



Navy and Marine Corps Public Health Center

Occupational Audiology and Hearing Conservation Division

Hearing Conservation Compendium Report – CY13



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PREVENTION AND PROTECTION START HERE

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Executive Summary

- The Navy and Marine Corps Public Health Center (NMCPHC) Occupational Audiology and Hearing Conservation (OA/HC) Division developed an annual compendium report that summarizes hearing conservation program Measures Of Effectiveness (MOEs).
- Hearing injury rates have declined from 20% in 2001 to 11.5% in 2013.
- Navy compliance (83.8%) and USMC compliance (63.2%) is below the target threshold (85%) for CY13.
- The percentage of the Navy and USMC population with normal hearing has increased from 71% in 2001 to 82% in 2013.
 - Despite trending in a positive direction, only 57% of Navy and 52% of USMC civilians demonstrated normal hearing performance in 2013.
- Data indicate that 89% of new accessions have normal hearing in 2013 compared to 82% in 2001.
- Based on thresholds obtained on termination audiograms, the percentage of those eligible for Veteran’s Benefits Administration (VBA) compensation has fluctuated but is relatively unchanged at around 4% over the past 13 years.
- Initiative is underway to adopt the MOE’s across the Department of Defense (DoD).

ACKNOWLEDGEMENTS

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Mr. Rufus Godwin, Commandant of the Marine Corps Safety Division (CMCSD)

Background

The goal of the Department of Navy's (DON) Hearing Conservation and Noise Abatement initiative is to proactively prevent noise-induced hearing loss and ensure optimal auditory readiness. Per Navy Bureau of Medicine and Surgery (BUMED) guidance, the Navy and Marine Corps Public Health Center (NMCPHC) Occupational Audiology and Hearing Conservation (OA/HC) Division is responsible for the overall management of the Navy and Marine Corps Hearing Conservation Program (HCP). The OA/HC Division Head is considered the subject matter expert pertaining to program oversight, data analysis and report development. This annual compendium report summarizes the MOE's and considers the impact on the Navy and USMC population. This report should be utilized to focus BUMED consultation, guidance and direction, augment the Naval Safety Center and the Marine Corps Safety Division, meet the Hearing Conservation and Noise Abatement Flag Level Steering Board (FLSB) Plan of Action and Milestones (POA&M) objectives and provide enterprise-wide comparison data for local commands and deck-plate inspection processes to monitor performance.

One key component of the HCP is program evaluation. DoD policy has traditionally used Standard Threshold Shift (STS) rate (change in hearing) and audiogram completion rate as the two metrics to evaluate the effectiveness of HCP's. Per the Navy Executive Safety Board (NESB), additional MOE's include percentages of hearing impaired, new accessions with hearing impairment, and those eligible for compensation on termination audiogram. These expanded MOE's will serve as a standardized operational demand signal that will be actionable from the unit commander through the chain of command. These MOE's serve as an enterprise tool to assess efforts made to minimize preventable hearing loss across the DON.

Requirement for Medical Surveillance

Service members are required to be under medically surveillance if exposed to noise equal to or greater than 85 A-weighted (dBA) as an 8 hour time-weighted average (TWA) and/or impulse noise equal to or greater than 140 peak decibel (dBp)

Required exams include: baseline audiogram within 1 month of first exposure, annual audiogram and subsequent follow-up, and termination audiogram when removed from exposure

Methods

The Defense Occupational and Environmental Health Readiness System-Hearing Conservation (DOEHRS-HC) is the database application used to monitor audiometry and manage the HCP within the DoD. Data is uploaded from DOEHRS-HC to the DOEHRS Data Repository (DR).

Reports were generated through the DOEHRs DR for MOE 1, 3, 4 and 5. MOE 2 Navy data was generated through the Medical Surveillance Command Report submitted by the Naval Safety Center and reflects self-reported data from echelon II commands. MOE 2 USMC data was generated through Medical Readiness Reporting System (MRRS) Command Summary Hearing Conservation Report and reflects performance based on the prior 365 days.

