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MARINE CORPS ORDER 6260.1E

From: Commandant of the Marine Corps
To: Distribution List

Subj: MARINE CORPS HEARING CONSERVATION PROGRAM

Ref: (a) MCO P5100.8F
(b) OPNAVINST 5100.23E
(c) Navy Environmental Health Center, (NEHC) TM 6260.51.99-1
(NOTAL)
(d) NEHC Industrial Hygiene Field Operations Manual (NOTAL)

Encl: (1) Marine Corps Hearing Conservation Program Procedures
(2) Definitions

1. Purpose. To establish a hearing conservation program for Marine Corps personnel and to amplify policy of reference (a) on the prevention of occupational illness.

2. Cancellation. MCO 6260.1D.

3. Background. Repeated exposure to hazardous noise from aircraft, weapons, vehicles, industrial and recreational activities may cause noise-induced hearing loss. This loss may be temporary or permanent, depending on the duration of noise exposure, intensity of the noise, and susceptibility of the individual. A comprehensive hearing conservation program will help prevent this occupational hearing loss.

4. Summary of Revision. This Order "delineates" the responsibilities of various participants in the implementation of the Marine Corps Hearing Conservation Program.

5. Applicability and Scope. This Order applies to all Marine Corps military and civilian personnel and operations worldwide. The Marine Corps Hearing Conservation Program shall include all the program elements of enclosure (1). Enclosure (2) contains selected applicable definitions.

6. Action.

a. Addresses shall take appropriate action to ensure compliance with this Order. Where work areas and operations have hazardous noise levels, as

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defined in enclosures (1) and (2), an effective hearing conservation program shall be implemented and enforced. The hearing conservation and testing procedures of references (b), (c), and (d) shall be followed. These references are readily available on the internet from the Navy Environmental Health Center at: www-nehc.med.navy.mil.

b. Commanders of installations shall ensure the hearing conservation program is included in the installation-wide safety program required by reference (a). They shall provide assistance and annual evaluations of the hearing conservation program to the activities and units under their cognizance.

7. Recommendations. Recommendations concerning the contents of the Marine Corps Hearing Conservation Program are invited. Forward such recommendations to the CMC (SD) via the chain of command.

8. Reserve Applicability. This Order is applicable to the Marine Corps Reserve.



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MARINE CORPS HEARING CONSERVATION PROGRAM PROCEDURES

1. Introduction. The Marine Corps Hearing Conservation Program goal is to prevent Marine Corps personnel from suffering occupational hearing loss due to noise exposure and ensure auditory fitness for duty in the Marine and civilian workforce. The ear has no mechanism to block out sound; it simply receives all the noise. If this noise is a high-intensity impulse (e.g., gunfire) or a loud continuous sound (e.g., jet) and it keeps striking the ear complex, eventually, hearing loss may occur. Because of its incremental and cumulative nature, occupational hearing loss may not be noticed until serious impairment has already taken place. If the noise-induced hearing loss is permanent, medical treatment cannot correct the condition or restore hearing. Noise-induced hearing loss can be prevented by reducing the amount of noise produced at the source, limiting the exposure time, or stopping the noise from reaching the ear.

2. Responsibilities.

a. Commanders, Commanding Officers, and Officers-In-Charge shall ensure:

(1) Activities institute a hearing conservation program where a potential noise hazard has been identified, and maintain a roster of personnel placed in the program.

(2) Activities, in cooperation with the cognizant medical treatment facility, annually evaluate hearing conservation program effectiveness.

(3) Activities eliminate or reduce hazardous noise levels through the use of engineering controls.

(4) All areas, work sites, and equipment under their cognizance, identified as noise hazardous are labeled.

(5) Activities provide personal Hearing Protective Devices (HPDs), and ensure proper usage by personnel where administrative or engineering controls are identified as infeasible or ineffective.

(6) Emphasis is placed upon leadership by example regarding the wearing of HPDs.

(7) Disciplinary action is taken against personnel and supervisors for failure to comply with the personal hearing protection requirements.

b. Supervisors shall ensure that:

(1) A copy of this Order and any local command directives issued on the hearing conservation program is made available to all personnel.

(2) A copy of 29 CFR 1910.95, "Occupational Noise Exposure" is posted in all industrial noise-hazardous areas.

(3) The use of hearing protection is enforced in accordance with this Order.

