component of impulse noise, representative personnel sampling shall be conducted.

6.3.8. Worker noise exposure shall be computed, in accordance with enclosure 3, regardless of any attenuation provided by hearing protectors.

6.3.9. Impulse noise measurements shall be made using calibrated sound level meters (SLMs) that are as follows:

6.3.9.1. Meet or exceed specifications in reference (f).

6.3.9.2. Have a peak hold circuit.

6.3.9.3. Have a rise time not exceeding 35 microseconds.

6.3.9.4. Are capable of measuring peak SPLs in excess of 140 dB peak SPL.

6.3.10. If SLMs meeting the requirements of subparagraph 6.3.9., above, are not available, a combination of calibrated instruments capable of indicating peak pressure level with a rise time not exceeding 35 microseconds and capable of measuring peak SPLs in excess of 140 dB may be used for impulse noise measurements.

6.3.11. Special limits apply to upper sonic and ultrasound acoustic radiation. The values listed at table 1 below shall be a guide in the control of noise exposure. In the workplace where ultrasound is produced and hearing protection is not already used for audible noise, the impact of possible ultrasonic noise shall be evaluated and hearing protective devices provided if sound levels exceed those specified in Table T1., below. Those levels above 20 kHz are for the prevention of possible hearing loss from sub-harmonics of those frequencies (American Conference of Governmental Industrial Hygienists, "Documentation of the Threshold Limit Values and Biological Exposure Indices"). Consultation with appropriate DoD Component technical centers may be required in measuring or evaluating equipment producing those levels.

| One-Third Octave<br>Band Center Frequency (kHz) | One-Third Octave<br>Band SPL (dB re 20 $\mu$ PA) |
|---|--|
| 10  | 80   |
| 12.5  | 80   |
| 16  | 80   |
| 20  | 105  |
| 25  | 110  |
| 31.5  | 115  |
| 40  | 115  |
| 50  | 115  |

6.3.12. Noise exposure data shall be provided to those responsible for HCP effectiveness.

#### 6.4. Safety Signs and Labels

6.4.1. All potentially hazardous noise areas must be clearly identified by signs located at their entrances or boundaries.

6.4.2. Each tool or piece of equipment producing noise levels greater than 85 dBA, including vehicles, shall be conspicuously marked to alert personnel of the potential hazard. The exception shall be when an entire space is designated a "hazardous noise area," and the equipment is stationary. Exteriors of military combatant equipment are excluded from that requirement. Professional judgment and discretion shall be exercised when labeling tools and equipment.

6.4.3. Signs and decals describing (words or with other visual symbols) the potential hazard and the protective measures taken shall be used to designate "hazardous noise areas" and "equipment"; e.g., "Danger," "Hazardous Noise," "Hearing Protection Required When in Operation." All symbols and decals shall, as a minimum, comply with 29 CFR 1910.145 (reference(h)).

## 6.5. Noise Abatement

6.5.1. Engineering controls shall be the primary means of eliminating personnel exposure to potentially hazardous noise. All practical design approaches to reduce noise levels to below hazardous levels by engineering principles shall be explored. Priorities for noise control resources shall be assigned based on the applicable RAC. Where engineering controls are undertaken, the design objective shall be to reduce steady-state levels to below 85 dBA, regardless of personnel exposure time, and to reduce impulse noise levels to below 140 dB peak SPL. Engineering controls shall be applied to "military-unique workplaces," as defined in reference (e) within the constraints of maintaining combat readiness.

6.5.2. New equipment being considered for purchase shall have the lowest sound emission levels that are technologically and economically possible and compatible with performance and environmental requirements. 42 U.S.C. 4914 (reference (i)) applies.

6.5.3. Acoustics shall be included in specifications for all new facilities, equipment, and substantial modification projects, and weapon systems and subsystems (MIL-STD-882C, reference (j)). The objective shall be to ensure, if possible, a steady-state level less than 85 dBA at all personnel locations during normal operation.

## 6.6. Personal Hearing Protectors

6.6.1. The use of personal hearing protectors for limiting noise exposure is considered an interim protective measure, while engineering control measures are being explored. Such devices shall constitute a permanent measure, only if engineering controls are not technologically, economically, or operationally possible.

6.6.2. The DoD Components shall issue personal hearing protectors free to all personnel working in designated "hazardous noise areas" or operate noise-hazardous equipment.

6.6.3. All DoD facilities with hazardous noise areas and employing individuals trained in fitting of preformed earplugs shall maintain an adequate supply of all sizes of approved preformed earplugs. All other facilities shall maintain disposable earplugs and muffs.

6.6.4. The hearing protectors provided must be capable of attenuating worker noise exposure below a TWA of 85 dBA. If hearing protectors do not provide sufficient attenuation, administrative control of exposure shall be necessary.

6.6.5. Personnel shall be allowed to choose personal hearing protectors among those approved devices, available through supply channels unless medically contraindicated or inappropriate for a particular hazardous noise exposure. Local activities may choose not to maintain stocks of all approved devices, but will then inform individuals of their ability to choose other protectors. Enclosure 4 provides National Stock Numbers (NSNs) for earplugs, noise muffs, noise muff replacement seals, and noise muff replacement filters that have been approved by all Military Service medical authorities. That does not restrict the DoD Components from purchase of hearing protective devices not included on the list for special applications. Noise muffs with built-in radios that are designed for recreational listening must not be used in place of, or with, approved hearing protectors. Hearing aids must not be used in place of approved hearing protectors. Certain hearing aids may be used with over-the-ear hearing protectors after evaluation and approval by a military audiologist or otolaryngologist, on a case-by-case basis.

6.6.6. An earplug carrying case (NSN 6515-01-100-1674) must be provided at no cost with each set of preformed earplugs. That case may also be used for hand formed earplugs.

6.6.7. Preformed earplugs shall be fitted and issued only under the supervision of personnel specifically trained to fit earplugs.

6.6.8. Personnel may use custom earplugs only if they may not be properly fitted with approved hearing protectors or if a custom device is required for special circumstances. Preformed or custom molded musician's earplugs shall be provided to Service band members. In that instance, only audiologists, otolaryngologists, or trained medical technicians may take impressions of the ear necessary to make the custom earplugs.

6.6.9. Medically trained personnel must examine the fit and condition of preformed and custom earplugs at least annually.

6.6.10. Personnel shall receive adequate and effective training in the proper care and use of personal hearing protectors (enclosures 5 through 10).

6.6.11. Personnel working in or entering designated "hazardous noise areas" shall always carry hearing protectors. When noise sources are operating, personnel shall wear their hearing protection devices regardless of exposure time. All personnel exposed to gunfire or artillery fire in test or training situations must wear hearing protectors (enclosure 10).

6.6.12. The DoD Components must assess the adequacy of hearing protectors when used in very high noise environments or for extended exposure periods.

6.6.13. All levels of supervision and management, by personal example and precept, shall enforce the use of hearing protectors. Additionally, DoD Component programs shall stimulate peer pressure to strengthen compliance. For noncompliance, management shall consider disciplinary action as a corrective measure against the offender and the supervisor.

## 6.7. Education

6.7.1. All personnel routinely working in designated "hazardous noise areas" shall receive annual training on the following:

6.7.1.1. The effects of noise on hearing.

6.7.1.2. The purpose of hearing protection.

6.7.1.3. The advantages, disadvantages, and attenuation of various hearing protectors.

6.7.1.4. Mandatory requirement of assigned protective equipment, and administrative actions that may follow for failure to wear.

6.7.1.5. The purpose of audiometric testing.

6.7.1.6. An explanation of the test procedures.

6.7.1.7. Hearing loss may lead to disqualification from current duties, if hearing is critical to job performance.

6.7.2. All personnel shall be encouraged to use hearing protectors when exposed to hazardous noise during off-duty activities.

6.8. Audiometric Testing. The DoD Hearing Evaluation and Audiometric Reporting System (HEARS) shall be the system used by the Military Services for hearing conservation purposes as follows:

6.8.1. All personnel routinely exposed to hazardous noise shall be placed in a hearing testing program. That program shall include pre-placement, periodic (at least annually), and termination audiograms. Personnel infrequently or incidentally entering

designated "hazardous noise areas" need not participate in the audiometric testing program.

6.8.2. All audiometric testing shall do the following:

6.8.2.1. Be performed by a licensed or certified audiologist, otolaryngologist, or other physician; or by a technician certified by the Council for Accreditation in Occupational Hearing Conservation or who has completed equivalent military training. A technician who performs audiometric tests shall be responsible to an audiologist, an otolaryngologist, or other physician. Standard instructions shall be given to individuals before testing (enclosure 11).

6.8.2.2. Be conducted in a testing environment with background octave band SPLs not greater than the following:

6.8.2.2.1. For 500 Hz, 27 dB.

6.8.2.2.2. For 1000 Hz, 29 dB.

6.8.2.2.3. For 2000 Hz, 34 dB.

6.8.2.2.4. For 4000 Hz, 39 dB.

6.8.2.2.5. For 8000 Hz, 41 dB. The test environment shall be resurveyed annually using equipment conforming at least to the Type 1 requirements of the latest approved ANSI Standards S1.4A to S1.4-1983 and the order 3 extended range requirements of the latest approved ANSI Standard S1.11-1986 (references (f) and (k)).

6.8.2.3. Include pure tone, air conduction, and hearing threshold examinations of each ear at the test frequencies of 500, 1000, 2000, 3000, 4000, and 6000 Hz.

6.8.2.4. Be performed on audiometers calibrated to the specifications of the latest approved ANSI Standard S3.6-1989 (reference (l)).

6.8.2.5. Occur on audiometers calibrated for specifications in reference (k). Audiometers currently in calibration must receive annual electro-acoustic calibration.

6.8.2.6. Occur on audiometers that have received a functional operation check before each day's use for specifications in 29 CFR 1910.95 reference (m).

