

Naval Audit Service



Audit Report



Management and Implementation of the Marine Corps Hearing Conservation Program

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N2011-0016
14 January 2011

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**MEMORANDUM FOR COMMANDANT OF THE MARINE CORPS
SURGEON GENERAL OF THE NAVY**

**Subj: MANAGEMENT AND IMPLEMENTATION OF THE MARINE CORPS
HEARING CONSERVATION PROGRAM (AUDIT REPORT N2011-0016)**

Ref: (a) NAVAUDSVC memo 7510 N2008-NFO000-0023, dated 16 Nov 07
(b) SECNAV Instruction 7510.7F, "Department of the Navy Internal Audit"

1. The report provides results of the subject audit announced in reference (a). Section A of this report provides our finding and recommendations, summarized management responses, and our comments on the responses. Section B provides the status of the recommendations. The full text of management responses is included in the Appendix.

2. Action planned by the Bureau of Medicine and Surgery meet the intent of Recommendation 12. This recommendation is considered open pending completion of the planned corrective actions, and is subject to monitoring in accordance with reference (b). Management should provide a written status report on the recommendations within 30 days after target completion date. The Bureau of Medicine and Surgery's responses did not provide sufficient corrective action in response to Recommendations 11, 13, and 14; therefore Recommendations 11, 13, and 14 are considered undecided and are being resubmitted to the Surgeon General of the Navy for reconsideration. The Marine Corps did not respond, and Recommendations 1-10 are considered undecided and are being resubmitted to the Commandant of the Marine Corps for reconsideration. The Commandant of the Marine Corps and the Surgeon General of the Navy are required to provide comments on the undecided recommendations within 30 days; management may comment on other aspects of the report, if desired. Please provide all correspondence to the Assistant Auditor General for Manpower and Reserve Affairs Audits, XXXXXXXX
XXXXXXXXXXXXXXXXXXXXXXXXXXXX, with a copy to the Director, Policy and Oversight, XXXXXXXXXXXXXXXXXXXX. Please submit correspondence in electronic format (Microsoft Word or Adobe Acrobat file), and ensure that it is on letterhead and includes a scanned signature.

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Subj: **MANAGEMENT AND IMPLEMENTATION OF THE MARINE CORPS
HEARING CONSERVATION PROGRAM (AUDIT REPORT N2011-0016)**

3. Any requests for this report under the Freedom of Information Act must be approved by the Auditor General of the Navy as required by reference (b). This audit report is also subject to followup in accordance with reference (b).

4. We appreciate the cooperation and courtesies extended to our auditors.



XXXXXXXXXXXXXXXXXXXX

Assistant Auditor General

Manpower and Reserve Affairs Audits

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Section A:

Finding, Recommendations, and Corrective Actions

Finding: Marine Corps Hearing Conservation Program

Reason for Audit

The audit objective was to verify that management and implementation of the Marine Corps' hearing conservation program was effective in protecting the hearing of Marine Corps personnel. Commandant of the Marine Corps Safety Division (CMC (SD)) identified Hearing Loss among Marine Corps personnel as a risk in the Fiscal Year (FY) 2008 Risk and Opportunity Assessment.

Background

Department of Defense (DoD) policy is to protect all personnel from hearing loss resulting from occupational noise exposure through a continuing, effective, and comprehensive hearing conservation program (HCP). The Marine Corps HCP goal is to prevent personnel from suffering hearing loss due to noise exposure. Repeated exposure to hazardous noise may cause noise-induced hearing loss, and personnel routinely exposed are to be placed in the hearing testing and evaluation program.

CMC (SD) implements policy and directs Marine Corps risk management, safety and occupational health programs, and serves as the Commandant's principle advisor on Marine Corps safety matters. Marine Corps commands are responsible for annually evaluating HCP effectiveness and the Medical Department is responsible for providing periodic hearing tests. Data to determine compliance is extracted from the Defense Occupational and Environmental Health Readiness System – Hearing Conservation Module, which is designed to collect, maintain, compare, and report HCP data. It is also used to monitor, improve, and manage the effectiveness of the HCPs within DoD.

In a memorandum dated 6 July 2009, the Secretary of the Navy announced that safety is a key tenet of success Department-wide, and that continual improvement of the safety and occupational health of Sailors, Marines, civilian personnel, and contractors is one of the top priorities.

We provided early status briefs and likely results to CMC (SD), the Bureau of Medicine and Surgery (BUMED), Navy and Marine Corps Public Health Center (NMCPHC), and

Commandant of the Marine Corps Health Services on 4 March 2009, 4 September 2009, 14 December 2009, 30 September 2010, and 4 October 2010. The findings in this report, while more detailed, are essentially the same as those briefed earlier.

Audit Results

Marine Corps Hearing Conservation Program Effectiveness

The Marine Corps did not know whether their HCP was effective. However, we determined that their HCP had not effectively protected the hearing of Marine Corps personnel. We identified at least 6,300 Marines who had hearing loss or hearing related cases from January 2001 through October 2008 and had been enrolled in HCP.¹ In addition, we estimate that 84 percent² of medical records for Marines who left the Service in FY 2007 did not contain both an entrance and exit audiogram within 60 days of entry into/exit from the Service, though the majority of these Marines had been enrolled in HCP. Department of Defense, Department of Navy, and Marine Corps criteria require that there be an effective HCP, and that all hearing conservation audiograms be part of a Marine's medical record.

The conditions noted above occurred for a number of reasons. First, the Marine Corps did not know the number of Marines actually enrolled in HCP and did not know who should have been enrolled in HCP. Also, an inventory of hazardous noise areas did not exist at the headquarters level, and Marines did not receive audiograms as required. In addition, performance measures and evaluation of HCP effectiveness were inconsistent, and HCP was not an assessable unit. Until these conditions are corrected, Marines will continue to unnecessarily lose hearing and the Marine Corps will not be able to meet the goal of preventing hearing loss. Marines who left service in calendar years 2007 and 2008 had 9,126 claims that were filed and granted for hearing loss and/or tinnitus.³ Using the minimum Department of Veterans Affairs (VA) compensation rate of 10 percent,⁴ we calculated an estimated short-term cost of \$134 million and a long-term cost of \$404 million for the 9,126 claims filed and granted. If these conditions continue, Marines will continue to file claims for hearing loss and/or tinnitus, which are lifetime disabilities.

A detailed discussion of the weaknesses above follows in the "Hearing Loss and Hearing Related Cases" and "Audiograms Received" sections below. The reasons these weaknesses existed and their impacts were similar; therefore, we discuss all of the

¹ Marines enrolled in HCP have audiogram records in the Defense Environmental and Occupational Health Readiness System – Data Repository (DOEHRSDR).

² There is a 95-percent confidence interval for this estimate, which is between 12 percent and 22 percent.

³ Tinnitus is "ringing in the ears," which can be an unbearable condition that reduces quality of life for those chronically affected.

⁴ According to the VA's Compensation Rate Table effective 1 December 2008, a 10 percent rate means the VA paid out \$123 per month for claims filed and granted.

reasons together and the impacts together, each in a separate section. Additional details related to pertinent guidance, background information, scope and methodology, and activities visited and/or contacted, are contained in Exhibits A through D respectively. Exhibits E through J provide Occupational Field, Audiograms in Medical Records, Aging Analysis, Hearing Loss Results, and Audiogram Frequency details.

Hearing Loss and Hearing Related Cases

We found at least 6,300 Marines, as highlighted below, who had hearing loss or hearing related cases from January 2001 through October 2008, and had been enrolled in the HCP as shown in the following table.

Table 1.

System	DMSS¹	WESS²	JDETS³
Marines in the system	6,542	19	120
Marines in the system and in HCP	6,243 (95%)	17 (89%)	113 (94%)
Marines with a positive shift⁵ (decrease in hearing) in annual audiograms	3,184 (51%)	12 (71%)	21 (19%)
Marines with 2 or more positive shifts in annual audiograms	1,167 (37%)	9 (75%)	6 (29%)
Occupational field with greatest number of Marines⁶	Infantry (2079)	Special Identifier MOS⁷ (7)	Special Identifier MOS (63)

- 1) The Defense Medical Surveillance System (DMSS) contains up-to-date and historical data on diseases and medical events.
- 2) Web Enabled Safety System (WESS) is the Naval Safety Center's on-line reporting and data retrieval system, which includes data on Marines with a Permanent Threshold Shift (PTS).⁸
- 3) The Physical Evaluation Board is an administrative board that determines whether a service member's disability prevents his or her continued performance in the Navy or Marine Corps using evaluations entered into the Joint Disability Evaluation Tracking System (JDETS).

⁵ A positive shift is +10 decibels of hearing loss or greater average change at 2000, 3000, and 4000 hertz (Hz), in either ear, on the current periodic or followup hearing tests as compared to the current reference (baseline) hearing test.

⁶ There were individuals with more than one Service Duty Occupation Code in DOEHRs; therefore, the total number of Marines in an Occupational Field was not representative of the number of unique Marines in the DOEHRs-DR with a hearing loss diagnosis in DMSS, reporting a PTS in WESS, or having a hearing related case with the Physical Evaluation Board.

⁷ Military Occupational Specialty.

⁸ Typically a positive Significant Threshold Shift (STS) (change in hearing) that persists on a followup 2 audiogram completed within 30-days of the periodic test.

See Exhibit E for details on Occupational Fields with the greatest numbers of Marines.

Marine Corps Order (MCO) 6260.1E states that the Marine Corps HCP goal is to prevent Marine Corps personnel from suffering occupational hearing loss due to noise exposure and ensure auditory fitness for duty.

In order to determine if Marines who had hearing loss or hearing related cases had been enrolled in HCP, we obtained and analyzed data from DMSS, WESS, and JDETS, as well as audiogram information from the Defense Occupational and Environmental Health Readiness System – Data Repository (DOEHRS-DR).