(4) Personnel routinely exposed to hazardous noise are identified and included on the command's hearing conservation program roster.

(5) Personnel included in the hearing conservation program receive a hearing test, HPD fitting, and refresher training during their annual medical evaluation.

c. Military and civilian personnel shall:

(1) Wear HPD whenever exposed to hazardous noise.

(2) Attend hearing tests and training sessions as scheduled.

(3) Abide by the requirements of this order and make others aware of the need to use HPDs when in noise hazardous areas.

d. Installation Safety Offices shall:

(1) In coordination with the cognizant Navy Bureau of Medicine and Surgery (BUMED) Occupational Health departments, maintain a command roster of all personnel identified for inclusion in the hearing conservation program.

(2) Ensure that initial and periodic hearing conservation training is documented.

(3) Investigate any Temporary Threshold Shifts (TTS) and Permanent Threshold Shifts (PTS), and implement corrective actions for their prevention.

(4) Enter Significant Threshold Shifts (STSS) in the appropriate injury/illness log. A STS is a change in hearing threshold level of 15 dB or more in any frequency 1000 to 4000 Hz in either ear; or an average of 10 dB or more at 2000, 3000, and 4000 Hz in either ear. STSS are considered recordable when an audiologist, otologist or occupational medicine physician confirms the shift is toward deteriorated hearing, permanent, and consistent with an occupational origin (work-related hearing loss). If the review of monitoring results shows a shift in hearing of an average of 25 dB or more at 2000, 3000, and 4000 hertz in either ear as compared to the original baseline, a log entry is required (OSHA recordable).

(5) Maintain a list of all hazardous noise areas and equipment as identified by BUMED during the noise surveys and assign RAC as appropriate.

(6) Include in the installation abatement log noise hazardous equipment whose noise levels can be reduced below 84 decibels measured with a sound level meter set on the A-weighting network (dBA) by available technology.

(7) Notify supervisors and employees of their failure to use HPDs during routine safety inspections.

(8) Maintain a list of the military combat equipment designated as potentially noise hazardous to ensure personnel are aware that wearing of HPDs is required.

e. Facilities Engineering and Public Works Center personnel shall ensure that all equipment being considered for purchase is included in plans and specifications, and has the lowest noise emission levels technologically and economically feasible.

f. BUMED is responsible for providing hearing conservation program support services to Marine Corps personnel. These services include but are not limited to:

Plans specifications, and has the lowest noise emission levels technologically and economically feasible.

f. BUMED is responsible for providing hearing conservation program support services to Marine Corps personnel. These services include but are not limited to:

(1) Evaluations of the work environment for noise hazardous operations and equipment.

(2) Recommendations for inclusion of personnel in the hearing conservation program, periodic hearing testing, and the evaluation of this testing.

(3) Initial and refresher training in conjunction with the annual hearing monitoring program.

(4) Consultations regarding investigations of any temporary or permanent threshold shift and recommendations for their prevention.

3. Noise Surveys. Initial and periodic noise surveys shall be performed under the guidelines of references (b), (c) and (d).

4. Labeling.

a. Hazardous noise areas and equipment which produce noise levels greater than 84 dBA or 140 decibels peak sound pressure level (dBP) shall be labeled. Use Hazardous Noise Warning Decals, NAVMED 6260/2, NSN 0105-GLF-004-7200 (8" X 10.5") and Hazardous Noise Warning Labels, NAVMED 6260/2A, NSN 0105-LF-004-7800 (1" X 1.5") to designate hazardous noise areas and equipment (see reference (b) for more details).

b. Posting an entire building is not recommended unless nearly all areas inside are designated hazardous noise areas.

c. Each tool or piece of equipment producing sound levels greater than 84 dBA shall be conspicuously marked.

d. Exteriors of military combatant equipment are excluded from this labeling requirement.