6.8.3. All military personnel shall receive a reference audiogram at basic training prior to noise exposure. Every effort shall be made to conduct a reference audiogram on civilian workers before they are assigned to duties involving hazardous noise exposure. A reference audiogram shall not be conducted more than 1 month from the date of the worker's initial exposure to hazardous noise. Regardless when started, the first valid hearing test administered is the reference audiogram and shall be preceded by at least 14 hours without exposure to noise from any source (hearing protectors shall not be used to meet that requirement). The worker shall be informed to avoid high levels of occupational or non-occupational noise exposure during a 14-hour period preceding the examination.

6.8.4. Personnel exposed to hazardous noise levels exceeding the standard in paragraph 6.2., above, shall receive annual audiograms.

6.8.5. A termination audiogram shall be conducted on each worker about to stop working in designated "hazardous noise areas." Personnel moving to other DoD jobs involving hazardous noise exposure need not be given a termination audiogram unless they change the DoD Components.

6.8.6. A Significant Threshold Shift (STS) shall include a change in hearing threshold relative to the current baseline audiogram of an average of 10 decibels (dB) or more at 2000, 3000, and 4000 Hz, either ear. Age corrections will not be applied. The former 15 dB criteria at 1000, 2000, 3000, or 4000 Hz are retained as an early warning flag only with no requirements for follow-up testing or referrals.

6.8.7. A follow-up audiogram shall be conducted when an individual's audiogram shows an STS relative to the current reference audiogram in either ear. Medical evaluation is required to validate the existence of a permanent noise-induced threshold shift and/or to determine if further medical referral is required. That evaluation shall be performed by an audiologist, an otolaryngologist, or other physician. Any determination that the noise-induced STS is not work-related or has not been aggravated by occupational noise exposure shall be made by a physician.

6.8.8. When a negative STS (improvement in hearing threshold from the reference audiogram) is noted on the periodic audiogram, one 14-hour noise-free follow-up test is required. That may be administered the same day as the periodic test. The results of the follow-up test may be used to create a re-established reference audiogram.

6.8.9. When a positive STS (decrease in hearing threshold from the reference audiogram) is noted on the periodic audiogram, two 14-hour noise-free follow-up tests must be administered to confirm that the decrease in hearing is permanent. Those two follow-up tests may be administered on the same day, but may not be performed on the same day as the annual audiogram. The results of the second follow-up test may be used to create a re-established reference audiogram. If the results of the first follow-up test do not indicate an STS, a second follow-up test is not required.

6.8.10. When an audiologist or a physician confirms the positive threshold shift is permanent, the individual shall be notified in writing within 21 days of such determination, and the condition entered in the individual's medical record. The individual shall be refitted with hearing protection, instructed in its care and use, and strongly encouraged to wear the hearing protection. Supervisors shall be notified, in writing, that the worker has experienced a decrease in hearing. The notification letter shall not contain additional details without prior written permission by the worker. The supervisor shall also be advised that any discussion of a worker's hearing abilities with non-authorized personnel is strictly prohibited.

6.8.11. A new reference audiogram shall replace the original reference audiogram, when the medical evaluation confirms the STS noted during the annual and follow-up audiograms is permanent. The original reference audiogram shall be retained in the patient's medical record on a DD Form 2215, "Reference Audiogram" (enclosure 13). A revised reference audiogram should also be established when the hearing threshold demonstrated on the annual and follow-up audiograms indicate significant improvement over the existing reference audiogram. For a positive STS, the reviewing audiologist or physician shall choose one of the following options for reestablishing the reference audiogram:

6.8.11.1. Use the results of the most recent follow-up test;

6.8.11.2. Use the results of the audiologic referral (if all pertinent examiner and audiometer information are available for the DD Form 2215); or,

6.8.11.3. Conduct a separate hearing test and use its results to complete a new DD Form 2215 (enclosure 13).

6.8.12. The DoD Components shall comply with Department of Labor Office of Workers' Compensation Programs (OWCP) Hearing Loss Medical Requirements (enclosure 14) when completing physician and audiologist reports. Those reports shall be supplemented by any recommendation for hearing aids, hearing protection, further

referral, or an interpretation of test results with site-of-lesion and a noise exposure history.

6.8.13. Permanent STS is reportable if the STS results in hearing thresholds meeting or exceeding a 25 dB average at the same frequencies.

6.8.14. When an OSHA-recordable hearing loss occurs from an instantaneous event (e.g., acoustic trauma from a one-time blast over pressure) the hearing loss shall be recorded as an "injury according to OSHA-recommended guidelines." NIOSH age corrections shall NOT be used for calculating an OSHA recordable hearing loss. That loss shall only be reported once unless an additional OSHA-recordable loss of hearing is incurred.

## 6.9. Personnel Assignments

6.9.1. The DoD Components may require personnel under consideration for entry-level DoD service (either civilian or military duty), in an occupational specialty that involves routine exposure to hazardous noise, to meet minimum pre-selection hearing level criteria. The DoD Components may develop minimum pre-selection criteria and designate applicable occupational specialties.

6.9.2. The DoD Components may establish criteria for permanently excluding personnel with a substantial hearing loss from working in hazardous noise environments. Any exclusion criteria must be applied judiciously to ensure that qualified personnel are not inappropriately excluded from their career field.

6.9.3. After repeated attempts to protect the individual's hearing have failed, the last resort shall be excluding a worker from a career field.

## 6.10. Access to Information, Training Material, and Records

6.10.1. The DoD Components shall make available to personnel copies of DoD Component Directives issued on the DoD HCP and the latest approved OSHA standard 29 CFR 1910.95 (reference (m)).

6.10.2. On request, the DoD Components shall provide affected personnel with any information on the DoD Component HCP that is supplied to the DoD Component by the Assistant Secretary of Labor for Occupational Safety and Health.

6.10.3. On request, the DoD Components shall provide workers, former workers, and representatives designated in writing by the individual civilian employees, with copies of all records about the audiometric testing and noise exposure of a specific worker, as described in DoD Instruction 6055.5 (reference (n)).

6.10.4. On request, the DoD Components shall provide representatives of the Assistant Secretary of Labor for Occupational Safety and Health with all records on the DoD Component HCP.

#### 6.11. Record-keeping

6.11.1. All audiometric testing data shall be maintained for 40 years, or the duration of employment plus 30 years, whichever is greater.

6.11.2. Results of hearing tests performed for hearing conservation and exposure documentation, shall be a permanent part of an individual's health record. DoD Components using Military Service audiometric databases shall record hearing tests on a DD Form 2215 (enclosure 13) or a DD Form 2216, "Hearing Conservation Data" (enclosure 12), as appropriate.

6.11.3. Noise exposure data shall be kept for the duration of employment plus 40 years and recorded on a DD Form 2214, "Noise Survey" (enclosure 15) or in the equivalent format with automated measurement equipment or a health hazard inventory system containing at least the mandatory data elements.

6.11.4. All personnel who are routinely exposed to hazardous noise shall be identified by name and SSN by those designated by each DoD Component to those responsible for medical surveillance and health education. That information shall be maintained by the medical surveillance personnel and updated at least semiannually by the responsible authority who develops and/or has ready access to personnel rosters.

6.11.5. Each DoD Component shall maintain a hearing conservation database for assessing the effectiveness of its HCP.

6.11.6. The following DD Forms, or computer-generated facsimiles, shall be used in the appropriate elements of each DoD Component's program:

6.11.6.1. DD Form 2214 (enclosure 15).

6.11.6.2. DD Form 2214C, "Noise Survey (Continuation Sheet)" (enclosure 16).

6.11.6.3. DD Form 2215 (enclosure 13).

6.11.6.4. DD Form 2216 (enclosure 12).

6.11.6.5. DD Form 2217, "Biological Audiometer Calibration Check" (enclosure 17).

6.12. Program Performance Evaluation. The DoD Components shall evaluate their HCP effectiveness, annually, based on the prevalence of STSs during the annual audiograms, and on the percent of identified personnel receiving annual audiograms (enclosure 18).

## 7. INFORMATION REQUIREMENTS

The record keeping requirements of this Instruction are exempt from licensing, in accordance with subparagraph 5.4.2. of DoD Directive 8910.1 (reference (o)).

8. EFFECTIVE DATE

This Instruction is effective immediately.

  
Michael W. Wynne  
Acting Under Secretary of Defense  
(Acquisition, Technology and Logistics)

Enclosures - 18

- E1. References, continued
- E2. Definitions
- E3. Noise Exposure Computation
- E4. Table E4.T1. NSNs for Approved Hearing Protective Devices
- E5. Figure E5.F1. Earplug Seating Device and Carrying Case Poster
- E6. Figure E6.F1. Earplugs: General Information Poster
- E7. Figure E7.F1. Single-Flange Earplug Instruction Poster
- E8. Figure E8.F1. Triple-Flange Earplug Instruction Poster
- E9. Figure E9.F1. Foam Earplug Instruction Poster
- E10. Figure E10.F1. Noise Muffs: General Information Poster
- E11. Figure E11.F1. Audiometric Instructions Poster
- E12. Figure E12.F1. DD Form 2216, "Hearing Conservation Data"
- E13. Figure E13.F1. DD Form 2215, "Reference Audiogram"
- E14. DoL and OWCP Hearing Loss Medical Requirements
- E15. Figure E15.F1. DD Form 2214, "Noise Survey Sound Level Meter Survey"
- E16. Figure E16.F1. DD Form 2214C, "Noise Survey Sound Level Meter Survey (Continuation Sheet)"
- E17. Figure E17.F1. DD Form 2217, "Biological Audiometer Calibration Check"
- E18. HCP Effectiveness Evaluation Procedures

E1. ENCLOSURE 1

REFERENCES, continued

- (e) [DoD Instruction 6055.1](#), "DoD Occupational Safety and Health (SOH) Program," August 19, 1984
- (f) ANSI Standard S1.4A (1985) through S1.4-1983, "Specifications for Sound Level Meters," current edition
- (g) ANSI Standard S1.25-1991, "Specifications for Personal Noise Dosimeters," 1991
- (h) Title 29, Code of Federal Regulations, Subpart 1910.145, "Specifications for Accident Prevention Signs and Tags," current edition
- (i) Section 4914 of title 42, United States Code, "Development of Low-Noise-Emission Products"
- (j) Military Standard 882C,<sup>2</sup> "System Safety Program Requirements," January 19, 1993
- (k) ANSI Standard S1.11-1993, "Specifications for Octave-Band and Fractional Octave-Band Analog and Digital Filters," current edition
- (l) ANSI Standard S3.6-1989, "Specifications for Audiometers," current edition
- (m) Title 29, Code of Federal Regulations, Subpart 1910.95, "Occupational Noise Exposure," current edition
- (n) [DoD Instruction 6055.5](#), "Industrial Hygiene and Occupational Health," January 10, 1989
- (o) [DoD Directive 8910.1](#), "Management and Control of Information Requirements," June 11, 1993

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<sup>2</sup> Standard can be obtained on line at [www.denix.osd.mil](http://www.denix.osd.mil)

## E2. ENCLOSURE 2

### DEFINITIONS

E2.1.1. Decibel (dB). A unit of measurement of Sound Pressure Level (SPL). When used to measure SPL, a dB is equal to 20 times the common logarithm of the ratio of the existing sound pressure to a reference sound pressure of 20 micropascals.