We then analyzed the “Shift” and “Audio Purpose” data fields in the DOEHRS-DR to identify the number of Marines with positive shifts (decrease in hearing) in their annual audiograms.⁹ We also analyzed the “Service Duty Occupation Codes” (SDOCs) data field in the DOEHRS-DR to identify the number of Marines by Military Occupational Specialty (MOS), and grouped SDOCs with the greatest number of Marines by occupational field.¹⁰

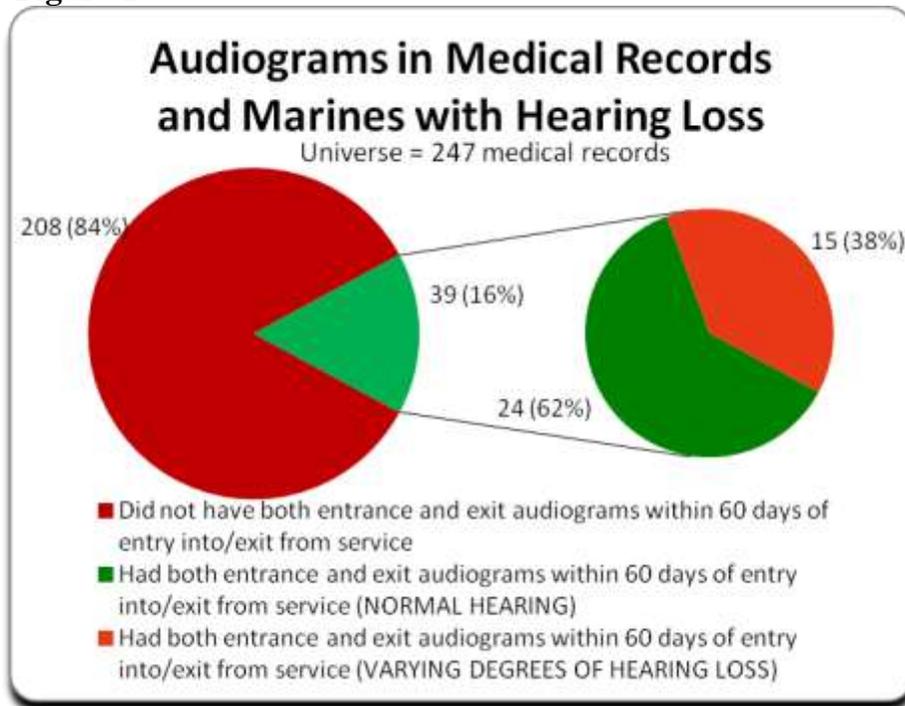
Audiograms Received

We found that 208 of 247 randomly sampled Marines’ medical records (84 percent) did not contain both an entrance and exit audiogram within 60 days of entry into/exit from service,¹¹ and that 15 of the remaining 39 Marines (38 percent) with both an entrance and exit audiogram in their medical record had varying degrees of hearing loss as shown in Figure 1.

⁹ Audiogram information in the DOEHRS-DR.

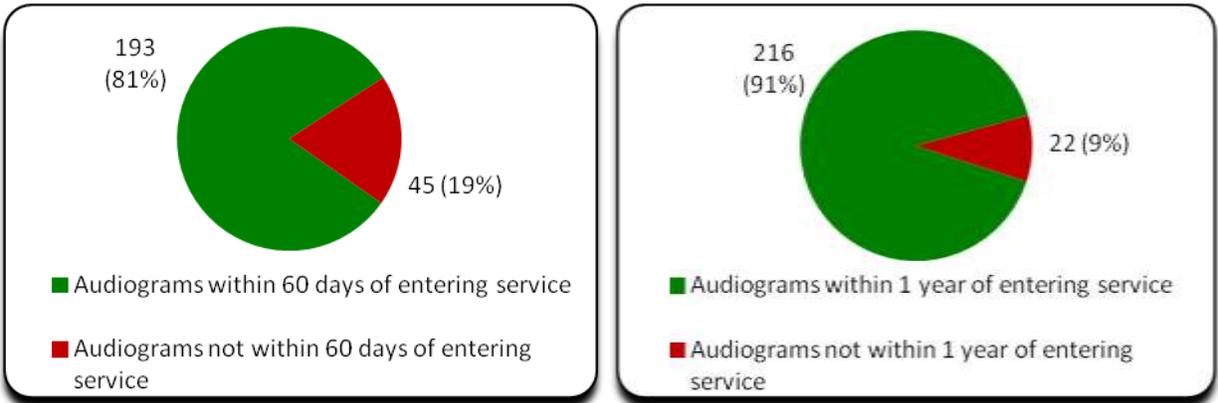
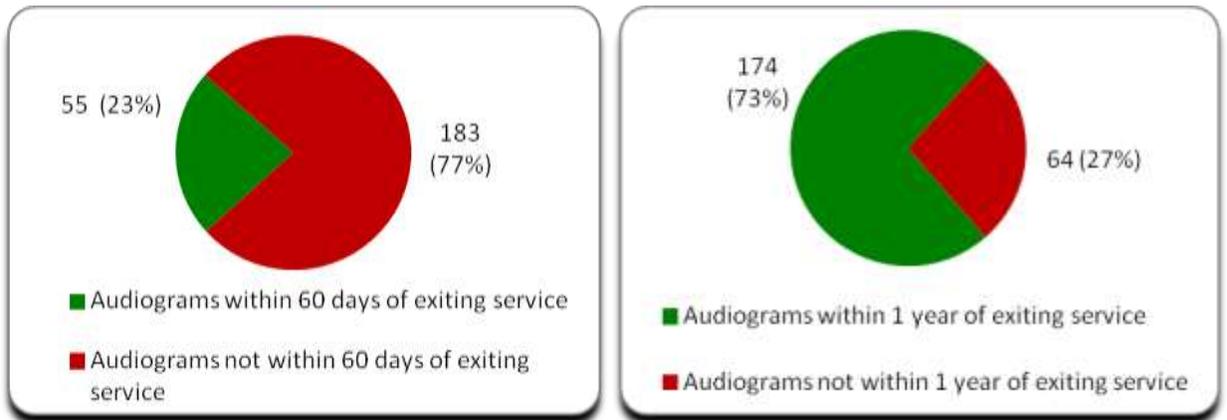
¹⁰ MOSs with similar functions are grouped together into Occupational Fields.

¹¹ We estimate that only 16 percent of medical records for Marines who left service in FY 2007 had an audiogram dated within 60 days of entry into/exit from service. There is a 95 percent confidence interval for this estimate, which is between 12 and 22 percent.

Figure 1.

See Exhibits F and G for details on audiograms in medical records and degree of hearing loss results, respectively.

We also found that Marines did not receive timely entrance and exit audiograms as shown in Figure 2.

Figure 2. Timeliness of Audiograms Received (Universe = 238 Medical Records)¹²**Entrance Audiograms****Exit Audiograms**

See Exhibit H for aging analysis of audiogram data.

In addition, we found 244 of these 250¹³ randomly sampled Marines (98 percent) had been enrolled in HCP and that the greatest number of Marines (162)¹⁴ were in the Special Identifier MOS Occupational Field (see Exhibit E for details on occupational fields with the greatest numbers of Marines).

¹² Twelve of the 250 sampled Marines did not have any audiograms in their medical records – these are not included here.

¹³ Three of these medical records were dental records and did not contain any medical information; therefore, they were not used in the medical records analysis.

¹⁴ There were individuals with more than one SDOC in the DOEHRs-DR; therefore, the total number of individuals in an occupational field was not representative of unique individuals in the DOEHRs-DR.

MCO 6260.1E states that personnel shall receive a reference audiogram¹⁵ before assignment to duty in a designated hazardous noise area and an audiogram upon termination of service. Department of Defense Instruction (DoDI) 6055.12 states that results of hearing conservation hearing tests shall be a permanent part of an individual's health record.

In order to determine if Marines received audiograms, we obtained and analyzed 250 original hard copy medical records¹⁶ for randomly sampled Marines who left service in Fiscal Year (FY) 2007¹⁷ from the VA Records Management Center. We identified audiograms for each Marine and compared audiogram dates¹⁸ to entrance¹⁹ and exit dates²⁰ in the Marine Corps Total Force System (MCTFS) and on DD Forms 214.²¹ We mirrored an Institute of Medicine (IOM) study²² and considered audiograms to be entrance or exit audiograms if they were within 60 days²³ of entry or exit date. We analyzed exit audiogram test results for the 2000, 3000, and 4000 hertz (Hz) frequencies in both ears, and determined the degree of hearing loss for each Marine. We also analyzed the number of days between the date a Marine entered/exited service and the audiogram date.

Reasons for HCP Issues

The weaknesses found in the Marine Corps' HCP occurred for a number of reasons. First, the Marine Corps did not know the number of Marines actually enrolled in HCP and did not know who should have been enrolled in HCP. Also, an inventory of hazardous noise areas did not exist, and Marines did not receive annual audiograms as required. In addition, performance measures and evaluations of HCP effectiveness were inconsistent, and HCP had not been identified as an assessable unit.

Enrollment in HCP

The Marine Corps did not know the number of Marines actually enrolled in the HCP and did not know who should have been enrolled in HCP. CMC (SD) did not know

¹⁵ A reference (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.

¹⁶ Three of these medical records were dental records and did not contain any medical information; therefore, they were not used in this analysis.

¹⁷ Based on data obtained from the Marine Corps Total Force System (MCTFS).

¹⁸ We reviewed DD Forms 2215 (Reference Audiogram), DD Forms 2216 (Hearing Conservation Data) and DD Forms 2808 (Report of Medical Examination). Although MCO 6260.1E does not consider hearing tests performed at Military Entrance Processing Stations (DD Form 2808) to be a baseline audiogram, we considered all possible audiograms in our analysis.

¹⁹ Using "Pay Entry Base Date" field from MCTFS.

²⁰ Using "Action Date" field from MCTFS.

²¹ Certificate of Release or Discharge from Active Duty (found in the medical record).

²² "IOM Noise and Military Service, Implications for Hearing Loss and Tinnitus" study (dated 22 September 2005).