5. Noise Abatement. The abatement of hazardous noise levels shall be achieved by engineering controls to the maximum extent possible. More specific guidance is provided in references (b) and (d).

a. Engineering controls shall be the primary means of eliminating or reducing personnel exposure to hazardous noise. All practical design approaches to reduce hazardous noise to non-hazardous levels by engineering principles shall be explored. Engineering controls include design and maintenance of machinery, equipment and operations; substitution with less noisy machines and processes; reduction of vibrating surfaces (e.g., damping) and vibration driving forces; and enclosing or isolating the noise source, process changes and muffling devices. The design objective for engineering controls is to reduce steady state noise levels to below 84 dBA or 140 dBP. This criterion

to assure that sound levels are not above 84 dBA or 140 dBP where personnel may be present during normal operation and in deployments.

d. Administrative controls are used to minimize the number of personnel exposed to hazardous noise and the duration of their exposure until engineering controls are implemented, or when they are not fully effective or feasible. Administrative controls must be implemented when the use of HPDs is inadequate to reduce exposure at or below 84 dBA time-weighted average (TWA.)

6. Personal Hearing Protective Devices.

a. All personnel working in or entering designated hazardous noise areas must have HPDs in their possession at all times and wear them whenever the noise sources are operating, regardless of exposure time. All personnel exposed to gunfire, artillery or missile firing, under any circumstances, shall wear HPDs. In situations where noise hazardous items are checked out (e.g., tool rooms), users should show their HPDs as evidence of personal protection. A list of approved HPDs is available from the Navy Environmental Health Center Website: www-nehc.med.navy.mil/occmcd/index.htm, then view Hearing Protective Devices.

b. All Marine Corps personnel exposed to hazardous noise shall be fitted with earplugs under medical supervision and issued free of charge with a carrying case for permanent retention. For recruits, this shall be accomplished during the physical examination at the recruit depot. All other military and civilian personnel shall be provided HPDs and trained in their use prior to their exposure to potentially hazardous noise levels.

c. Double protection shall always be worn when the noise levels exceed 104 dBA or 165 dBP. All determinations on the suitability of hearing protectors and any waivers on their use shall be rendered by a competent person as determined by reference (b). Progressive degrees of hearing protection needed to prevent noise exposures are:

(1) Plug OR muff (84-104 dBA, 140-165 dBP).

(2) Plug AND muff (above 104 dBA, 165 dBP).

(3) Plug AND muff AND administrative control (when the use of HPDs do not reduce noise levels below 84 dBA or 140 dBP).

7. Hearing Testing Medical Evaluation Program.

a. All personnel routinely exposed to hazardous noise greater than 84 dBA or equal to and above 140 dBP, shall be placed in the hearing testing and evaluation program. This program shall include reference (baseline), monitoring and termination audiograms. Personnel shall receive a reference audiogram before assignment to duty in a designated hazardous noise area. The inclusion of personnel who infrequently or only incidentally enter hazardous noise areas depends on the exposure assessment by the industrial hygienist, audiologist, and/or occupational and environmental medicine physician. Reference (c) provides more detailed guidance to be followed by Marine Corps personnel as administered by BUMED.

b. All military personnel shall receive a valid baseline audiogram as part of their entrance examination. For recruits, the baseline audiogram shall be taken during their initial physical examination or upon arrival at the recruit depot. Hearing tests performed at Military Entrance Processing Stations shall not be used as baseline audiograms. All civilian personnel who are routinely exposed to hazardous noise shall be included in the hearing conservation program. They shall receive a baseline audiogram before assignment to duty in designated hazardous noise areas. All baseline and reference hearing tests shall be preceded by at least 14 hours without exposure to hazardous noise. This requirement may not be met by wearing any type of hearing protectors.

c. Personnel enrolled in the hearing conservation program should receive a monitoring audiogram at least annually for as long as they are occupationally exposed to hazardous noise. Monitoring audiograms should also be conducted when individuals complain of hearing difficulties. The monitoring audiogram is compared with the baseline or revised reference audiogram to determine if a significant threshold shift has occurred. Monitoring audiograms are designed to detect a threshold shift before the individual suffers enough hearing loss to affect communications.

d. All military personnel shall receive an audiogram upon termination of service. Civilian personnel included in the Hearing Conservation Program shall receive a termination audiogram when they either cease working in noise hazardous areas or upon termination of service. Personnel moving to other jobs (within the Marine Corps) involving hazardous noise exposure need not be given a termination audiogram. Medical Department personnel will notify the safety office of personnel with recordable hearing loss.

8. Training. Training is crucial to the success of the Marine Corps Hearing Conservation Program. All personnel included in this program shall be informed accordingly and provided initial training in hearing conservation as prescribed in reference (b). Recruits shall receive hearing conservation training at the recruit depots. The training shall consist of the following:

(a) The elements and rationale for a hearing conservation program.