E2.1.2. Decibel A-Weighted (dBA). The standard abbreviation for sound levels measured with an instrument set to the A-weighting network. The A-weighting network reduces the contribution of lower frequencies, which are of less concern for hearing conservation.

E2.1.3. Decibel C-Weighted (dBC). The standard abbreviation for sound levels measured with an instrument set to the C-weighting network. The C-weighting network corresponds to the ear's response for levels above 85 dB.

E2.1.4. Decibel Peak Spl (dB). Standard abbreviation for peak sound level equal to 20 times the common logarithm of the ratio of the highest instantaneous sound pressure to a reference sound pressure of 20 micropascals. Used in the measurement of impulse noise.

E2.1.5. Potentially Hazardous Noise. Exposure to steady-state noise having an 8-hour TWA noise level of  $\geq 85$  dBA, or exposure to impulse/impact noise levels greater than 140 dB peak SPL, regardless of duration.

E2.1.6. Potentially Hazardous Noise Area. Any area where workers are likely to receive a daily total noise dose in excess of that calculated using enclosure 3, paragraph E3.1.2., or where impulse noise levels exceed 140 dB peak SPL.

E2.1.7. Hertz (Hz). A unit of measure of frequency, numerically equivalent to cycles per second.

E2.1.8. Impulse/Impact Noise. A short burst of acoustic energy consisting of either a single impulse or a series of impulses. The pressure-time history of a single impulse includes a rise of 40 dB or more in 1 second or faster to a peak pressure, followed by a somewhat slower decay of the pressure envelope to ambient pressure, both occurring within 1 second. When the intervals between impulses are less than 500 milliseconds, the noise is considered continuous, except for short bursts of automatic weapons fire, which are considered "impulse noise."

E2.1.9. Reference Audiogram. An audiogram free from auditory fatigue and other transient otologic pathology, against which future audiograms are compared.

E2.1.10. Significant Threshold Shift (STS). An STS is present when there is a change in hearing relative to the current reference audiogram of an average of less or greater than  $\pm 10$  dB or more at 2000, 3000, and 4000 Hz in either ear.

E2.1.11. Time-Weighted Average (TWA). An 8-hour time-weighted average sound level.

E3. ENCLOSURE 3  
NOISE EXPOSURE COMPUTATION

E3.1.1. When using a 3 dB time-intensity exchange rate, noise dose may be computed from noise measurements as follows:

E3.1.1.1. When the sound level is constant over the entire work shift, the noise dose "D" in percent is given by the following:

$$D=100 *C/T$$

Where "C" is the total length of the workday in hours, and "T" is the reference duration corresponding to the measured SPL. "T" is computed by the following equation:

$$T=8 *2^{85-L/3}$$

Where "L" is the measured A-weighted SPL.

E3.1.1.2. When the work shift noise exposure is composed of two or more periods of noise at different levels, the total noise dose over the workday is given by:

$$D=100(C1/T1 + C2/T2...Cn/Tn)$$

Where "Cn" indicates the total time of exposure at a specific noise level, and "Tn" indicates the reference duration for that level. "Tn" is computed by the following equation:

$$T_n=8*2^{85-L/3}$$

E3.1.1.3. When using a noise dosimeter which displays dose as a percentage of the daily limit, the TWA may be computed from noise dosimeter readings as follows in the equation below. The noise dosimeter shall be capable of integrating all noise levels from 80-130 dBA and shall use a 3 dB time-intensity exchange rate and must use an 85 dBA criterion level.

$$TWA=85 + 10 \log D/100$$

Where "TWA" is the 8-hour time-weighted average sound level; and "D" is the accumulated dose in percent exposure.

E3.1.2. When using a 4 dB time-intensity exchange rate, noise dose may be computed from noise measurements as follows:

E3.1.2.1. When the sound level is constant over the entire work shift, the noise dose "D" in percent is given by the following:

$$D=100*C/T$$

Where "C" is the total length of the workday in hours, and "T" is the reference duration corresponding to the measured SPL. "T" is computed by the following equation:

$$T=8*2^{85-L/4}$$

Where "L" is the measured A-weighted SPL.

E3.1.2.2. When the work shift noise exposure is composed of two or more periods of noise at different levels, the total noise dose over the workday is given by:

$$D=100(C1/T1 + C2/T2...Cn/Tn)$$

Where "Cn" indicates the total time of exposure at a specific noise level, and "Tn" indicates the reference duration for that level. "Tn" is computed by the following equation:

$$T_n=8*2^{85-L/4}$$

E3.1.2.3. When using a noise dosimeter displaying dose as a percentage of the daily limit, the TWA may be computed from noise dosimeter readings as follows in the equation below. The noise dosimeter shall be capable of integrating all noise levels from 80-130 dBA and shall use a 4 dB time-intensity exchange rate and must use an 85 dBA criterion level.

$$TWA=85 + 13.29 \log D/100$$

Where "TWA" is the 8-hour time-weighted average sound level; and "D" is the accumulated dose in percent exposure.

E3.1.3. When exposures to steady-state noise, including impulse noise below 130 dB peak SPL, occur simultaneously within the same 24-hour period as exposure to impulse noise above 130 dB peak SPL, the hazard criteria shall be applied separately (i.e., the allowable exposure to steady-state noise shall not be reduced because of exposure to impulse noise).

E4. ENCLOSURE 4TABLE E4.T1. NSNs FOR APPROVED HEARING PROTECTION DEVICES

| Type of protector      | Nomenclature   | National Stock Number (NSN)  | Sizes & misc. Information  |
|------------------------|--|--|--|
| Single-flange earplugs | Earplug, hearing protection, single-flange, 24s  | 6515-00-442-4765<br>6515-00-467-0085<br>6515-00-467-0089<br>6515-00-442-4807<br>6515-00-442-4813 | extra sm. (wht)<br>small (green)<br>medium (orng)<br>large (blue)<br>extra lrg (red)       |
| Triple-flange earplugs | Earplug, hearing protection, triple-flange, 24s  | 6515-00-442-4821<br>6515-00-442-4818<br>6515-00-467-0092   | small (green)<br>medium (orange)<br>large (blue)   |
| Vinyl foam earplugs    | Earplug, hearing protection, yellow 400s<br>Plug, ear, white, 400s   | 6515-00-137-6345<br>6515-01-117-7159   | 200 individual wrapped pairs, container w/ adhesive backing for attachment to wall surface |
| Silicon earplugs       | Earplug, silicone rubber, hearing protection, cylindrical, disposable, 48s and 200s  | 6515-00-135-2612<br>6515-00-133-5416   | Individual plastic case blister pack   |
| Noise muffs            | Aural protector, sound Type II<br>High Performance Muff, Navy Type I<br>Replacement seal, dome<br>Replacement filter, dome | 4240-00-022-2946<br>4240-00-759-3290<br>4240-00-979-4040<br>5965-00-674-5379                     |  |
| Earplug carrying case  | Earplug carrying case  | 6515-01-100-1674   | Includes insertion devices for single- and triple-flange earplugs                          |

E5. ENCLOSURE 5

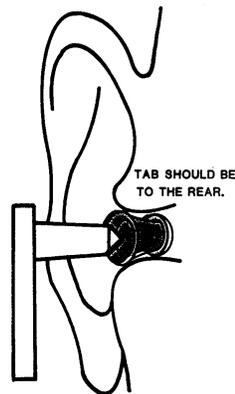
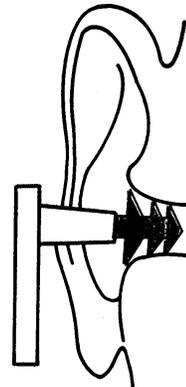
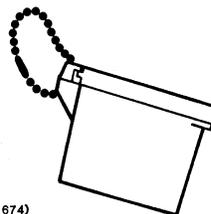
FIGURE E5.F1. EARPLUG SEATING DEVICE AND CARRYING CASE POSTER

## EARPLUG SEATING DEVICE AND CARRYING CASE

- 1** TRIPLE-FLANGE EARPLUGS (INSERTION INSTRUCTIONS):
- A. INSERT STEM OF PLUG IN OPEN END OF CASE LID.
  - B. PUSH AND WIGGLE PLUG TOWARD REAR-CENTER OF HEAD

- 2** SINGLE-FLANGE EARPLUGS (INSERTION INSTRUCTIONS):
- A. GRASP PLUG TAB BETWEEN THUMB AND FOREFINGER AND INSERT INTO EAR CANAL.
  - B. USE POINTED END OF CASE LID TO IMPROVE SNUG FIT.