²³ The IOM study considered an entrance audiogram as a test received 60 days before or after the Service member's entrance into active duty, and considered an exit audiogram as a test received within 60 days of a Service member's release from active duty.

who should be in HCP. Although BUMED and NMCPHC could report how many audiograms were conducted, they did not know how many Marines were enrolled in HCP and therefore, how many audiograms should have been conducted.

In addition, we found there were 463 of 3,903 (12 percent) active duty Marines in the Medical Readiness Reporting System (MRRS),²⁴ who were listed as being in HCP did not have records in the DOEHRS-DR.

Finally, the DOEHRS-DR did not have a field to capture when Marines entered and exited HCP. Although the DOEHRS-DR maintains historic audiogram information, it does not indicate whether an individual requires an annual audiogram.

Inventory of Marine Corps Hazardous Noise Areas

The Marine Corps did not have an inventory of hazardous noise areas. Noise surveys and hazardous noise locations were not centrally managed, and there was no electronic or centralized repository for noise hazard surveys or a central list of hazardous noise areas.

Frequency of Audiograms Received

Marines did not receive annual audiograms timely as shown in Table 2 below.

Table 2.

	Marines with a hearing loss diagnosis in DMSS	Marines who left service in FY 2007 ²⁵
More than 1 year between adjacent ²⁶ annual audiograms	59 percent*	67 percent
More than 1 year between followup ²⁷ and adjacent ²⁸ annual audiograms	64 percent	64 percent

*Percentages indicate Marines whose average time between audiograms was more than 1 year apart.

See Exhibits I and J for additional details.

HCP Effectiveness Performance Measures

CMC (SD) did not have performance measures established to determine what constituted an effective HCP, and inconsistent performance measures existed among

²⁴ The Medical Readiness Reporting System (MRRS) is used for monitoring Individual Medical Readiness and contains three fields related to hearing: (1) Date of Baseline 2215, (2) Date of 2216, and (3) Currently in HCP (yes or no).

²⁵ Based on data obtained from the MCTFS.

²⁶ Consecutive annual audiograms without any other audiograms in between.

²⁷ A followup audiogram shall be conducted when an individual's audiogram shows an STS relative to the current reference audiogram in either ear.

²⁸ Followup audiogram followed by an annual audiogram without any other audiograms in between.

lower level commands responsible for evaluating HCP effectiveness. BUMED indicated that performance measures to evaluate HCP effectiveness did not apply to them.

Evaluation of HCP Effectiveness

Marine Corps commands' evaluation of HCP effectiveness was inconsistent. The responsibility for evaluating effectiveness, how often the HCP was evaluated, and the method of evaluation varied among the lower level commands responsible for HCP effectiveness. In addition, there was no mechanism to provide program effectiveness results to CMC (SD).

HCP as an assessable unit

The Marine Corps did not identify HCP as an assessable unit or identify HCP weaknesses in their Management Control Program (MCP). BUMED and NMCPHC did not list HCP as an assessable unit or as a risk area in their MCP, even though, in the performance of HCP elements, the Medical Department is responsible for periodic hearing testing.

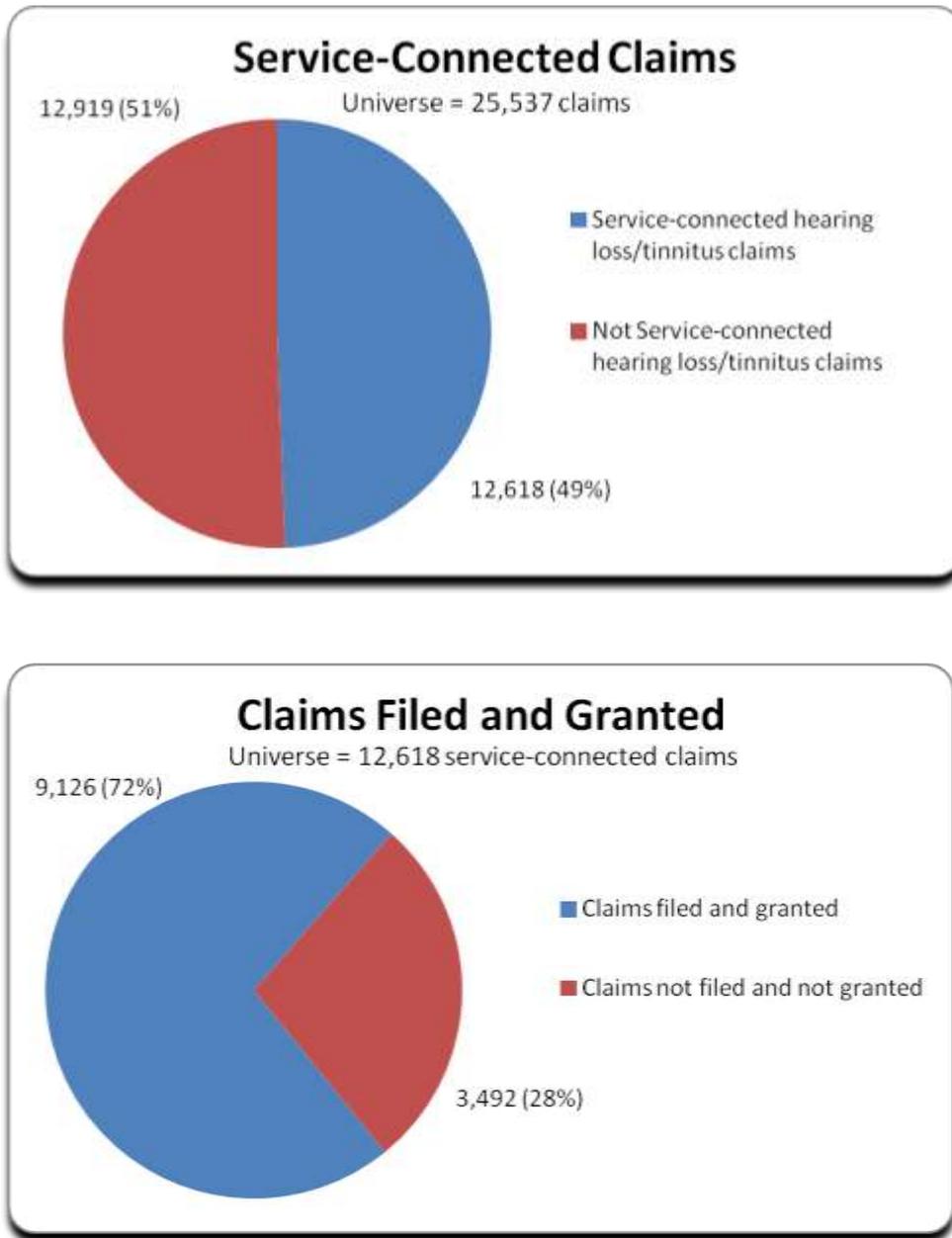
Impact

Until the conditions noted above are corrected, Marines will continue to unnecessarily lose hearing and the Marine Corps will not be able to meet the goal of preventing hearing loss. This negatively impacts force readiness and the well-being of Marines. Without reliable data and consistent performance measures, the Marine Corps will not be able to identify or analyze HCP-wide trends. Office of Management and Budget Circular A-123 notes the importance of having timely and reliable information for decisionmaking.

According to the VA Office of Performance Analysis and Integrity, Data and Information Services, 76,440 Marines left service in calendar years 2007 and 2008 and filed 25,537 claims. We determined the number of service-connected²⁹ claims as well as the number of claims filed and granted³⁰ as shown in Figure 3.

²⁹ Service-connection establishes that a particular injury or disease resulting in disability was incurred coincident with service in the Armed Forces, or if preexisting such service, was aggravated therein.

³⁰ Claims approved for compensation.

Figure 3.

To compute an estimated lifetime cost for these 9,126 filed and granted claims, we used the minimum VA compensation rate of 10 percent^{31,32} and multiplied that by the 9,126 claims, for a total estimated monthly cost of \$1.1 million. We multiplied \$1.1 million by 12 months to get a total estimated yearly cost of \$13.5 million. We multiplied this by 10 years and 30 years to get a short-term cost of \$134 million and a

³¹ According to the VA's Compensation Rate Table, effective 1 December 2008, a 10 percent rate means the VA paid out \$123 per month for claims filed and granted (see Exhibit K for VA Compensation Benefits Rates).

³² 10 percent reflects the actual compensation rate assigned to the majority of the claims data received.

long-term cost of \$404 million. According to a Deputy Assistant Secretary of the Navy (Installations and Environment) memorandum, dated 8 June 2007, over \$235 million in benefits were paid to Sailors and Marines in 2006.

If these conditions continue, Marines will continue to file claims for hearing loss and/or tinnitus, which are lifetime disabilities. According to the Secretary of the Navy, mishaps and hazards must be quickly identified, analyzed, and openly communicated so lessons learned will prevent recurrence. According to DoDI 6055.12, a comprehensive HCP will help prevent hearing loss from noise exposure.

Recommendations and Corrective Actions

Our recommendations, summarized management responses, and our comments on the responses are presented below, as applicable. The complete text of the Bureau of Medicine and Surgery's responses are in the Appendix.

We recommend that Commandant of the Marine Corps:

Recommendation 1. Establish a mechanism to ensure that Commanders include all Marines exposed to hazardous noise in their hearing conservation program.

Recommendation 2. Establish internal controls to ensure all Marines' entrance to and exit from the hearing conservation program are accurately recorded.

Recommendation 3. Establish a baseline inventory of Marine Corps hazardous noise areas and establish a schedule for reviewing/updating it.

Recommendation 4. Identify Marines in those hazardous noise areas and establish oversight and monitoring to provide for early detection and mitigation of hearing loss.

Recommendation 5. Perform a one-time review to identify all current Marines who are due for a baseline or annual audiogram. Establish a plan of action and milestones to ensure they promptly receive the audiograms and that appropriate actions are taken when hearing loss is detected.

Recommendation 6. Establish a process and schedule for Command reporting of effectiveness results to Commandant of the Marine Corps Safety Division.

Recommendation 7. Establish a schedule and reconcile all databases identifying individuals with hearing loss and ensure the Defense Occupational and Environmental Health Readiness System – Data Repository is updated and corrected.