(b) The effects of noise on hearing.

(c) The purpose of HPDs; the advantages, disadvantages, and attenuation of various types of HPDs; and instructions on selection, fitting, use, and care of HPDs. All personnel (military and civilian) issued personal HPDs shall receive this training.

(d) The purpose of periodic audiometric testing and an explanation of the test procedures.

(e) Encouragement to use hearing protectors when exposed to hazardous noise during off duty activities.

9. Recordkeeping. References (b) and (c) specifically outline the responsibilities of the medical department with regard to recordkeeping.

a. All noise monitoring records and audiograms that are pertinent to an individual's exposure shall be incorporated into his/her medical record.

b. A current inventory of all designated hazardous noise areas and operations shall be maintained by the installation safety office to include: noise measurements (dBA), TWA's, list of personnel at risk, and the types of control measures used.

c. Marine Corps commands are responsible for annually evaluating hearing conservation program effectiveness as identified in reference (c) and (d). Data to determine compliance will be made available by the Medical Department activity providing hearing conservation support, as extracted from the Defense Occupational Health Readiness System, Hearing Conservation (DOHRS-HC) Module.

10. Funding. Use regular operation and maintenance funds to provide the noise abatement and hearing conservation program materials. Follow the guidelines of the MCO P5100.8F and MCO P11000.5F if construction projects are necessary to correct an existing deficiency.

DEFINITIONS

1. Administrative Control. A method of limiting daily noise exposure by control of the work schedule.
2. Audiogram. A chart, graph, or table showing an individual's hearing threshold levels as a function of frequency.
3. Decibel (dB). A unit used to express the measurement of sound pressure levels. It is equal to 20 times the common logarithm of the ratio of the existing sound pressure to a reference sound pressure of 20 micropascals.
4. dBA. The standard abbreviation for sound levels measured with a sound level meter set on the A-weighting network. The A-weighting reduces the contribution of lower sound frequencies that are of less concern for hearing conservation purposes.
5. dBp. The standard abbreviation for the peak sound pressure level in decibels.
6. Engineering Control. Any procedure or method, other than an administrative control or personal hearing protection, that reduces the sound level either at the noise source or in the hearing zone of the exposed personnel.
7. Exchange Rate. Dosimeters measure a time-weighted exposure to noise above a predetermined limit and incorporate a set exchange rate in the computation. The exchange rate permits an increase in the intensity if exposure time is reduced. The BUMED exchange rate is 4 dB for a 50 percent reduction in exposure time.
8. Hazardous Noise.
 - a. Exposure to any steady state noise that exceeds 84 dBA, regardless of duration.
 - b. Exposure to impulse or impact sound pressure levels equal to or greater than 140 dBp.
9. Hazardous Noise Area.
 - a. Any work area where the sound levels (continuous or intermittent) routinely exceed 84 dBA.
 - b. Any work area where the sound pressure levels (impulse or impact noise) routinely equal or exceed 140 dBp.
10. Impulse or Impact Noise. A short burst of sound pressure consisting of either a single impulse or series of impulses. A single impulse has an abrupt rise to a peak pressure, followed by a decay back

to the ambient pressure that occurs within one second. Where the intervals between impulses are less than 500 milliseconds, the noise is considered continuous. Short bursts of automatic weapons fire are considered impulse noise.

11. Monitoring Audiograms. Periodic audiograms, obtained subsequent to the baseline or reference audiogram, that are used to detect shifts in the individual's threshold of hearing.

12. Reference (Baseline) Audiogram. A baseline audiogram is the first one performed prior to occupational exposure to hazardous noise while in government service. This baseline is considered the reference for hearing conservation purposes against which future audiograms are compared. A baseline audiogram may be re-established from the baseline after determination that a change in hearing is permanent, at which point it becomes the reference (or revised reference) audiogram. All baseline and reference audiograms must be obtained when the individual is free from auditory fatigue (at least 14 hours removed from exposure to hazardous noise. Hearing protection cannot be used to meet the criteria. There can be no transient otologic pathology (disease state of the ear or hearing) when the baseline or reference is obtained.

13. Significant Threshold Shift (STS). A change in hearing threshold relative to the baseline audiogram of an average of 10 dB or more at 2000, 3000, and 4000 Hz in either ear, or a change of plus or minus 15 dB at any frequency 1000 to 4000 Hz.

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