- 3** GENERAL INSTRUCTIONS:
- A. WHEN NOT IN USE, KEEP PLUGS IN CARRYING CASE.
  - B. ENSURE THAT PLUGS ARE CLEANED WITH SOAP AND WATER AND ARE DRY WHEN RETURNED TO THE CASE.
  - C. WEAR YOUR EARPLUG CARRYING CASE (WITH EARPLUGS) AS PART OF YOUR WORK UNIFORM. THEY ARE PART OF YOUR PERSONAL ISSUE AND ARE TO BE RETAINED UPON CHANGE OF STATION.



(CASE AND EARPLUG INSERTER, PLASTIC, NONREFLECTIVE, 28S, NSN 6515-01-100-1674)

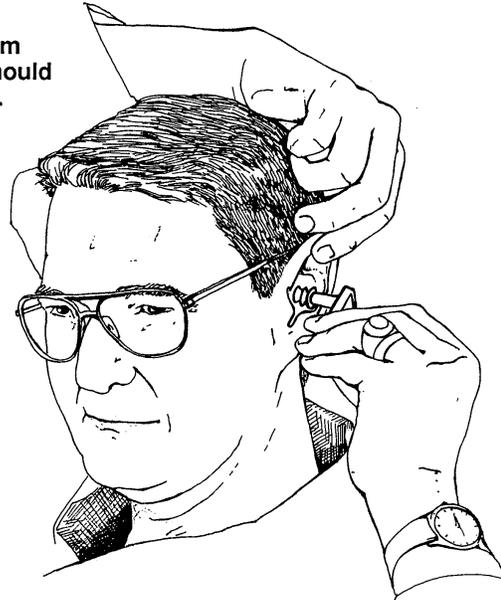
A51A POSTER 13, 1 JUN 86 (ISHB-MO-B)

E6. ENCLOSURE 6

FIGURE E6.F1. GENERAL INFORMATION POSTER

## Earplugs: General Information

1. Make the ear canal accessible by reaching over the head with opposite hand and pulling ear outward.
2. A good seal should be accomplished by a vacuum sensation (a back pressure). Also, your voice should sound muffled to you as if talking inside a barrel.
3. Plugs tend to work loose as a result of talking and chewing and must be resealed.
4. Little difficulty is experienced understanding speech when plugs are worn, if the voice is raised slightly above the level of ordinary conversation.
5. Even a small leak defeats the purpose of wearing plugs.
6. Keep plugs clean with soap and water, but ensure plugs are dry when returned to case. When not in use, keep plugs in plastic carrying case provided.
7. Earplugs are part of your personal issue and are to be retained upon change of station.

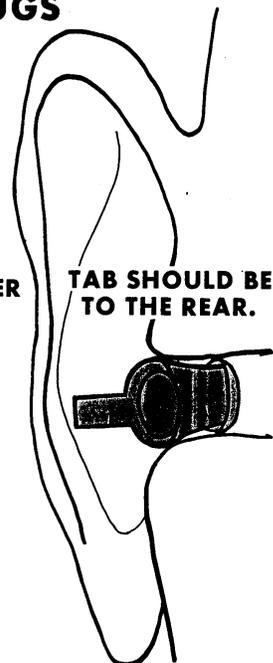


E7. ENCLOSURE 7

FIGURE E7.F1. SINGLE-FLANGE EARPLUG INSTRUCTION POSTER

**FOR MAXIMUM PROTECTION AND COMFORT,  
INSERT SINGLE FLANGE EARPLUGS  
AS FOLLOWS:**

- 1. MAKE THE EAR CANAL ACCESSIBLE BY REACHING OVER HEAD WITH OPPOSITE HAND AND PULLING EAR OUTWARD.**
- 2. GRASP PLUG TAB BETWEEN THUMB AND FOREFINGER AND INSERT PLUG INTO EAR CANAL.**
- 3. PUSH AND TWIST PLUG TOWARD REAR-CENTER OF HEAD UNTIL SEAL IS MADE.**
- 4. IF A GOOD SEAL IS NOT OBTAINED, USE SMALLER OR LARGER SIZE. SINGLE FLANGE PLUGS ARE AVAILABLE IN FIVE SIZES- EX. SMALL , SMALL, MEDIUM, LARGE, AND EX. LARGE.**



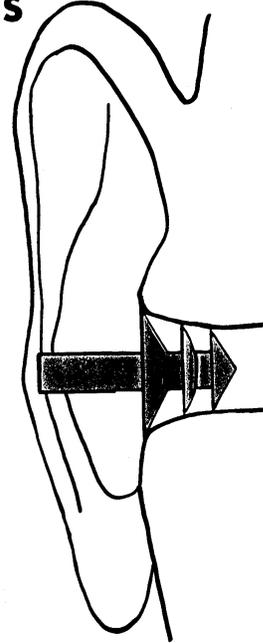
DA Poster 40-501C, Apr 1991 DISTRIBUTION: To be distributed in accordance with DA Form 12-04, block 0656, requirements for DA Poster 40-501C.

E8. ENCLOSURE 8

FIGURE E8.F1. TRIPLE-FLANGE EARPLUG INSTRUCTION POSTER

**FOR MAXIMUM PROTECTION AND COMFORT  
INSERT TRIPLE FLANGE EARPLUGS  
AS FOLLOWS :**

- 1. MAKE THE EAR CANAL ACCESSIBLE BY REACHING OVER HEAD WITH OPPOSITE HAND AND PULLING EAR OUTWARD.**
- 2. GRASP PLUG FIRMLY BEHIND LARGEST FLANGE.**
- 3. INSERT SMALLER FLANGE IN EAR CANAL. PUSH AND TWIST TOWARD REAR-CENTER OF HEAD.**
- 4. IF A GOOD SEAL IS NOT OBTAINED, USE SMALLER OR LARGER SIZE. TRIPLE FLANGE PLUGS ARE AVAILABLE IN THREE SIZES- LARGE, REGULAR, AND SMALL.**



DA Poster 40-501D, Apr 1991 DISTRIBUTION: To be distributed in accordance with DA Form 12-04, block 0656, requirements for DA Poster 40-501D.

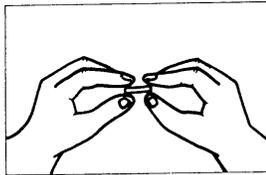
## E9. ENCLOSURE 9

### FIGURE E9.F1. FOAM EARPLUG INSTRUCTION POSTER

# FOAM EARPLUGS

FOR MAXIMUM EFFECTIVENESS AND COMFORT INSERT FOAM EARPLUGS (NSN 6515-00-137-6345) AS FOLLOWS: IMPORTANT - HANDS AND PLUGS SHOULD BE CLEAN PRIOR TO USE. DO NOT USE WHERE HAZARDOUS CHEMICALS OR MATERIALS COULD BE TRANSFERRED TO PLUG.

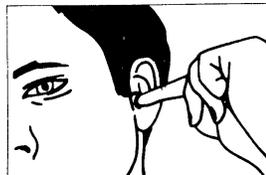
- 1** WITH BOTH HANDS GRASP THE ROUND SIDE OF THE PLUG. SLOWLY ROLL AND COMPRESS THE PLUG INTO A VERY THIN, CREASE-FREE CYLINDER.



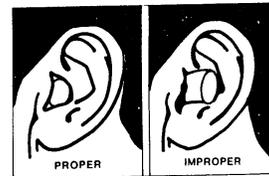
- 2** WHILE COMPRESSED, INSERT THE PLUG WELL INTO THE EAR CANAL. FITTING THE PLUG IS EASIER IF THE OUTER EAR IS PULLED OUTWARD AND UPWARD DURING INSERTION.



- 3** WITH FINGERTIP, GENTLY HOLD THE PLUG IN PLACE UNTIL IT BEGINS TO EXPAND AND BLOCK THE NOISE. QUALITY OF FIT MAY BE ESTIMATED BY OBSERVATION.



- 4** EARPLUG FIT CAN BE TESTED IN THE PRESENCE OF NOISE BY ALTERNATELY COVERING AND UNCOVERING THE EARS WITH TIGHTLY PRESSED HANDS. WITH PROPERLY FITTED PLUGS THE NOISE LEVELS SHOULD SEEM NEARLY THE SAME WHETHER OR NOT THE EARS ARE COVERED. KEEP PLUGS CLEAN BY WASHING IN MILD SOAP AND RINSING THOROUGHLY IN WATER. DISCARD IF DISCOLORATION OR DISFIGURATION OCCURS AFTER CLEANING.



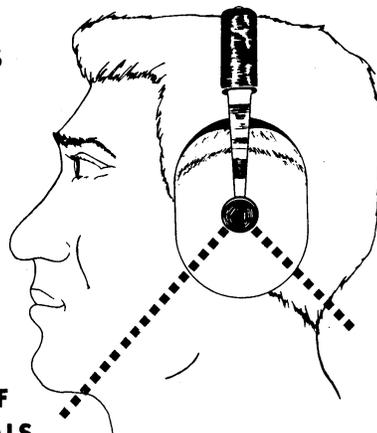
DA Poster 40-501B, Apr 1991 DISTRIBUTION: To be distributed in accordance with DA Form 12-04, block 0656, requirements for DA Poster 40-501B.