Recommendation 8. Establish performance measures to monitor hearing conservation program effectiveness and establish a schedule for periodic monitoring.

Recommendation 9. Establish the hearing conservation program as an assessable unit.

Recommendation 10. Establish controls to: (1) ensure that Marines receive required baseline, annual, and termination (upon separation from the hearing conservation program/service) audiograms and (2) ensure corrective action plans are implemented to prevent further hearing deterioration for Marines identified with hearing loss.

The Commandant of the Marine Corps did not provide a response to the recommendations.

Naval Audit Service comment on the lack of a Marine Corps response to the recommendations. Because the Marine Corps did not provide a response to the recommendations, we consider them to be undecided and are resubmitting them to the Commandant of the Marine Corps for a response.

We recommend that Surgeon General of the Navy:

Recommendation 11. Establish performance measures to monitor hearing conservation program effectiveness and establish a schedule for periodic monitoring.

Management response to Recommendation 11. Concur. An official Bureau of Medicine and Surgery Charter for the Navy and Marine Corps Hearing Advisory Board will be established. This Board will identify an initial goal to “establish metrics measure improvements in the Hearing Conservation Program throughout the Enterprise” as a key deliverable. The target completion date is 31 August 2011.

Naval Audit Service comment on management’s response to Recommendation 11. Establishing the Navy and Marine Corps Hearing Advisory Board is a good first step toward establishing performance measures. However, based on our conversations with Bureau of Medicine and Surgery personnel, the target completion date of 31 August 2011 addresses the establishment of the board and not performance measures. In addition, the response does not address a schedule for the periodic monitoring of those performance measures. Therefore, we consider this recommendation to be undecided and are re-submitting it to the Surgeon General for reconsideration.

Recommendation 12. Establish the hearing conservation program as an assessable unit.

Management response to Recommendation 12. Concur. Bureau of Medicine and Surgery will establish the Marine Corps Hearing Conservation Program as an assessable unit in its Fiscal Year 2012 Managers’ Internal Control Program and

provide assessment methodology to the regions. Intent is for regions and activities to review this assessable unit in Quarter 1 and report results, as appropriate, in the Fiscal Year 2012 annual Statement of Assurance. The target completion date is 31 August 2011.

Naval Audit Service comment on management's response to

Recommendation 12. Bureau of Medicine and Surgery's response meets the intent of the recommendation. This recommendation is considered open pending completion of the planned corrective actions.

Recommendation 13. Establish controls to: (1) ensure that Marines receive timely access to care for required audiograms (baseline, annual and termination, upon separation from the hearing conservations program/service); (2) identify Marines with hearing loss; and (3) ensure that hearing information necessary for corrective action plans is communicated.³³

Management response to Recommendation 13. Concur. An official Bureau of Medicine and Surgery charter for the Navy and Marine Corps Hearing Advisory Board will be established. This Board will identify metrics to measure improvements in the (a) access to occupational audiology care; (b) quality of audiology clinical care; and (c) risk communication education to the patients and work supervisor. Medical is capable of identifying individuals with different levels of hearing, but this Naval Audit Service recommendation needs elaboration. "Hearing loss" in terms of Significant Threshold Shift/Permanent Threshold Shift alone is not a good reflection of an individual's fitness for duty or hearing status. True "hearing loss" accounts for the degree of impairment that would have to be defined relative to an individual's specific job at that time. If the recommendation concerns audiometric fitness for duty, then Medical can provide an assessment and a plan for corrective plan to accommodate ability on the job if the specific needs of the job/mission are known. The Bureau of Medicine and Surgery agrees with this part of recommendation 13. Risk communication will be addressed as detailed in item (c) above. The target completion date is 31 August 2011.

Naval Audit Service comment on management's response to

Recommendation 13. Establishing the Navy and Marine Corps Hearing Advisory Board and identifying metrics is a good start. While we agree Medical is capable of identifying individuals with different levels of hearing, the intent of the recommendation is to identify those Marines with hearing loss and communicate that information to the commands. Furthermore, the

³³ The recommendation wording reflects changes agreed to by the Naval Audit Service and the Bureau of Medicine and Surgery after the draft report was issued, to clarify the intent of the recommendation. The draft report recommendation wording was: "Establish controls to: (1) ensure that Marines receive required baseline, annual, and termination (upon separation from the hearing conservation program/service) audiograms; (2) identify Marines with hearing loss; and (3) ensure that hearing information necessary for corrective actions plans is communicated."

response does not address new controls to: (1) ensure timely access to care for required audiograms, (2) identify Marines with hearing loss, and (3) ensure hearing information is communicated. Therefore, we consider this recommendation to be undecided and are re-submitting it to the Surgeon General for reconsideration.

Recommendation 14. Establish controls and provide oversight to ensure audiograms are included in Marine medical records.

Management response to Recommendation 14. Concur. The United States Marine Corps has established controls that are already in place at Marine Corps Order 6260.1, Paragraph 9 (recordkeeping) a. “All noise monitoring records and audiograms that are pertinent to an individual’s exposure shall be incorporated into his/her medical record.” Bureau of Medicine and Surgery will enhance Navy Medicine’s role in the Hearing Conservation Program through establishment of several new key occupational audiology positions. These audiologists augment program oversight to include clinical site visits, which facilitate medical record reviews semi-annually. The target completion date is 31 August 2011.

Naval Audit Service comment on management’s response to Recommendation 14. Marine Corps Order 6260.1E was in place at the time of the audit; paragraph 9³⁴ outlines the responsibilities of the Medical Department with regard to recordkeeping, specifically that monitoring records and audiograms shall be incorporated into the medical record. During the audit we found that medical records did not contain audiograms. Establishing new audiology positions to augment program oversight does not address the intent of the recommendation, which is to establish controls to ensure audiograms are in Marine medical records. Therefore, we consider this recommendation to be undecided and are re-submitting it to the Surgeon General for reconsideration.

³⁴ References Chief of Naval Operations Instruction 5100.23E and Navy Environmental Health Center Technical Manual 6260.51.99-1.

Section B:

Status of Recommendations

Recommendations							
Finding ³⁵	Rec. No.	Page No.	Subject	Status ³⁶	Action Command	Target or Actual Completion Date	Interim Target Completion Date ³⁷
1	1	13	Establish a mechanism to ensure that Commanders include all Marines exposed to hazardous noise in their hearing conservation program.	U	Commandant of the Marine Corps	2/14/2011	
1	2	13	Establish internal controls to ensure all Marines' entrance to and exit from the hearing conservation program are accurately recorded.	U	Commandant of the Marine Corps	2/14/2011	
1	3	13	Establish a baseline inventory of Marine Corps hazardous noise areas and establish a schedule for reviewing/updating it.	U	Commandant of the Marine Corps	2/14/2011	
1	4	13	Identify Marines in those hazardous noise areas and establish oversight and monitoring to provide for early detection and mitigation of hearing loss.	U	Commandant of the Marine Corps	2/14/2011	
1	5	13	Perform a one-time review to identify all current Marines who are due for a baseline or annual audiogram. Establish a plan of action and milestones to ensure they promptly receive the audiograms and that appropriate actions are taken when hearing loss is detected.	U	Commandant of the Marine Corps	2/14/2011	
1	6	13	Establish a process and schedule for Command reporting of effectiveness results to Commandant of the Marine Corps Safety Division.	U	Commandant of the Marine Corps	2/14/2011	
1	7	13	Establish a schedule and reconcile all databases identifying individuals with hearing loss and ensure the Defense Occupational and Environmental Health Readiness System – Data Repository is updated and corrected.	U	Commandant of the Marine Corps	2/14/2011	
1	8	13	Establish performance measures to monitor hearing conservation program effectiveness and establish a schedule for periodic monitoring.	U	Commandant of the Marine Corps	2/14/2011	

³⁵ / + = Indicates repeat finding.

³⁶ / O = Recommendation is open with agreed-to corrective actions; C = Recommendation is closed with all action completed; U = Recommendation is undecided with resolution efforts in progress.

³⁷ If applicable.

Recommendations							
Finding ³⁵	Rec. No.	Page No.	Subject	Status ³⁶	Action Command	Target or Actual Completion Date	Interim Target Completion Date ³⁷
1	9	14	Establish the hearing conservation program as an assessable unit.	U	Commandant of the Marine Corps	2/14/2011	
1	10	14	Establish controls to: (1) ensure that Marines receive required baseline, annual, and termination (upon separation from the hearing conservation program/service) audiograms and (2) ensure corrective action plans are implemented to prevent further hearing deterioration for Marines identified with hearing loss.	U	Commandant of the Marine Corps	2/14/2011	
1	11	14	Establish performance measures to monitor hearing conservation program effectiveness and establish a schedule for periodic monitoring.	U	Surgeon General of the Navy (N093)	2/14/2011	
1	12	14	Establish the hearing conservation program as an assessable unit.	O	Surgeon General of the Navy (N093)	8/31/2011	
1	13	15	Establish controls to: (1) ensure that Marines receive timely access to care for required audiograms (baseline, annual and termination, upon separation from the hearing conservations program/service); (2) identify Marines with hearing loss; and (3) ensure that hearing information necessary for corrective action plans is communicated.	U	Surgeon General of the Navy (N093)	2/14/2011	
1	14	16	Establish controls and provide oversight to ensure audiograms are included in Marine medical records.	U	Surgeon General of the Navy (N093)	2/14/2011	

Exhibit A:

Pertinent Guidance

Department of Defense Instruction 6055.12, “DoD Hearing Conservation Program (HCP),” 4 March 2005, states that all military personnel shall receive a reference audiogram at basic training prior to 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. The original reference audiogram shall be retained in the patient’s medical record on a DD Form 2215. Personnel exposed to hazardous noise levels shall receive annual audiograms. A termination shall be conducted on each worker about to stop working in designated hazardous noise areas.

Marine Corps Order 6260.1E, 5 April 2000, establishes an HCP for Marine Corps personnel. Where work areas and operations have hazardous noise levels, an effective HCP shall be implemented and enforced. Commanders of installations shall ensure the HCP is included in the installation-side safety program and shall provide assistance and annual evaluations of the HCP to the activities and units under their cognizance.