Data

When looking at the data below these definitions are pertinent:

Normal hearing is defined as no frequency exceeding 25 dBHL in either ear as directed by the American Speech Language and Hearing Association.

Hearing Impaired (HI) is defined as at least one frequency exceeding 25 dBHL in either ear.

Hearing Impaired Alarm (HIA) refers to a minimal threshold trigger that identifies individuals at higher risk. For termination exams the alarm is based on VA criteria for service connected disability. For all other populations the alarm is based on the approved “2K-150” single ear trigger. The “2K-150” trigger identifies those individuals most likely to benefit from amplification (hearing aids).

Measures of Effectiveness (MOE's)

MOE 1: Percentage of Injury Rate (STS) on Periodic Hearing Screening

MOE 2: Percentage of Compliance with Periodic Screening

MOE 3: Percentage of Hearing Impaired

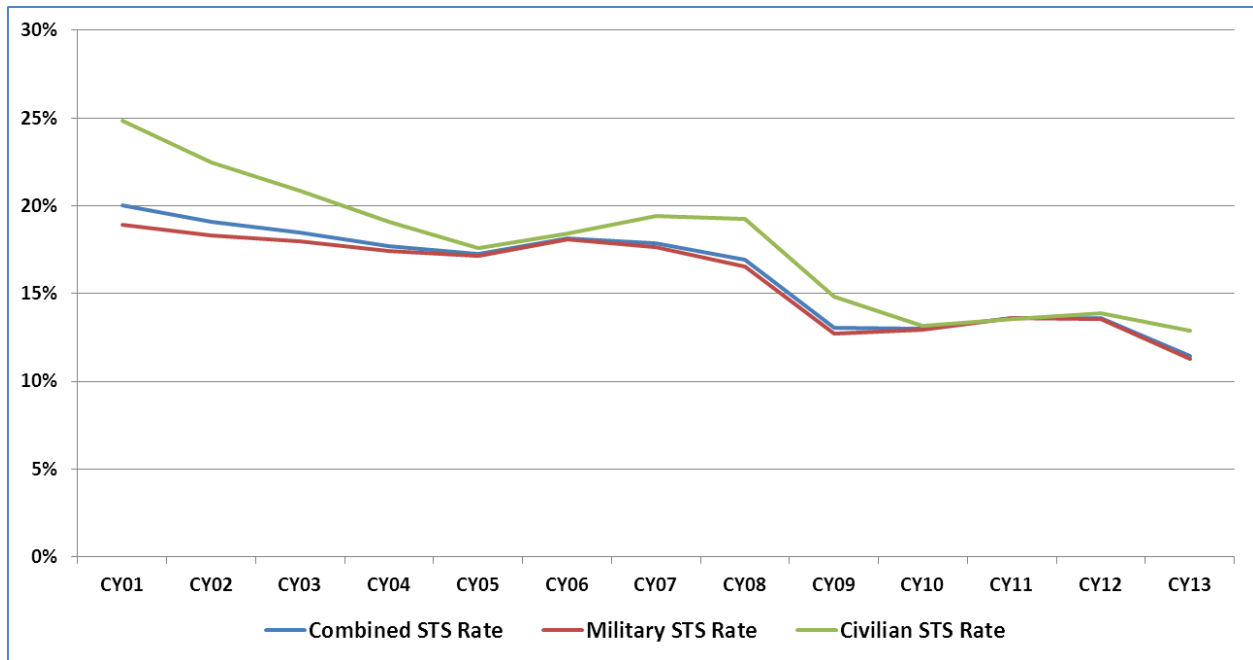
MOE 4: Percentage of New Accessions with Hearing Impairment

MOE 5: Percentage of Sailors and Marines who meet minimum VA Compensation Requirements

Appendices A-D provides breakout data for each MOE.

Appendix E provides additional breakdown on injury rates.