E10. ENCLOSURE 10

FIGURE E10.F1. NOISE MUFFS: GENERAL INFORMATION POSTER

**EAR MUFFS: GENERAL INFORMATION**

- 1. ADJUST HEADBAND TO INSURE EARCUP SEALS ARE IN COMPLETE CONTACT WITH HEAD.**
- 2. EARCUP SEALS MUST FIT WELL AROUND TEMPLES OF EYEGASSES.**
- 3. THE TYPE II EAR MUFF CAN BE WORN OVER THE HEAD, BEHIND THE HEAD OR UNDER THE CHIN. →**
- 4. WHEN EAR MUFFS ARE PROPERLY WORN, YOUR OWN VOICE SHOULD SOUND MUFFLED TO YOU AS IF TALKING INSIDE A BARREL.**
- 5. DO NOT BEND, ALTER OR MODIFY ANY PART OF HEADBAND, CUPS, CUP LINING OR EARCUP SEALS.**
- 6. REPLACE EARCUP SEALS THAT HAVE BECOME HARDENED, DAMAGED OR OTHERWISE UNSERVICEABLE.**
- 7. EVEN A SMALL LEAK ELIMINATES THE PROTECTION PROVIDED BY EAR MUFFS.**



AURAL PROTECTOR, SOUND, TYPE II  
NSN 4240-00-022-2946

DA Poster 40-501F, Apr 1991 DISTRIBUTION: To be distributed in accordance with DA Form 12-04, block 0656, requirements for DA Poster 40-501F.

E11. ENCLOSURE 11

FIGURE E11.F1. AUDIOMETRIC INSTRUCTIONS POSTER

# AUDIOMETRIC INSTRUCTIONS

SELF-RECORDING

1. THIS IS A HEARING CHECK.
2. YOU WILL BE LISTENING FOR SOME TONES. EACH TIME YOU HEAR A TONE, PRESS THE BUTTON. WHEN THE TONE GOES AWAY RELEASE THE BUTTON.
3. NO MATTER HOW FAINT THE TONE, PRESS THE BUTTON WHEN YOU HEAR THE TONE AND RELEASE THE BUTTON WHEN THE TONE GOES AWAY.
4. UPON COMPLETION OF YOUR HEARING CHECK, PLEASE REMAIN SEATED AND QUIET UNTIL THE OPERATOR RELEASES YOU.



USAHA POSTER 16-2, 1 (U) N 86 (03010004)

USAHA

E12. ENCLOSURE 12

FIGURE E12.F1. DD FORM 2216, "HEARING CONSERVATION DATA"

| HEARING CONSERVATION DATA  |  |                           |                                       |   |      |                                    |      |  |                          |  | 1. ZIP CODE/APD/FPQ/PAS |                               |      |      |      |
|--|--|---------------------------|---------------------------------------|---|------|------------------------------------|------|--|--------------------------|--|-------------------------|-------------------------------|------|------|------|
| <i>(This form is subject to the Privacy Act of 1974 - use Blanket PAS - DD Form 2005)</i>  |  |                           |                                       |   |      |                                    |      |  |                          |  | 01433                   |                               |      |      |      |
| 2. DOD COMPONENT   |  |                           | 3. SERVICE COMPONENT                  |   |      |                                    |      |  |                          |  |                         |                               |      |      |      |
| A. ARMY<br>N. NAVY   |  |                           | F. AIR FORCE<br>M. MARINE CORPS       |   |      | 1. OTHER DOD<br>ACTIVITY           |      |  | R. REGULAR<br>V. RESERVE |  |                         | G. NATIONAL GUARD<br>1. OTHER |      |      |      |
| 4. SOCIAL SECURITY NUMBER  |  |                           | 5. NAME (Last, First, Middle Initial) |   |      |                                    |      |  | 6. DATE OF BIRTH         |  |                         | 7. SEX                        |      |      |      |
| 00309011   |  |                           | AK, K K                               |   |      |                                    |      |  | (YYYYMMDD) 19801011      |  |                         | M<br>F - FEMALE               |      |      |      |
| 8. PAY GRADE,<br>UNIFORMED SERVICES  |  | 9. PAY GRADE,<br>CIVILIAN |                                       | 10. SERVICE DUTY<br>OCCUPATION CODE                                     |      | 11. MAILING ADDRESS OF ASSIGNMENT  |      |  |                          |  |                         |                               |      |      |      |
| 02   |  |                           |                                       | 88A   |      | SITE 5 WJ98HA<br>THERE MD 22222    |      |  |                          |  |                         |                               |      |      |      |
| 12. LOCATION - PLACE OF WORK   |  |                           |                                       |   |      | 13. MAJOR COMMAND                  |      | 14. DUTY TELEPHONE (include area code)                 |                          |  |                         |                               |      |      |      |
| ADMIN  |  |                           |                                       |   |      | FORSCOM                            |      | (888)888-888   |                          |  |                         |                               |      |      |      |
| 15. AUDIOMETRY   |  |                           |                                       |   |      |                                    |      |  |                          |  |                         |                               |      |      |      |
| 2 a. PURPOSE 1 - 90 DAY 2 - ANNUAL 3 - TERMINATION 4 - OTHER   |  |                           |                                       |   |      |                                    |      |  |                          |  |                         |                               |      |      |      |
| AUDIOMETRIC DATA<br>RE: ANSI S3.6 - 1989   |  |                           |                                       | LEFT  |      |                                    |      |  |                          | RIGHT  |                         |                               |      |      |      |
|  |  |                           |                                       | 500   | 1000 | 2000                               | 3000 | 4000   | 6000                     | 500  | 1000                    | 2000                          | 3000 | 4000 | 6000 |
| b. CURRENT AUDIOGRAM DATE<br>(YYYYMMDD) 20030908   |  |                           |                                       | 15  | 10   | 10                                 | 20   | 60   | 60                       | 15   | 10                      | 10                            | 10   | 50   | 10   |
| c. REFERENCE AUDIOGRAM DATE<br>(YYYYMMDD) 20000903   |  |                           |                                       | 20M   | 20M  | 20M                                | 20M  | 20M  | 20M                      | 20M  | 15M                     | 15M                           | 40M  | 30M  | 35M  |
| d. SIGNIFICANT THRESHOLD SHIFT<br>(STS) 1 - NO 2 - YES   |  |                           |                                       | e. THRESHOLD<br>SHIFT   |      | -10                                | -10  | 0  | 10                       |  |                         | -5                            | -5   | -30  | 20   |
| f. REMARKS (include exposure data)   |  |                           |                                       |   |      |                                    |      |  |                          |  |                         |                               |      |      |      |
| ROUTINELY NOISE EXPOSED, SEE IH REPORT FOR NOISE LEVELS, H-2, POSITIVE STS, I AM AWARE OF A CHANGE IN MY HEARING AND THE NEED TO RETURN FOR FURTHER FOLLOW-UP, SIGNATURE _____ |  |                           |                                       |   |      |                                    |      |  |                          |  |                         |                               |      |      |      |
| g. TYPE OF PERSONAL HEARING PROTECTION USED  |  |                           |                                       |   |      |                                    |      |  |                          |  |                         |                               |      |      |      |
| 5 1 - SINGLE FLANGE (VS1R) 2 - TRIPLE FLANGE 3 - HAND FORMED EARPLUGS 4 - EAR CANAL CAPS 5 - NOISE MUFFS 6 - OTHER   |  |                           |                                       |   |      |                                    |      |  |                          |  |                         |                               |      |      |      |
| h. EXAMINER NAME (Last, First, Middle Initial)   |  |                           |                                       | i. TRAINING CERTIFICATE NO.   |      | j. SERVICE DUTY OCCUPATION<br>CODE |      | k. OFFICE SYMBOL                                       |                          |  |                         |                               |      |      |      |
| SAMPLE, HCPM M   |  |                           |                                       | 020001A   |      | 72C                                |      | MMKL   |                          |  |                         |                               |      |      |      |
| 1. AUDIOMETER TYPE   |  | m. MODEL                  |                                       | n. MANUFACTURER   |      | o. SERIAL NUMBER                   |      | p. LAST ELECTROACOUSTIC<br>CALIBRATION DATE (YYYYMMDD) |                          |  |                         |                               |      |      |      |
| 3 1 - MANUAL<br>2 - SELF-RECORDING (Automatic)<br>3 - MICROPROCESSOR   |  | CCA-200                   |                                       | MAICO INC.  |      | 22716                              |      | 20030919   |                          |  |                         |                               |      |      |      |
| 16. FOLLOWUP NO. 1   |  |                           |                                       | a. MINIMUM 14 HOURS NOISE FREE SINCE CURRENT AUDIOGRAM (See item 15.b.) |      |                                    |      |  |                          |  |                         |                               |      |      |      |
| AUDIOMETRIC DATA<br>RE: ANSI S3.6 - 1989   |  |                           |                                       | LEFT  |      |                                    |      |  |                          | RIGHT  |                         |                               |      |      |      |
|  |  |                           |                                       | 500   | 1000 | 2000                               | 3000 | 4000   | 6000                     | 500  | 1000                    | 2000                          | 3000 | 4000 | 6000 |
| b. CURRENT AUDIOGRAM DATE<br>(YYYYMMDD)  |  |                           |                                       |   |      |                                    |      |  |                          |  |                         |                               |      |      |      |
| c. REFERENCE AUDIOGRAM DATE<br>(YYYYMMDD)  |  |                           |                                       |   |      |                                    |      |  |                          |  |                         |                               |      |      |      |
| d. SIGNIFICANT THRESHOLD SHIFT<br>(STS) 1 - NO 2 - YES   |  |                           |                                       | e. THRESHOLD<br>SHIFT   |      |                                    |      |  |                          |  |                         |                               |      |      |      |
| f. EXAMINER NAME (Last, First, Middle Initial)   |  |                           |                                       | g. TRAINING CERTIFICATE NO.   |      | h. SERVICE DUTY OCCUPATION<br>CODE |      | i. OFFICE SYMBOL                                       |                          |  |                         |                               |      |      |      |
| j. AUDIOMETER TYPE   |  |                           |                                       | k. MODEL  |      | l. MANUFACTURER                    |      | m. SERIAL NUMBER                                       |                          | n. LAST ELECTROACOUSTIC<br>CALIBRATION DATE (YYYYMMDD) |                         |                               |      |      |      |
| 1 - MANUAL<br>2 - SELF-RECORDING (Automatic)<br>3 - MICROPROCESSOR   |  |                           |                                       |   |      |                                    |      |  |                          |  |                         |                               |      |      |      |
| 17. FOLLOWUP NO. 2   |  |                           |                                       | a. MINIMUM 14 HOURS NOISE FREE SINCE CURRENT AUDIOGRAM (See item 15.b.) |      |                                    |      |  |                          |  |                         |                               |      |      |      |
| AUDIOMETRIC DATA<br>RE: ANSI S3.6 - 1989   |  |                           |                                       | LEFT  |      |                                    |      |  |                          | RIGHT  |                         |                               |      |      |      |
|  |  |                           |                                       | 500   | 1000 | 2000                               | 3000 | 4000   | 6000                     | 500  | 1000                    | 2000                          | 3000 | 4000 | 6000 |
| b. CURRENT AUDIOGRAM DATE<br>(YYYYMMDD)  |  |                           |                                       |   |      |                                    |      |  |                          |  |                         |                               |      |      |      |
| c. REFERENCE AUDIOGRAM DATE<br>(YYYYMMDD)  |  |                           |                                       |   |      |                                    |      |  |                          |  |                         |                               |      |      |      |
| d. SIGNIFICANT THRESHOLD SHIFT<br>(STS) 1 - NO 2 - YES   |  |                           |                                       | e. THRESHOLD<br>SHIFT   |      |                                    |      |  |                          |  |                         |                               |      |      |      |
| f. EXAMINER NAME (Last, First, Middle Initial)   |  |                           |                                       | g. TRAINING CERTIFICATE NO.   |      | h. SERVICE DUTY OCCUPATION<br>CODE |      | i. OFFICE SYMBOL                                       |                          |  |                         |                               |      |      |      |
| j. AUDIOMETER TYPE   |  |                           |                                       | k. MODEL  |      | l. MANUFACTURER                    |      | m. SERIAL NUMBER                                       |                          | n. LAST ELECTROACOUSTIC<br>CALIBRATION DATE (YYYYMMDD) |                         |                               |      |      |      |
| 1 - MANUAL<br>2 - SELF-RECORDING (Automatic)<br>3 - MICROPROCESSOR   |  |                           |                                       |   |      |                                    |      |  |                          |  |                         |                               |      |      |      |