Commanders, Commanding Officers, and Officers in Charge shall ensure activities institute an HCP where a potential noise hazard has been identified. Supervisors shall ensure that personnel routinely exposed to hazardous noise are identified and included on the command’s HCP roster and that they receive a hearing test. Installation Safety Offices shall maintain a current inventory of all designated hazardous noise areas, operations, and equipment as identified during the noise surveys. The Bureau of Medicine and Surgery is responsible for providing HCP support services, including evaluations of the work environment for noise hazardous operations and equipment.

All personnel routinely exposed to hazardous noise greater than 84 decibels (dBA)³⁸ or equal to and above 140 dBP³⁹ shall be placed in the hearing testing and evaluation program, which shall include reference (baseline), monitoring, and termination audiograms. All military personnel shall receive a valid baseline audiogram as part of their entrance examination. Hearing tests performed at Military Entrance Processing Stations shall not be used as baseline audiograms. The monitoring audiogram is compared with the baseline or revised reference audiogram to determine if a Significant Threshold Shift (STS) has occurred. All noise monitoring records and audiograms that are pertinent to an individual’s exposure shall be incorporated into his/her medical record.

³⁸ Standard abbreviation for sound levels measured with a sound level meter set on the A-weighting network.

³⁹ Standard abbreviation for the peak sound pressure level in decibels.

Navy and Marine Corps Public Health Center Technical Manual 6260.51.99-2, September 2008, states that a current inventory of all potentially hazardous noise areas and operations will be maintained. This is typically provided in the baseline industrial hygiene survey. All active duty hearing conservation test sites must use the most recent version of the Defense Occupational and Environmental Health Readiness System software for all hearing conservation testing.

The health record of each individual identified by their command for inclusion in HCP will contain an original baseline/reference audiogram (DD Form 2215), and a re-established reference audiogram(s), if different from original baseline audiogram (DD Form 2215), and all monitoring audiograms (DD Form 2216). All military personnel will receive a Termination Hearing Test upon termination of Navy service regardless of assignment or exposure to hazardous noise, which is documented on DD Form 2216.

The HCP manager will evaluate program effectiveness of all supported activities, and at least annually provide program performance evaluations to supported activities based compliance,⁴⁰ incidence of STS,⁴¹ and incidence of Permanent Threshold Shift.⁴² This information must also be maintained for inspections, audits, or epidemiological trending.

Navy Medicine (NAVMED) Policy 07-008 “Improved Hearing Conservation Program Efforts,” 15 March 2007, states that it is Navy Medicine’s role to ensure that supported commanders are aware of the status of their command’s HCP per the reporting requirements contained in the Navy Environmental Health Center Technical Manual 6260.99-2.⁴³

Secretary of the Navy Instruction 5200.35E, 8 November 2006, states that it is DON policy that commands establish Managers’ Internal Control programs to evaluate and report on the effectiveness of internal controls throughout their organizations and make corrections when necessary. DON organizations shall implement a system of internal controls to provide reasonable assurance regarding the effectiveness and efficiency of operations.

Assessable units are designed to provide a reasonable span of control to conduct management reviews and can be any organization, function, program, or subdivision capable of being evaluated using internal control assessment procedures.

⁴⁰ Statistic that reports the number of individuals enrolled in HCP who have a current audiogram (date within 12 months) divided by the number of individuals who have enrolled. [Issues: No control over the number of individuals that actually report for testing.]

⁴¹ Statistic that reports the number of positive STSs (poorer hearing) at annual monitoring divided by the number of individuals monitored.

⁴² Statistic that reports the number of PTSs (poorer hearing) in the latest fiscal year divided by the number of individuals monitored during that period.

⁴³ Navy Environmental Health Center was renamed the Navy and Marine Corps Public Health Center.

Exhibit B:

Background

Commandant of the Marine Corps - Safety Division identified hearing loss among Marine Corps personnel as a risk in the Fiscal Year 2008 Risk and Opportunity Assessment. Hearing loss is the leading disability among Marine Corps personnel, resulting in a significant personnel and financial liability for the Department of Defense (DoD).

On 6 July 2009, the Secretary of the Navy issued a Department of the Navy (DON) Safety Memorandum outlining DON's Safety Vision for 2009 and beyond. According to the Secretary of the Navy, mishaps, hazards, and near miss events must be quickly identified, analyzed, and openly communicated so lessons learned will prevent recurrence, and that we cannot mitigate risk for hazards that we do not know about. DON organizations and personnel shall:

- Facilitate continuous improvement in safety performance by managing hazards, mitigating risk, and implementing actions to reduce mishaps through the use of annual safety program self-assessments;
- Maintain effective safety monitoring and performance measuring systems that support senior leadership and unit-specific metrics, data analysis for root causes, and development of mitigation strategies; and
- Collect and trend (monitor and measure) safety data in order to assess safety performance, identify adverse leading indicators, and continually strive to minimize loss due to injury, illness, or material property damage. Higher headquarters staff needs to communicate specific metrics that they require to collect from subordinate commands to gain a better corporate safety picture or level of safety awareness.

The ear has no mechanism to block out sound; it simply receives all noise. If this noise is a high-intensity impulse or a loud continuous sound 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. This loss may be temporary or permanent, depending on the duration of noise exposure, intensity of the noise, and susceptibility of the individual.

The designation of hazardous noise areas is any work area where the 8-hour time-weighted average (TWA) sound pressure level is greater than 84 decibels (dBA); any work area where the peak sound pressure level (impulse or impact) exceeds 140 dB; and areas where the sound pressure levels are greater than 84 dBA 8-hour TWA, but less than 104 dBA.

The Defense Medical Surveillance System contains up-to-date and historical data on diseases and medical events and the Web Enabled Safety System is the Naval Safety Center's online reporting and data retrieval system, which includes data on Marines with a Permanent Threshold Shift.⁴⁴ The Physical Evaluation Board is an administrative board that determines whether a service member's disability prevents his or her continued performance in the Navy or Marine Corps, using evaluations entered into the Joint Disability Evaluation Tracking System. The Marine Corps Total Force System contains personnel and pay information for Marines. The Medical Readiness Reporting System is used for monitoring Individual Medical Readiness and contains three fields related to hearing:

- 1) Date of Baseline 2215,
- 2) Date of 2216, and
- 3) Currently in the Hearing Conservation Program (HCP) (yes or no).

Reference Hearing Tests⁴⁵ are recorded on a Department of Defense (DD) Form 2215 (Reference Audiogram). Monitoring Hearing Tests are used to detect incremental changes in hearing and identify potential problems before an individual experiences a hearing loss that interferes with verbal communications. Detection is made by comparing the most current monitoring audiogram with the reference audiogram to determine significant changes in hearing. The annual and termination hearing test results are recorded on a DD Form 2216 (Hearing Conservation Data).

The Department of Veterans Affairs (VA) Disability Compensation program's mission is to provide monthly payments to veterans in recognition of the effects of disabilities, diseases, or injuries incurred or aggravated during active military service, and to provide access to other VA benefits.

The Marine Corps does not have a specific budget line for HCP; Operations and Maintenance funds are used. The Bureau of Medicine and Surgery does not have a separate budget line item in their Operations and Maintenance, Defense Health Program funding allocations for HCP, and there is no separate budget line for the Marine Corps HCP.

⁴⁴ Typically a positive Significant Threshold Shift (change in hearing), which persists on a followup 2 audiogram completed within 30-days of the periodic test.

⁴⁵ Three types of reference audiograms are used in the HCP: (1) An original reference (baseline) audiogram performed prior to hazardous noise exposure; (2) a reference audiogram performed after exposure to hazardous noise when the original reference audiogram was lost or never accomplished; and (3) a re-established reference audiogram performed as the results of a followup program.

Exhibit C:

Scope and Methodology

Scope

We conducted the audit from 16 November 2007 to 16 November 2010. The conditions noted existed during the time period of our review. This report summarizes information regarding our audit of the Marine Corps Hearing Conservation Program (HCP).

Exhibit D contains a list of commands and activities visited and/or contacted. The audit focused on active duty Marines and Marines who left service in Fiscal Year (FY) 2007. We collected all audiogram data in the Defense Occupational and Environmental Health Readiness System – Data Repository (DOEHRS-DR) as of 5 April 2008 and 14 December 2008 from the TRICARE Management Activity and personnel data⁴⁶ from Manpower Information Technology Support Team, Manpower and Reserve Affairs covering the period FY 2007. We also collected hearing loss diagnoses data⁴⁷ from the United States Center for Health Promotion and Preventive Medicine, covering the period January 2001 through April 2008; Permanent Threshold Shift data⁴⁸ from the Naval Safety Center, covering the period FYs 2006-2008; hearing related case data⁴⁹ from the Physical Evaluation Board, covering the period FY 2007; and data⁵⁰ indicating whether Marines were in HCP from the Space and Naval Warfare Command, covering the period March 2006 through December 2008. We also obtained 250 Department of Veterans Affairs (VA) medical records for randomly sampled Marines who left service in FY 2007, and VA hearing loss claims data covering calendar years 2007 and 2008.

Methodology

To accomplish our audit, we researched and reviewed public law, Department of Defense, Department of the Navy, and Marine Corps guidance applicable to the Marine Corps HCP. We evaluated internal controls and assessed compliance with regulations pertaining to the HCP. We made inquiries and held discussions with key personnel at the commands and activities listed in Exhibit D.

We documented the Marine Corps' HCP process and the systems used to capture Marine Corps HCP data. We also documented systems capturing personnel information for Marines who left service, hearing loss diagnoses, Permanent Threshold Shift information,

⁴⁶ Obtained from the Marine Corps Total Force System (MCTFS) as of 12 March 2008.

⁴⁷ Obtained from the Defense Medical Surveillance System as of 19 December 2008.

⁴⁸ Obtained from the Web Enabled Safety System as of 13 March 2009.

⁴⁹ Obtained from the Joint Disability Evaluation Tracking System as of 19 and 25 September 2008.