Figure 1. MOE 1: Injury Rate on Periodic Hearing Screening



Data source: Periodic annual screenings.

Interpretation: Injury rates (STS) have declined from 20% to 11.5% annually. There is a significant negative influence from the civilian sector.

Goal: Reduction in injury rates indicates compliance with HCP requirements, proper engineering controls, and PPE use both at work and at home.

Discussion: Considering the “real-time” (within CY), percentage of hearing injury is more indicative of hearing loss prevalence in current personnel.

MOE 2: Compliance with Periodic Screening

Navy:

- CY13: 83.8%
- CY12: 85.8%

USMC:

- CY13: 63.2%
- CY12: 71.4%

Data Source:

Navy: Medical Surveillance Exam Completion Report submitted by the Naval Safety Center.

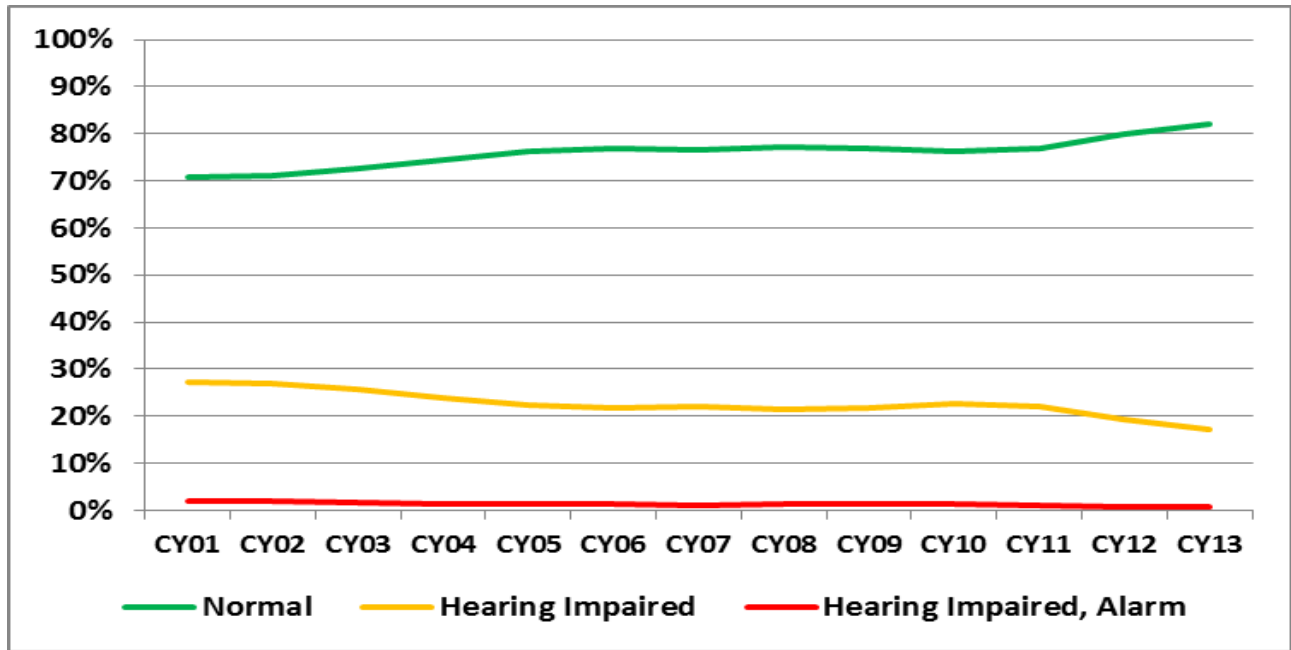
USMC: Medical Readiness Reporting System (MRRS) Command Summary Hearing Conservation.

Interpretation: Data reflects the number of periodic annual screenings (numerator) administered over the self-reported program enrollment (denominator) reported by the echelon II commands. Navy compliance (83.8%) is just below target compliance threshold. While USMC compliance (63.2%) is below target, significant improvement has been made in short order since the release of MARADMIN 010-12.