DD FORM 2216, JAN 2000

PREVIOUS EDITION MAY BE USED.

17 - - -

E13. ENCLOSURE 13

FIGURE E13.F1. DD FORM 2215, "REFERENCE AUDIOGRAM"

| REFERENCE AUDIOGRAM  |  |                        |                                       |  |                                  |  |  |  |   | 1. ZIP CODE/APO/FPO/PAS             |  |                           |  |      |  |      |  |      |  |      |  |
|--|--|------------------------|---------------------------------------|--|----------------------------------|--|--|--|---|-------------------------------------|--|---------------------------|--|------|--|------|--|------|--|------|--|
| <i>(This form is subject to the Privacy Act of 1974 - use Blanket PAS - DD Form 2005)</i>  |  |                        |                                       |  |                                  |  |  |  |   |                                     |  |                           |  |      |  |      |  |      |  |      |  |
| 2. DOD COMPONENT   |  |                        |                                       |  | 3. SERVICE COMPONENT             |  |  |  |   |                                     |  |                           |  |      |  |      |  |      |  |      |  |
| A - ARMY<br>N - NAVY   |  |                        | F - AIR FORCE<br>M - MARINE CORPS     |  | 1 - OTHER                        |  | R - REGULAR<br>V - RESERVE             |  | G - NATIONAL GUARD<br>1 - OTHER                     |                                     |  |                           |  |      |  |      |  |      |  |      |  |
| 4. SOCIAL SECURITY NUMBER  |  |                        | 5. NAME (Last, First, Middle Initial) |  |                                  |  | 6. DATE OF BIRTH (YYYYMMDD)            |  | 7. SEX  |                                     |  |                           |  |      |  |      |  |      |  |      |  |
| 003090078  |  |                        | A I I I I I I I I I                   |  |                                  |  | 19810831                               |  | M M - MALE<br>F - FEMALE                            |                                     |  |                           |  |      |  |      |  |      |  |      |  |
| 8. PAY GRADE, UNIFORMED SERVICES   |  | 9. PAY GRADE, CIVILIAN |                                       | 10. SERVICE DUTY OCCUPATION CODE                             |                                  | 11. MAILING ADDRESS OF ASSIGNMENT            |  |  |   |                                     |  |                           |  |      |  |      |  |      |  |      |  |
| Q3   |  |                        |                                       | 70A  |                                  | HANGER 99 WG49KM<br>FLYBY ROAD HERE MD 22222 |  |  |   |                                     |  |                           |  |      |  |      |  |      |  |      |  |
| 12. LOCATION - PLACE OF WORK   |  |                        |                                       |  | 13. MAJOR COMMAND                |  | 14. DUTY TELEPHONE (include area code) |  |   |                                     |  |                           |  |      |  |      |  |      |  |      |  |
| THERE  |  |                        |                                       |  | NGB                              |  | (888) 888-8888                         |  |   |                                     |  |                           |  |      |  |      |  |      |  |      |  |
| AUDIOMETRY   |  |                        |                                       |  |                                  |  |  |  |   |                                     |  |                           |  |      |  |      |  |      |  |      |  |
| 15. REASON FOR CONDUCTING AUDIOGRAM  |  |                        |                                       |  |                                  |  |  |  |   |                                     |  |                           |  |      |  |      |  |      |  |      |  |
| 1 - REFERENCE ESTABLISHED PRIOR TO INITIAL DUTY IN HAZARDOUS NOISE AREAS   |  |                        |                                       | 2 - REFERENCE ESTABLISHED FOLLOWING EXPOSURE IN NOISE DUTIES |                                  |  |  | 3 - REFERENCE RE-ESTABLISHED AFTER FOLLOW-UP PROGRAM |   |                                     |  |                           |  |      |  |      |  |      |  |      |  |
| 16. AUDIOMETRIC DATA RE: ANSI S3.6 - 1989  |  |                        |                                       |  |                                  |  |  |  |   |                                     |  |                           |  |      |  |      |  |      |  |      |  |
| LEFT   |  |                        |                                       |  |                                  | RIGHT  |  |  |   |                                     |  |                           |  |      |  |      |  |      |  |      |  |
| 500  |  | 1000                   |                                       | 2000   |                                  | 3000   |  | 4000   |   | 500                                 |  | 1000                      |  | 2000 |  | 3000 |  | 4000 |  | 5000 |  |
| 0  |  | 0                      |                                       | 0  |                                  | 5  |  | 5  |   | 5                                   |  | 60                        |  | 60   |  | 60   |  | 60   |  | 60   |  |
| 17. DATE OF AUDIOGRAM (YYYYMMDD)   |  |                        |                                       |  |                                  |  |  |  |   |                                     |  |                           |  |      |  |      |  |      |  |      |  |
| 200030916  |  |                        |                                       |  |                                  |  |  |  |   |                                     |  |                           |  |      |  |      |  |      |  |      |  |
| 18. MEETS REFERRAL CRITERIA  |  |                        |                                       | 19. MILITARY TIME OF DAY (Optional)                          |                                  | 20. HOURS SINCE LAST NOISE EXPOSURE          |  | 21. EAR, NOSE, AND THROAT PROBLEM AT TIME OF TEST    |   |                                     |  |                           |  |      |  |      |  |      |  |      |  |
| 2 - YES  |  |                        |                                       | 0942   |                                  | 14   |  | 1 - NO 2 - YES 3 - UNKNOWN                           |   |                                     |  |                           |  |      |  |      |  |      |  |      |  |
| 22. EXAMINER   |  |                        |                                       |  |                                  |  |  |  |   |                                     |  |                           |  |      |  |      |  |      |  |      |  |
| a. NAME (Last, First, Middle Initial)  |  |                        |                                       |  | b. TRAINING CERTIFICATION NUMBER |  | c. SERVICE DUTY OCCUPATION CODE        |  | d. OFFICE SYMBOL                                    |                                     |  |                           |  |      |  |      |  |      |  |      |  |
| SAMPLE, HCPM M   |  |                        |                                       |  | 020001A                          |  | 72C                                    |  | MMKL  |                                     |  |                           |  |      |  |      |  |      |  |      |  |
| 23. AUDIOMETER   |  |                        |                                       |  |                                  |  |  |  |   |                                     |  |                           |  |      |  |      |  |      |  |      |  |
| a. TYPE  |  |                        | b. MODEL                              |  | c. MANUFACTURER                  |  | d. SERIAL NUMBER                       |  | e. LAST ELECTROACOUSTIC CALIBRATION DATE (YYYYMMDD) |                                     |  |                           |  |      |  |      |  |      |  |      |  |
| 3 - MICROPROCESSOR   |  |                        | CCA-200                               |  | MAICO INC.                       |  | 22716                                  |  | 20030418  |                                     |  |                           |  |      |  |      |  |      |  |      |  |
| 24. PERSONAL HEARING PROTECTION  |  |                        |                                       |  |                                  |  |  |  |   |                                     |  |                           |  |      |  |      |  |      |  |      |  |
| a. TYPE ISSUED   |  |                        |                                       | b. SIZE EARPLUGS   |                                  |  |  | c. DOUBLE PROTECTION USED                            |   | d. GLASSES WORN (including goggles) |  | e. FREQUENCY GLASSES WORN |  |      |  |      |  |      |  |      |  |
| 1 - SINGLE FLANGE (VS1R)   |  | 4 - EAR CANAL CAPS     |                                       | L R  |                                  | 1 - XS 4 - L                                 |  | 1 - NO   |   | 1 - NO                              |  | 1 - ALWAYS                |  |      |  |      |  |      |  |      |  |
| 2 - TRIPLE FLANGE  |  | 5 - NOISE MUFFS        |                                       | 3 4  |                                  | 2 - S 5 - XL                                 |  | 2 - YES  |   | 2 - YES                             |  | 2 - SELDOM                |  |      |  |      |  |      |  |      |  |
| 3 - HAND FORMED EARPLUG  |  | 6 - OTHER              |                                       | 3 - M  |                                  |  |  |  |   |                                     |  | 3 - N/A                   |  |      |  |      |  |      |  |      |  |
|  |  | 7 - NONE               |                                       |  |                                  |  |  |  |   |                                     |  |                           |  |      |  |      |  |      |  |      |  |
| 25. REMARKS (include exposure data)  |  |                        |                                       |  |                                  |  |  |  |   |                                     |  |                           |  |      |  |      |  |      |  |      |  |
| ROUTINELY NOISE EXPOSED, SEE IH REPORT FOR NOISE LEVELS, H-2, ASYMETRIC HEARING LOSS, MASKING REQUIRED, HIGH FREQUENCY HEARING LOSS, LOW FREQUENCY HEARING LOSS. |  |                        |                                       |  |                                  |  |  |  |   |                                     |  |                           |  |      |  |      |  |      |  |      |  |

DD FORM 2215, JAN 2000

PREVIOUS EDITION MAY BE USED.