⁵⁰ Obtained from the Medical Readiness Reporting System as of 10 December 2008.

and hearing related case information. We interviewed knowledgeable command personnel responsible for management and oversight of HCP. We obtained and reviewed the Marine Corps, Bureau of Medicine and Surgery (BUMED), and Navy Marine Corps Public Health Center’s management control program. We interviewed Marine Corps and BUMED personnel regarding HCP budget information.

We compared hearing related data from the Defense Medical Surveillance System (DMSS), Web Enabled Safety System (WESS), Joint Disability Evaluation Tracking System (JDETS), and personnel data from the Marine Corps Total Force System (MCTFS), to the Defense Occupational and Environmental Health Readiness System – Data Repository (DOEHRS-DR) audiogram data by matching Social Security numbers (SSNs) and determined the following universes:

- 6,243 unique SSNs of Marines in the DOEHRSDR⁵¹ with a hearing loss diagnosis in DMSS;
- 17 unique SSNs of Marines in the DOEHRSDR with Permanent Threshold Shift data in WESS;
- 113 unique SSNs of Marines in the DOEHRSDR with a hearing-related case in JDETS; and
- 32,861 unique SSNs of Marines who left the service with records in the DOEHRSDR.

We analyzed the “shift” data field in the DOEHRSDR to obtain the number of Marines by type of shift.⁵² We then identified the Marines with a positive shift⁵³ (decrease in hearing) in any audiogram, and those with a positive shift in their annual audiogram.

We analyzed the “Service Duty Occupation Code”⁵⁴ data field in the DOEHRSDR to obtain the number of Marines by Military Occupational Specialty (MOS). We grouped MOS results by Occupational Field to obtain the number of Marines in each Occupational Field group.

We reviewed the Institute of Medicine’s (IOM) “Noise and Military Service, Implications for Hearing Loss and Tinnitus” study.⁵⁵ It evaluated evidence regarding the presence of noise-induced hearing loss and tinnitus in United States military personnel by reviewing service medical records of veterans to examine compliance with regulations requiring audiograms. The IOM considered an entrance audiogram as a test received 60 days before or after the Service member’s entrance into active duty and an exit audiogram as a

⁵¹ Enrolled in HCP.

⁵² Positive shift, negative shift, no shift, and N/A.

⁵³ A positive shift is +10 decibels of hearing loss or greater average change at 2000, 3000, and 4000 hertz (Hz), in either ear, on the current periodic or followup hearing tests as compared to the current reference (baseline) hearing test.

⁵⁴ Data field in the DOEHRSDR which include the subject’s job code Military Occupational Specialty (MOS) Series.

⁵⁵ Mandated by Congress in Section 104 of Public Law 107-330 and required by the Department of Veterans Affairs (VA) to contract with the National Academies.

test received within 60 days of a Service member's release from active duty. We mirrored this analysis and analyzed original hard copy medical records to determine if Marine Corps Service members who left service in FY 2007 had entrance and exit audiograms in their medical records.

We used statistical sampling to randomly select 250 Marines who left service in FY 2007.⁵⁶ We obtained the corresponding medical records from the VA. We reviewed each medical record, identified hearing related data, and compared audiogram dates⁵⁷ to entrance and exit dates in MCTFS⁵⁸ and on DD Forms 214.⁵⁹ We determined the number of Marines who did not have both an entrance and exit audiogram within 60 days of entry into/exit from service in their medical record. We projected that result to the universe of Marines who left service in FY 2007. We compared the SSNs for the 250 Marines sampled, to the DOEHRS-DR audiogram data which resulted in a universe of 244 unique SSNs of Marines in the DOEHRS-DR.

To determine how many Marines had developed hearing loss, we focused on Marines who had both an entrance and exit audiogram. We reviewed DD Forms 2215, DD Forms 2216, and DD Forms 2808 in the medical records and focused on the 2000, 3000, and 4000 hertz (Hz) frequencies. We analyzed the exit audiogram test results for the 2000, 3000, and 4000 Hz frequencies in both ears and determined the degree of hearing loss for each Marine.

We analyzed the timeliness of audiograms received by comparing audiogram dates to dates Marines entered and left the service. We determined the number of Marines that had audiograms within 30, 60, 90, 120, and 365 days of entering/leaving service.

We compared Medical Readiness Reporting System (MRRS) hearing related data to DOEHRS-DR audiogram data by matching SSNs and determined that 9,327 unique Marines⁶⁰ in MRRS did not have records in DOEHRS-DR. We extracted active duty Marines' data and analyzed the number of unique active duty Marines without records in DOEHRS-DR.

We analyzed the frequency of audiograms in DOEHRS-DR for Marines with a hearing loss diagnosis in DMSS and Marines who left the service in FY 2007 to determine whether Marines received audiograms annually as required. Specifically we analyzed the average time between adjacent⁶¹ annual audiograms, as well as between followup and adjacent⁶² annual audiograms in DOEHRS-DR for Marines with a hearing loss diagnosis

⁵⁶ Obtained universe of 34,663 Marines who left service in FY 2007 from MCTFS.

⁵⁷ On DD Form 2215 (Reference Audiogram), DD Form 2216 (Hearing Conservation Data), and DD Form 2808 (Report of Medical Examination).

⁵⁸ We used "Pay Base Entry Date" for entrance dates and the "Action Date" for exit dates.

⁵⁹ Certificate of Release or Discharge from Active Duty (found in medical record).

⁶⁰ Active Duty and Reserves.

⁶¹ Consecutive annual audiograms without any other audiograms in between.

⁶² Followup audiogram followed by an annual audiogram without any other audiograms in between.

in DMSS and who left service in FY 2007, based on the audio purpose description in DOEHRS-DR.

We obtained VA hearing loss and tinnitus claims for Marines who left service in calendar years 2007 and 2008. We extracted hearing loss and tinnitus claims that were filed and granted, resulting in a total universe of 9,126 claims. We used the minimum VA compensation rate of 10 percent⁶³ and the number of claims to calculate the estimated monthly, yearly, and potential lifetime costs.

We relied on computer-generated data from the systems above, but did not perform extensive testing on the reliability of the data because it would have constituted a separate and significant audit effort. Due to the importance of the DOEHRS-DR data set to our analyses, we performed testing of the DOEHRS-DR data set through a comparison with hard copy medical records.⁶⁴ Results of this comparison indicated that 98 percent of hard copy DD Form 2215 and DD Form 2216 audiogram records⁶⁵ were identified in the DOEHRS-DR data set based on SSN and audiogram test date. The purpose of this comparison was to support the completeness of the DOEHRS-DR data and confirm the completeness and accuracy of the SSN and audiogram test date fields.

We reviewed an Air Force Audit Agency report, issued 5 January 2006, addressing their Hearing Conservation Program, and considered it when conducting this audit. We did not identify any Naval Audit Service, Department of Defense Inspector General, or Government Accountability Office reports issued within the past 5 years addressing the same or similar objectives as this audit. Therefore, we did not perform a followup. However, Naval Audit Service issued a report (N2010-0038 “Consideration of Hazardous Noise in the Acquisition of Selected Major Department of the Navy Weapon Systems and Platforms”) in which, as part of the Marine Corps response, there would be an update made to the current Marine Corps Order covering HCP.

We conducted this performance audit in accordance with Generally Accepted Government Auditing Standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective.

⁶³ According to the VA's Compensation Rate Table effective 1 December 2008, a 10 percent rate means the VA pays out \$123 per month for claims filed and granted.

⁶⁴ Random sample of 250 hard copy medical records for Marines who left service in FY 2007.

⁶⁵ Between 2005 and 2007.

Federal Managers' Financial Integrity Act

The Federal Managers' Financial Integrity Act (FMFIA) of 1982, as codified in Title 31, United States Code, requires each Federal agency head to annually certify the effectiveness of the agency's internal and accounting system controls.

Recommendations 1 through 14 address issues related to the internal control over the Marine Corps Hearing Conservation Program. In our opinion, the weaknesses noted in this report may warrant reporting in the Auditor General's annual FMFIA memorandum identifying management control weaknesses to the Secretary of the Navy.

Exhibit D:**Activities Visited and/or Contacted**

- Commandant of the Marine Corps Safety Division, Arlington, VA*
- Commandant of the Marine Corps, Health Services Division Marine Corps, Arlington, VA*
- Bureau of Medicine and Surgery, Washington, DC*
- Compensation and Pension Service, Department of Veterans Affairs, Washington, DC*
- Office of the Assistant Secretary of Defense (Health Affairs), TRICARE Management Activity, Washington, DC
- Navy Marine Corps Public Health Center, Portsmouth, VA*
- Marine Corps Combat Development Command, Quantico, VA
- Safety Office, Marine Corps Base, Quantico, VA
- The Basic School, Marine Corps Base, Quantico, VA
- Facilities Logistics Services and Support, Marine Corps Base, Quantico, VA
- Public Works and Buildings, Marine Corps Base, Quantico, VA
- Security Battalion, Marine Corp Base, Quantico, VA
- Weapons Training Battalion, Marine Corps Base, Quantico, VA
- Marine Corps Air Facility, Marine Corps Base, Quantico, VA
- Naval Medical Clinic, Marine Corps Base, Quantico, VA
- Marine Corps Logistics Base, Barstow, CA
- Marine Forces Reserve, New Orleans, LA
- Marine Corps Base Camp Pendleton, Camp Pendleton, CA
- Marine Air Ground Task Force Training Command/Marine Corps Air Ground Combat Center, Twentynine Palms, CA
- Marine Corps Base Hawaii, Kaneohe Bay, HI
- Marine Corps Air Station (MCAS) Yuma, Yuma, AZ
- MCAS Camp Pendleton, Camp Pendleton, CA
- MCAS Miramar, Miramar, CA
- United States Marine Forces Command, Norfolk, VA
- Marine Corps Installations East, Camp LeJeune, NC
- MCAS Futenma, Okinawa, Japan
- 1st Marine Aircraft Wing, Okinawa, Japan
- Marine Aircraft Group-36, MCAS Futenma, Okinawa, Japan
- Marine Medium Helicopter Squadron-262, MCAS Futenma, Okinawa, Japan
- Marine Medium Helicopter Squadron-265, MACS Futenma, Okinawa, Japan
- Marine Aviation Logistics Squadron-36, MCAS Futenma, Okinawa, Japan
- Marine Aerial Refueler Transport Squadron-152, MCAS Futenma, Okinawa, Japan

- Marine Air Control Group-18, MCAS Futenma, Okinawa, Japan
- Marine Air Support Squadron-2, MCAS Futenma, Okinawa, Japan
- Marine Tactical Air Command Squadron-18, MCAS Futenma, Okinawa, Japan
- Marine Wing Communications Squadron-18, MCAS Futenma, Okinawa, Japan
- Marine Aircraft Group-12, MCAS Iwakuni, Iwakuni, Japan
- Marine Aircraft Group-24, Marine Corps Base Hawaii, Kaneohe Bay, HI
- Marine Aviation Logistics Squadron-12, MCAS Iwakuni, Iwakuni, Japan
- Combined Arms Training Center, Camp Fuji, Japan
- Marine All-Weather Fighter Attack Squadron-242, MCAS Iwakuni, Iwakuni, Japan

* Denotes activity visited.