Goal: 85% target compliance threshold.

Discussion: A key element in a successful hearing conservation program is to ensure all personnel exposed to hazardous noise in the workplace are enrolled in the command's HCP and receive annual audiometric evaluations. While Navy Medicine is responsible for the overall management of the program, ultimately it is the command's responsibility to ensure its personnel receive annual audiograms. This compliance is on the rise when compared to previous years.

Figure 2. MOE 3: Percentage Hearing Impaired



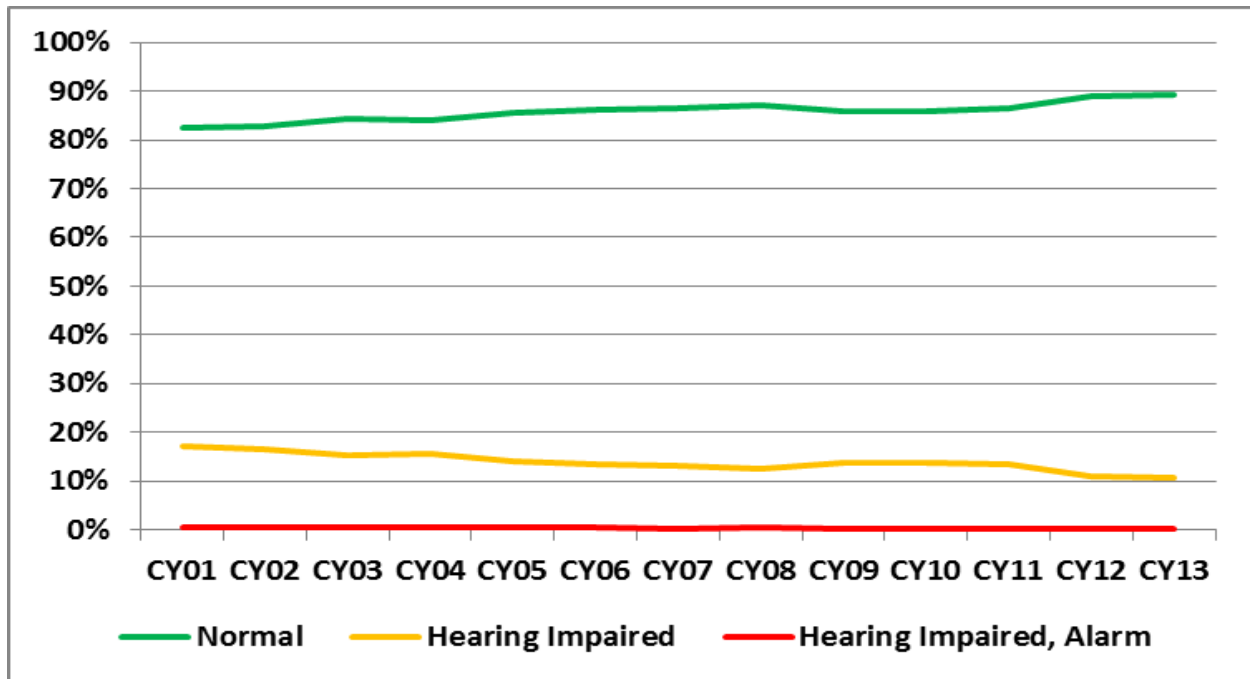
Data Source: All stable hearing screenings within a given calendar year.

Interpretation: Provides a corporate view of hearing impaired vice normal hearing populations. If intervention services are effective, the data should indicate a reduction in the percentage of hearing impaired personnel over time.

Goal: To increase percentage of normal hearing personnel and decrease the percentage of hearing impaired personnel.

Discussion: The data indicates an increase (82%) in the population of normal hearing personnel in 2013 compared to 71% in 2001. Those with hearing impairment have decreased from 29.2% to 17.9% over the same time.