E14. ENCLOSURE 14

OWCP HEARING LOSS MEDICAL REQUIREMENTS AS PARAPHRASED FROM  
DOL OWCP HEARING LOSS SECTION INSTRUCTIONS

E14.1.1. The report that is submitted must include the results of an otological (ENT) examination, conducted by a physician, and the results of an audiological examination administered in a sound-treated booth.

E14.1.2. The report of the physician's ENT examination must include:

E14.1.2.1. The date and hour of examination;

E14.1.2.2. The date and hour of the claimant's last exposure to employment related noise;

E14.1.2.3. A detailed and relevant medical history;

E14.1.2.4. The physician's reasoned opinion concerning the etiology of any indicated hearing loss and, specifically, its relationship to the claimant's occupational noise-exposure history;

E14.1.2.5. The physician's recommendations for treatment, including the need for a hearing aid; and,

E14.1.2.6. The physician's original signature.

E14.1.3. The report of the audiological evaluation must include:

E14.1.3.1. An authenticated, legible, and dated audiogram consisting of pure tone air conduction threshold from 250 to 8000 Hz, including 3000 Hz, and bone conduction thresholds from 250 to 4000 Hz, also including 3000 Hz;

E14.1.3.2. The results of speech reception threshold (SRT) and speech discrimination testing, including stimuli and method of presentation (SRT and pure tone average (PTA) should agree within  $\pm 10$  dB);

E14.1.3.3. The results of an impedance test battery, including tympanometry and stapelial reflex threshold measurements;

E14.1.3.4. The standard and date of last electronic calibration, and the name of the person who performed the calibration, (our procedures require that the date of last electronic calibration be within 1 year of the date of examination) for each instrument used;

E14.1.3.5. A statement regarding the reliability of the audiological evaluation (if questionable, administer additional tests so that reliable conventional audiometric responses will be obtained); and,

E14.1.3.6. A statement indicating that the claimant was removed from any exposure to injuries noise for at least 16 hours prior to your examination.

E14.1.4. Please forward both the ENT report and the audiological evaluation to this office. Bills may only be paid when we have received the ENT report and the audiological evaluation.

E15. ENCLOSURE 15

FIGURE E15.F1. DD FORM 2214, "NOISE SURVEY SOUND LEVEL METER SURVEY"

| NOISE SURVEY<br>(Sound Level Meter Survey)  |  |                            |   |                    |   |  |                          |                            |  |                            |
|---|--|----------------------------|---|--------------------|---|--|--------------------------|----------------------------|--|----------------------------|
| 1. DATE (YYYYMMDD)<br>20040114  |  |                            |   |                    | 2. TYPE SURVEY (Enter code)<br>1 - INITIAL SURVEY 2 - RE-SURVEY 3 - OTHER   |  |                          |                            |  |                            |
| 3. SOUND LEVEL METER  |  |                            | 4. MICROPHONE   |                    |   | 5. CALIBRATOR  |                          |                            |  |                            |
| a. MANUFACTURER<br>Quest  |  |                            | a. MANUFACTURER<br>Quest                                  |                    |   | a. MANUFACTURER<br>Quest   |                          |                            |  |                            |
| b. MODEL<br>2400  |  | c. SERIAL NO.<br>JN6050042 |   | b. MODEL<br>QE7052 |   | e. SERIAL NO.<br>4498  |                          | b. MODEL<br>QC-10          |  | c. SERIAL NO.<br>QE6050058 |
| d. LAST ELECTROACOUSTIC CALIB DATE<br>(YYYYMMDD) 20031203   |  |                            | d. LAST ELECTROACOUSTIC CALIB DATE<br>(YYYYMMDD) 20031203 |                    |   | d. LAST ELECTROACOUSTIC CALIB DATE<br>(YYYYMMDD) 20031020                    |                          |                            |  |                            |
| 6. WIND SCREEN (X one)<br><input checked="" type="checkbox"/> USED <input type="checkbox"/> NOT USED  |  |                            |   |                    | 7. MEASUREMENTS OBTAINED (X one)<br><input checked="" type="checkbox"/> INDOORS <input type="checkbox"/> OUTDOORS |  |                          |                            |  |                            |
| 8. DESCRIPTION OF AREAS/DUTIES WHERE NOISE SURVEY CONDUCTED<br>(Illustrate on additional sheet and attach to form)<br>Bldg. 403 loading dock<br>Bldg. 403 materials hold bay<br>Bldg. 403 utilities room<br>Bldg. 403 shipping room (see sketch for 85 dBA contour around banding machine and compressor)<br>Bldg. 403 abrasive blaster room  |  |                            |   |                    |   | 9. PRIMARY SOURCE OF NOISE<br>Abrasive blasters, boiler                      |                          |                            |  |                            |
|   |  |                            |   |                    |   | 10. SECONDARY SOURCE OF NOISE<br>Air handlers, compressor, banding machines, |                          |                            |  |                            |
| 11. SOUND LEVEL DATA  |  |                            |   |                    |   | 12. PROTECTION REQUIRED (re: dBA - Level)                                    |                          |                            |  |                            |
| b. LOCATION   |  | b. METER ACTION            | c. dBC  | d. dBA             | e. RISK ASSESSMENT CODE   | a. NONE (less than 85)   | b. PLUG OR MUFF (85-108) | c. PLUG AND MUFF (106-118) | d. PLUG + MUFF + TIME LIMIT (Greater than 118) |                            |
| Loading dock  |  | S                          |   | 65-88              | 4   | X  |                          |                            |  |                            |
| Materials hold bay  |  | S                          |   | 81                 | 5   |  |                          |                            |  |                            |
| Utilities room boiler off (normally unoccupied)   |  | S                          |   | 79                 | 5   | X  |                          |                            |  |                            |
| Utilities room boiler on  |  | S                          |   | 89                 | 4   |  | X                        |                            |  |                            |
| Shipping room   |  | S                          |   | 78-96              | TBD   |  | X                        |                            |  |                            |
| Abrasive blast room, general area (see continuation sheet for individual blast)   |  | S                          |   | 95-101             | 2   |  | X                        |                            |  |                            |
| NOTES: Range of levels noted by /; i.e., 102/109. At operator stations, measure at ear level.<br>METER ACTION: Enter F for fast meter action and S for slow meter action.   |  |                            |   |                    |   |  |                          |                            |  |                            |
| 13. REMARKS (i.e., Area and equipment posted, hearing protection in use, etc.)<br>Blaster room posted and hearing protection was worn. Operators rotate machine assignments. Double hearing protection not currently required.<br>Shipping room has 85 dBA contours marked around banding machine and compressor<br>Loading dock is 88 dBA briefly and uncontrollably, as trucks back in.                       |  |                            |   |                    |   |  |                          |                            |  |                            |
| 14. MORE DETAILED NOISE EVALUATION REQUIRED: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO (If "YES," identify type evaluation needed.)<br>Dosimetry required in blaster room to determine if operators need double hearing protection and on which machines (if TWA > 103 dBA); and in shipping room to determine if clerks should be in the hearing conservation program (TWA > 85 dBA) |  |                            |   |                    |   |  |                          |                            |  |                            |
| 15. NAME(S) OF PERSON(S) IDENTIFIED FOR AUDIOMETRIC MONITORING (Use additional sheet if more space is needed and attach to form)<br>All persons assigned to blaster room. Shipping clerks if indicated by dosimetry. See attached roster for names.   |  |                            |   |                    |   |  |                          |                            |  |                            |
| 16. SUPERVISOR OF NOISE-HAZARDOUS AREA OR OPERATION   |  |                            |   |                    |   |  |                          |                            |  |                            |
| a. NAME (Last, First, Middle Initial)<br>Stout, Herbert, P.   |  |                            | b. TELEPHONE (include area code)<br>(410) 555-1234        |                    |   | c. ORGANIZATION<br>USASBO  |                          |                            |  |                            |
| 17. SURVEY PERFORMED BY (Last Name, First Name, MI)<br>Roe, Richard, F.   |  |                            |   |                    | 18. HEARING CONSERVATION MONITOR (Last Name, First Name, MI)<br>Doe, Mary, Q.                                     |  |                          |                            |  |                            |

DD FORM 2214, JAN 2000

PREVIOUS EDITION MAY BE USED.

USAPA V1.00

**INSTRUCTIONS**

(Refer to DoD Component Instructions for Additional Guidance)

**PURPOSE:** This form is intended to record noise survey results for the identification of potentially noise-hazardous environments.

**GENERAL:** Print all information in ink. Only medical, industrial hygiene, safety, or engineering personnel who meet training requirements specified by the DOD components will make sound level measurements.