Exhibit E:**Number of Marines by Occupational Field**

Marines with a Hearing Loss Diagnosis in the Defense Medical Surveillance System (DMSS) by Occupational Field in the Defense Occupational and Environmental Health Readiness System-Data Repository (DOEHRS-DR)		
Occupational Field Code	Occupational Field Description	Number of Individuals⁶⁶
03	Infantry	2,079
98-99	Special Identifier Military Occupational Specialty (MOS) (Fields eliminated in 2006 and 2007) ⁶⁷	1,205
11	Utilities	834
35	Motor Transport	578
60-61-62	Aircraft Maintenance	358

Marines with a Permanent Threshold Shift in Web Enabled Safety System (WESS) by Occupational Field in DOEHR-DR		
Occupational Field Code	Occupational Field Description	Number of Individuals⁶⁸
98-99 ⁶⁹	Special Identifier MOS (Fields eliminated in 2006 and 2007)	7
13	Engineer, Construction, Facilities, and Equipment	5
60-61-62	Aircraft Maintenance	3
03	Infantry	2
06	Communications	2

⁶⁶ There were individuals with more than one "Service Duty Occupation Code" (SDOC) in DOEHR-DR; therefore, the total number of individuals grouped under an occupational field was not representative of unique individuals in DOEHR-DR with a hearing loss diagnosis in DMSS.

⁶⁷ MOSs under the Special identifier code were 9813 Ground Control Station Payload Operator, 9900 General Service Marine, 9901 Basic Officer, 9903 General Officer, 9904 Colonel Logistician, 9906 Colonel Ground, 9907 Colonel Naval Aviator/Naval Flight Officer, 9914 Colonel Judge Advocate, 9916 Billet Designator-Enlisted, 9917 College Degree-Enlisted, 9960 Naval Aviation Observer, 9966 Billet Designator – Naval Flight Officer, 9969 Billet Designator – Any Pilot/Naval Flight Officer, 9971 Basic Marine with Enlistment Guarantee, 9972 Aircrew Trainee, 9991 Sergeant Major of the Marine Corps, 9999 Recruit in Training/Student.

⁶⁸ There were individuals with more than one SDOC in DOEHR-DR; therefore, the total number of individuals grouped under an Occupational Field was not representative of unique individuals in DOEHR-DR reporting a Permanent Threshold Shift in WESS.

⁶⁹ MOSs under the Special Identifier MOS code were 9900 General Service Marine, 9971 Basic Marine with Enlistment Guarantee, and 9999 Recruit in Training/Student.

Marines with a Hearing Related Case in the Joint Disability Evaluation Tracking System (JDETS) by Occupational Field in DOEHRS-DR		
Occupational Field Code	Occupational Field Description	Number of Individuals⁷⁰
98-99 ⁷¹	Special Identifier MOS (Fields eliminated in 2006 and 2007)	63
03	Infantry	38
11	Utilities	28
35	Motor Transport	10
08	Artillery	6

Marines with a Department of Veterans Affairs Medical Record by Occupational Field in DOEHRS-DR		
Occupational Field Code	Occupational Field Description	Number of Individuals⁷²
98-99 ⁷³	Special Identifier MOS (Fields eliminated in 2006 and 2007)	162
11	Utilities	39
03	Infantry	23
35	Motor Transport	21
Other MOSs ⁷⁴	Other Service Duty Occupational Codes	17

⁷⁰ There were individuals with more than one SDOC in the DOEHRS-DR; therefore, the total number of individuals grouped under an occupational field was not representative of unique individuals in DOEHRS-DR having a hearing related case in the Joint Disability Evaluation Tracking System.

⁷¹ MOSs under the Special Identifier Code were 9900 General Service Marine, 9971 Basic Marine with Enlisted Guarantee, and 9999 Recruit in Training/Student.

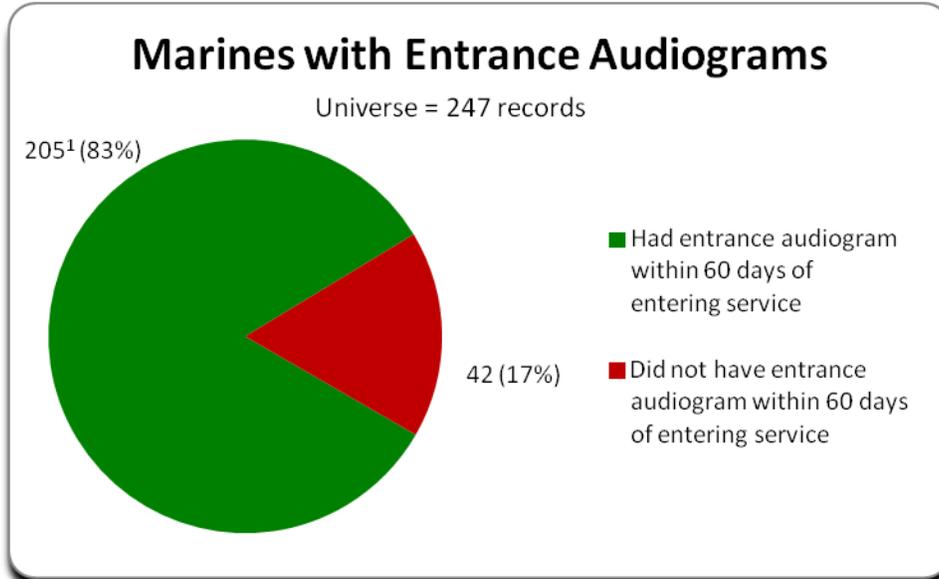
⁷² There were individuals with more than one SDOC in DOEHR-DR; therefore, the total number of individuals grouped under an occupational field was not representative of unique individuals in DOEHRS-DR.

⁷³ MOSs under the Special Identifier Code were 9900 General Service Marine, 9971 Basic Marine with Enlisted Guarantee, and 9999 Recruit in Training/Student.

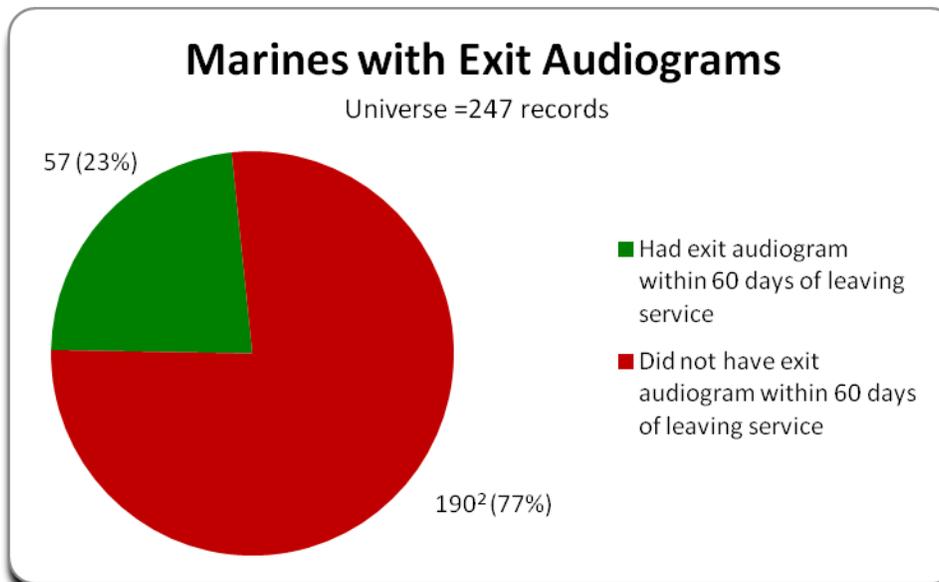
⁷⁴ Category added by auditor, which included blanks and unidentified MOSs.