1. Date - Enter date noise survey conducted (e.g., if Jan. 14, 1999, enter 19990114).
2. Type, Survey - Enter appropriate numeric code in box (e.g., enter "1" if area or operation not surveyed before or no available records of previous survey; enter "2" if resurvey conducted at regular intervals (such as once each 12 months); or enter "3" if noise being reevaluated to confirm validity of previously obtained measurements or for purposes other than indicated).
3. Sound Level Meter:
  - a. Mfg - Enter name of company that produced sound level meter.
  - b. Model - Enter manufacturer's designation.
  - c. Serial No. - Enter manufacturer's serial number.
  - d. Last Electroacoustic Calib Date - Enter year, month, day (see Item 1) of last comprehensive calibration required by DOD component. Not to include calibration checks made with acoustical calibrator.
4. Microphone (Fill in this section if microphone is detachable from sound level meter)
  - a. Manufacturer - Enter name of company that produced microphone.
  - b. Model - Enter manufacturer's designation.
  - c. Serial No. - Enter manufacturer's serial number.
  - d. Last Electroacoustic Calib Date - Enter year, month, and day (see Item 1) of last comprehensive calibration as required by DOD component.
5. Calibrator:
  - a. Manufacturer - Enter name of company that produced calibrator.
  - b. Model - Enter manufacturer's designation.
  - c. Serial Number. Enter manufacturer's serial number.
  - d. Last Electroacoustic Calib Date. Enter year, month, and day (see Item 1) of last comprehensive calibration as required by DOD component.
6. Wind Screen - Check appropriate box indicating if manufacturer's device to reduce wind noise is mounted over microphone assembly.
7. Measurements Obtained - Check appropriate box indicating if measurements obtained indoors or outdoors.
8. Description of Areas/Duties Where Noise Survey Conducted - Include building number(s), name of activity and/or operation, identify specific microphone locations, performance conditions and descriptions of machinery (e.g., rpm, load, etc.). Where applicable, include noise-hazard contours of area. On additional sheet make simple line drawing of area and identify noise sources and locations of measurement.
9. Primary Source of Noise - If possible, identify the location(s) of the highest dBA value.
10. Secondary Source of Noise - If possible, identify all other noise sources when the primary noise source is off (e.g., background noise sources and other noise sources that may or may not be noise hazardous).

11. Sound Level Data
    - a. Location - Position where measurement is obtained should correspond with those identified, or illustrated on form.
    - b. Meter Action - See Notes in Sound Level Data Sec. levels measured with weighting switch of meter in "C" position.
    - c. dBC - If required by DOD component, enter sound levels measured with weighting switch of meter in "C" position.
    - d. dBA - Enter sound levels measured with weighting switch of meter in "A" position. See NOTES in Sound Level Data Section.
    - e. Risk Assessment Code - Enter expression of risk that combines elements of hazard severity and mishap probability. Hazard severity categories shall be assigned by roman numeral as follows:
      - (1) Category I - Catastrophic: May cause death or loss of a facility (Code I).
      - (2) Category II - Critical: May cause severe injury, e.g., severe occupational illness, or major property damage (Code II).
      - (3) Category III - Marginal: May cause minor injury, e.g., minor occupational illness, or minor property damage (Code III).
      - (4) Category IV - Negligible: Probably would not affect personnel safety or health, but is nevertheless in violation of specific criteria (Code IV). Mishap probability shall be assigned capital letter according to following criteria:
        - (a) Subcategory A: Likely to occur immediately or within a short period of time (Code A).
        - (b) Subcategory B: Probably will occur in time (Code B).
        - (c) Subcategory C: May occur in time (Code C).
        - (d) Subcategory D: Unlikely to occur (Code D).
- Enter codes as IIB, IIIC, etc. Refer to DOD Instruction 6055.1/DOD component instructions for specific definitions and guidance.
12. Protection Required (re: dBA Level)
    - a. None (less than 85: If dBA levels less than 85, check this column. No hearing protectors required.
    - b. Plug or Muff (85 - 108): If dBA levels 85 - 108 inclusive, check this column. Earplugs, ear muffs, ear-canal caps, or noise-attenuating helmet required.
    - c. Plug and Muff (108 - 118): If dBA levels over 108 to 118 inclusive, check this column. Earplugs worn in combination with ear muffs or noise-attenuating helmet required.
    - d. Plug, Muff & Time: If dBA levels over 118, check this column. Earplugs worn in combination with ear muffs or noise-attenuating helmet and time limit (to be determined by DOD component) required.
  13. Remarks - Enter type of hearing protection in use, whether area and equipment posted with appropriate caution signs, etc.
  14. More Detailed Noise Evaluation Required - Check "yes" box if more detailed noise evaluation is required; check "no" box if not. Specify the type of evaluation needed (e.g., octave band analysis, etc.).
  15. Name(s) of Persons Identified for Audiometric Monitoring - List names of individuals routinely exposed to noise in preceding locations.
  16. Supervisor of Noise - Hazardous Area or Operation - Enter name (surname, given name, & middle initial) of the first-echelon (immediate supervisor of the location (and personnel) surveyed).
  17. Survey Performed by - Enter name (surname, given name & middle initial) of individual performing survey & signature.
  18. Hearing Conservation Monitor - Enter name of individual reviewing survey results & signature. Usually local surgeon or designated representative.





## INSTRUCTIONS

(Refer to DoD Component Instructions for additional guidance.)

**PURPOSE:** This form is used to record biological/electroacoustic monitor checks of the calibration of one audiometer. Hearing threshold levels of one person tested on this audiometer are recorded as well as notations of any signal distortions and noise transients.

**GENERAL:** Print all information in ink. Biological audiometer calibration checks will be performed every day the audiometer is used. More frequent intervals (e.g., daily checks) may be required by the DoD component. Start a new form if a different listener is used and/or after the audiometer is re-calibrated.

## 1. AUDIOMETER.

- a. **Manufacturer.** Enter name of company that produced audiometer.
- b. **Model.** Enter manufacturer's model designation.
- c. **Serial Number.** Enter manufacturer's serial number.
- d. **Last Electroacoustic Calibration Date.** Enter year, month, and day of last electroacoustic determination of this audiometer's performance specifications. If January 31, 2000, enter 2000131.

## 2. LISTENER.

- a. **Name.** Enter surname, given name and middle initial of individual being tested, i.e., the person listening through earphones of audiometer.
- b. **Facility.** Enter name of installation (e.g., Fort Bliss).
- c. **Location.** Enter state or APO (e.g., TX, etc.).

## 3. DATES AND DATA REVIEW.

- a. **Date.** Enter year, month, and day (see Item 1.d.) of each biological calibration check.
- b. **Name of Examiner.** Enter surname, given name and middle initial of individual operating audiometer.

## 3. DATES AND DATA REVIEW (Continued)

## c. Calibration Check.

(1) **Pass:**  $\pm 5$  dB of Baseline at 500 - 4000 Hertz (Hz) and  $\pm 10$  dB at 6000 Hz. Mark (X) this column if periodic biological calibration check is within  $\pm 5$  dB of baseline at 500 - 4000 Hz and  $\pm 10$  dB at 6000 Hz (e.g., if baseline of 15 dB has been established at 1000 Hz in right ear, any of the following hearing threshold levels obtained on periodic check would require no action: 10, 15, or 20 dB).

(2) **Fail:** Greater Than  $+ 5$  dB of Baseline at 500 - 4000 Hz and  $\pm 10$  dB at 6000 Hz. Mark this column if periodic biological calibration check is greater than  $+ 5$  dB of baseline at 500 - 4000 Hz and  $\pm 10$  dB at 6000 Hz (e.g., if baseline of 15 dB has been established at 1000 Hz in right ear, any threshold levels of 5 dB or less or 25 dB or greater would require action). This discrepancy must be accounted for or audiometer should receive an electroacoustic calibration. Refer to DoD component instructions for further guidance.

## 4. HEARING THRESHOLD LEVELS OF TEST FREQUENCIES.

- a. **Baseline.** After listener has demonstrated test-retest reliability (i.e., if test results of several pre-tests are consistently within  $+ 5$  dB of each other), enter hearing threshold levels of last test results in increments of 5 dB (e.g., 0, 5, 10, 15, etc.).
  - b. **Periodic Biological Calibration Checks.** Enter hearing threshold levels in increments of 5 dB. Use a separate line for each calibration check.
5. **REMARKS.** Enter any comments pertaining to signal distortion or noise transients including date of check. Include additional information on location of the audiometer (e.g., building number and room number) and the type of acoustic test environment (e.g., single-walled, single-person audiometric examination booth, etc.).

## E18. ENCLOSURE 18

### HCP EFFECTIVENESS EVALUATION PROCEDURES

E18.1.1. The DoD Components shall evaluate HCP effectiveness by monitoring STS rates for hazardous noise exposed military, civilian, and combined totals. That measure is intended primarily for installations to monitor their effectiveness in preventing noise-induced hearing loss. Organizations at higher levels may also use STS rates to monitor effectiveness of unit policy. Because those STS rates are heavily influenced by the percentage of exposed workers actually receiving annual audiograms, the rate of completion of audiograms is also measured.

E18.1.1.1. STS Rates. STS rate is defined as the "number of STSs identified during annual audiograms, regardless of the findings of follow-up audiometry, for each 100 workers identified as potentially exposed to hazardous noise and tested during the annual reporting period." STS rates should be monitored over time with statistical process control to identify changes in statistical behavior. An example with notional data follows (figure E18.F1.). Other factors may influence STS rates and shall be considered in reviewing STS rates include the following:

E18.1.1.1.1. Criteria used for placing workers on annual monitoring.

E18.1.1.1.2. Frequency distribution of continuous and intermittent noise exposures for civilian and military personnel in industrial operations.

E18.1.1.1.3. Distribution of age and gender for the exposed population.

E18.1.1.2. Audiogram Completion Rates. Completion rates are defined as the "percentage of workers identified as requiring annual audiograms who receive their audiograms.

Figure E18.F1. Example with Notional Data: Significant Threshold Shift Rate  
**Significant Threshold Shift (STS) Rate**  
 (notional data)