Exhibit F:

Audiograms in Medical Records



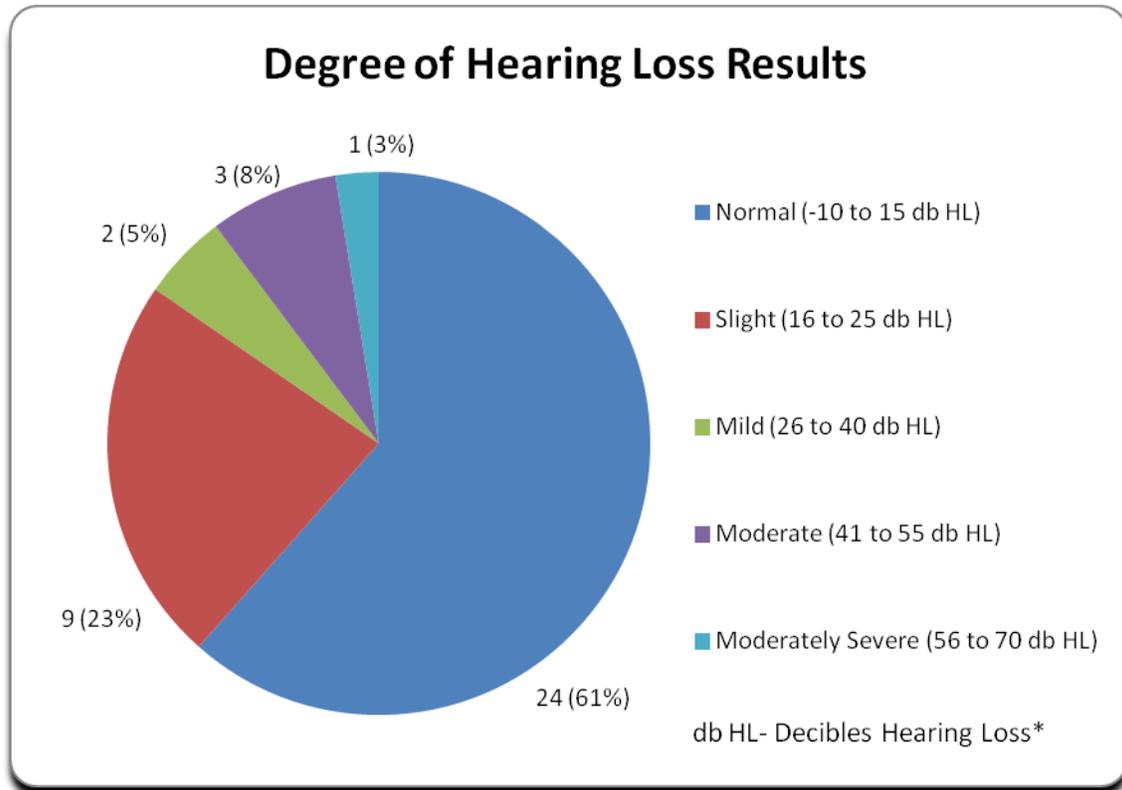
¹ Although the DD Form 2808 is not considered a baseline audiogram, all possible audiograms were considered to depict Marines that had an audiogram.



² 26 Marines left service shortly after entering (within 121 days, which encompasses the 60 days before and after entrance into service and exit from service).

Exhibit G:

Degree of Hearing Loss Results



* Hearing loss definitions were from the American Speech Hearing and Language Web site.

Exhibit H:**Aging Analysis of Audiogram Data****Aging Analysis of Entrance Audiograms**

Received within 30 days of entering service	189 of 238 Marines (79 percent)
Received within 60 days of entering service	193 of 238 Marines (81 percent)
Received within 90 days of entering service	195 of 238 Marines (82 percent)
Received within 120 days of entering service	200 of 238 Marines (84 percent)
Received within 365 days of entering service	216 of 238 Marines (91 percent)

Aging Analysis of Exit Audiograms

Received within 30 days of leaving service	14 of 238 Marines (6 percent)
Received within 60 days of leaving service	55 of 238 Marines (23 percent)
Received within 90 days of leaving service	97 of 238 Marines (41 percent)
Received within 120 days of leaving service	124 of 238 Marines (52 percent)
Received within 365 days of leaving service	174 of 238 Marines (73 percent)

Exhibit I:

Annual Audiogram Frequency Analysis

**Average Time between Adjacent Annual Audiograms for
Marines with a Hearing Loss Diagnosis in the Defense
Medical Surveillance System**

Range	Percent of Marines*
Less than 365 days	41 percent
Less than 400 days	49 percent
Less than 450 days	58 percent
Less than 500 days	64 percent
Less than 730 days	83 percent
Less than 1,095 days	94 percent

*Percentages indicate Marines whose average time between audiograms was within the stated range.

**Average Time between Adjacent Annual Audiograms for
Marines who Left Service in Fiscal Year 2007**

Range	Percent of Marines*
Less than 365 days	33 percent
Less than 400 days	44 percent
Less than 450 days	56 percent
Less than 500 days	64 percent
Less than 730 days	84 percent
Less than 1,095 days	95 percent

*Percentages indicate Marines whose average time between audiograms was within the stated range.

Exhibit J:

Followup/Annual Audiogram Frequency Analysis

Average Time between Followup Audiogram and Adjacent Annual Audiograms for Marines with a Hearing Loss Diagnosis in DMSS

Range	Percent of Marines*
Less than 365 days	36 percent
Less than 400 days	45 percent
Less than 450 days	54 percent
Less than 500 days	61 percent
Less than 730 days	80 percent
Less than 1,095 days	91 percent

*Percentages indicate Marines whose average time between audiograms was within the stated range.

Average Time between Followup Audiogram and Adjacent Annual Audiograms for Marines who Left Service in Fiscal Year 2007

Range	Percent of Marines*
Less than 365 days	36 percent
Less than 400 days	45 percent
Less than 450 days	55 percent
Less than 500 days	61 percent
Less than 730 days	80 percent
Less than 1,095 days	91 percent

*Percentages indicate Marines whose average time between audiograms was within the stated range.

Exhibit K:**Veterans Compensation Benefits Rates**

Percentage	Rate Per Month¹
10 percent	\$123
20 percent	\$243
30 percent	\$376
40 percent	\$541
50 percent	\$770
60 percent	\$974
70 percent	\$1,228
80 percent	\$1,427
90 percent	\$1,604
100 percent	\$2,673

¹Effective 1 December 2008

Appendix:

Management Response from the Bureau of Medicine and Surgery



DEPARTMENT OF THE NAVY
BUREAU OF MEDICINE AND SURGERY
3300 E STREET NW
WASHINGTON DC 20372-5200

IN REPLY REFER TO:

7510
Ser M3/SCO/E10UN093-001110
DEC 2 2010

MEMORANDUM FOR ASSISTANT AUDITOR GENERAL FOR MANPOWER AND
RESERVE AFFAIRS AUDITS, NAVAL AUDIT SERVICE

SUBJECT: Management and Implementation of the Marine Corps Hearing Conservation
Program (Draft Audit Report N2008-NFO000-0023)

The Bureau of Medicine and Surgery has reviewed Naval Audit Service Draft Report N2008-NFO000-0023. Our response to each recommendation, planned corrective actions and estimated completion dates are detailed in the attached.

My point of contact for this issue is [REDACTED] who can be reached at
[REDACTED] or e-mail [REDACTED]

FOIA (b)(6)

[REDACTED]
[REDACTED]
Deputy Chief, Medical Operations

FOIA (b)(6)

Attachment:
As stated

NAVAL AUDIT SERVICE (NAS) DRAFT REPORT DATED NOVEMBER 16, 2010
(N2008-NFO000-0023)

“MANAGEMENT AND IMPLEMENTATION OF THE MARINE CORPS
HEARING CONSERVATION PROGRAM”

BUREAU OF MEDICINE AND SURGERY COMMENTS
TO THE NAS RECOMMENDATIONS

NAS recommends that the Bureau of Medicine and Surgery:

RECOMMENDATION 11. Establish performance measures to monitor hearing conservation program effectiveness and establish a schedule for periodic monitoring.

Concur. An official BUMED Charter for the Navy and Marine Corps Hearing Advisory Board (NMCHAB) will be established. This Board will identify an initial goal to “Establish metrics to measure improvements in the HCP throughout the Enterprise” as a key deliverable. Target Completion date: 31 AUG 2011.

RECOMMENDATION 12. Establish the HCP as an assessable unit.

Concur. BUMED will establish the Marine Corps Hearing Conservation Program as an assessable unit in its FY12 MICP plan and provide assessment methodology to the regions. Intent is for regions and activities to review this assessable unit in Q1 and report results, as appropriate, in FY12 Annual Statement of Assurance. Target Completion Date: 31 AUG 2011.

ORIGINAL RECOMMENDATION 13. Establish Controls to (1) ensure that Marines receive required baseline, annual, and termination (upon separation from the hearing conservation program/service) audiograms; (2) identify Marines with hearing loss; and (3) ensure that hearing information necessary for corrective action plans is communicated.

NON-CONCUR. (1) BUMED does not concur it should be “ensuring” Marines report for required audiograms as this is clearly a Line function. BUMED will place controls to ensure that once Marines report for HCP services; they are delivered. This will include (a) timely access to care, (b) quality of clinical care and (c) risk communication to line customers. There is also a requirement that Medical and Line share compliance data at least every six months.

REVISED RECOMMENDATION 13:

Establish controls to: (1) ensure that Marines receive timely access to care for required audiograms (baseline, annual and termination, upon separation from the hearing conservations program/service); (2) identify Marines with hearing loss; and (3) ensure that hearing information necessary for corrective action plans is communicated.

Concur with Revised Recommendation. (1) An official BUMED Charter for the Navy and Marine Corps Hearing Advisory Board (NMCHAB) will be established. This Board will identify metrics to measure improvements in the (a) Access to Occupational Audiology Care; (b) Quality of Audiology Clinical Care; and (c) Risk Communication education to the patients and work supervisor. (2) Medical is capable of identifying individuals with different levels of hearing but this NAS recommendation needs elaboration. “Hearing loss” in terms of STS/PTS alone is not a

good reflection of an individual's fitness for duty or hearing status. True "hearing loss" accounts for the degree of impairment that would have to be defined relative to an individual's specific job at that time. If the recommendation concerns audiometric fitness for duty then Medical can provide an assessment and a plan for corrective plan to accommodate ability on the job if the specific needs of the job/mission are known. (3) BUMED agrees with this part of recommendation 13. Risk Communication will be addressed as detailed in (1) (c) above. Target Completion date: 31 AUG 2011.

RECOMMENDATION 14. Establish controls and provide oversight to ensure audiograms are included in Marine medical Records.

Concur. The USMC has established controls that are already in place at MCO 6260.1, Para. 9. (Recordkeeping) a. "All noise monitoring records and audiograms that are pertinent to an individual's exposure shall be incorporated into his/her medical record". BUMED will enhance Navy Medicine's role in the HCP through establishment of several new key occupational audiology positions. These audiologists augment program oversight to include clinical site visits which facilitate medical record reviews semi-annually. Target Completion Date: 31 AUG 2011

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