Figure 3. MOE 4: Percentage of New Accessions with Hearing Impairment



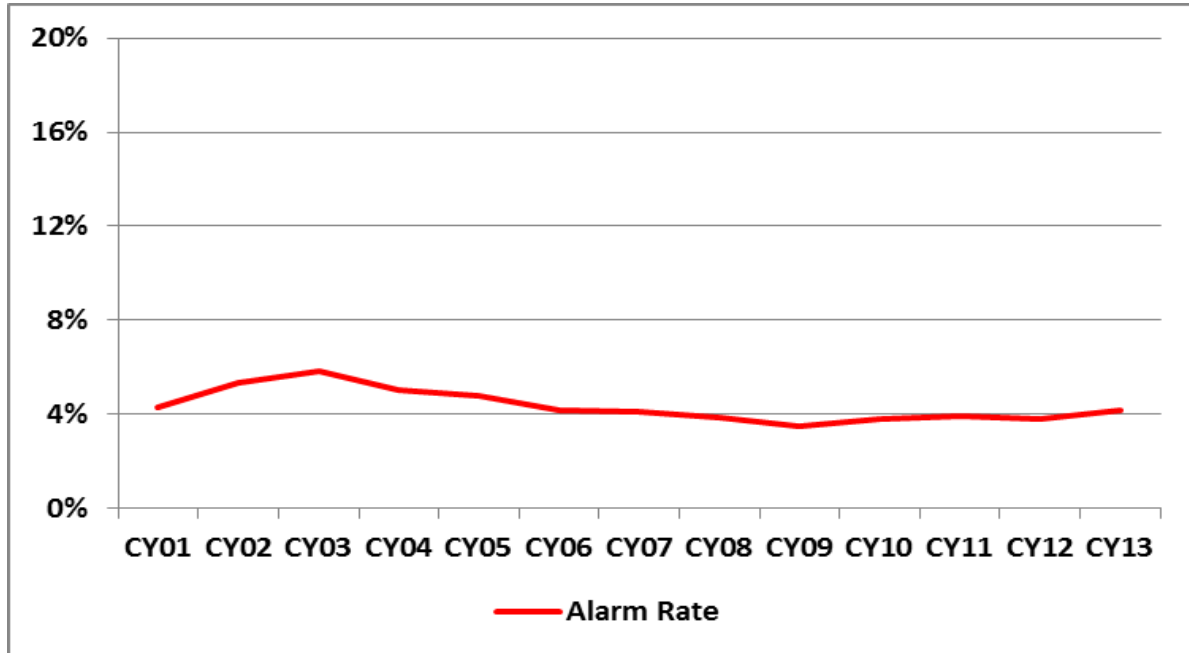
Data Source: All stable initial baseline screenings generated at identified accession point within a given calendar year.

Interpretation: Provides a corporate view on the effectiveness of accession policy and enforcement. Data indicates that 89% of new accessions have normal hearing in 2013 compared to 82% in 2001. There is a significant negative influence from the civilian sector.

Goal: To increase percentage of normal hearing personnel entering into military or civil service.

Discussion: According to the Accession Medical Standards Analysis and Research Activity (AMSARA), retention is negatively affected by recruits entering military service with a medical waiver for hearing loss; more so than recruits with any other type of medical waiver.

Figure 4. MOE 5: Percentage of Sailors and Marines who meet minimum VA Threshold Compensation Requirements



Data Source:

Numerator: All stable termination screenings that meet or exceed the VA standards for compensation consideration.

Denominator: All stable termination hearing screenings.

Interpretation: VA eligible alarm rates have fluctuated but are relatively unchanged over the past 13 years.

Goal: Reduce the percentage of VA eligible cases, based on thresholds obtained on termination hearing screenings.

Discussion: The goal to reduce the percentage of VA eligible cases is a different and more reflective outcome to consider program effectiveness than the overall hard count of Veterans Benefits Administration (VBA) prevalence and disability payout.

Summary and Conclusions

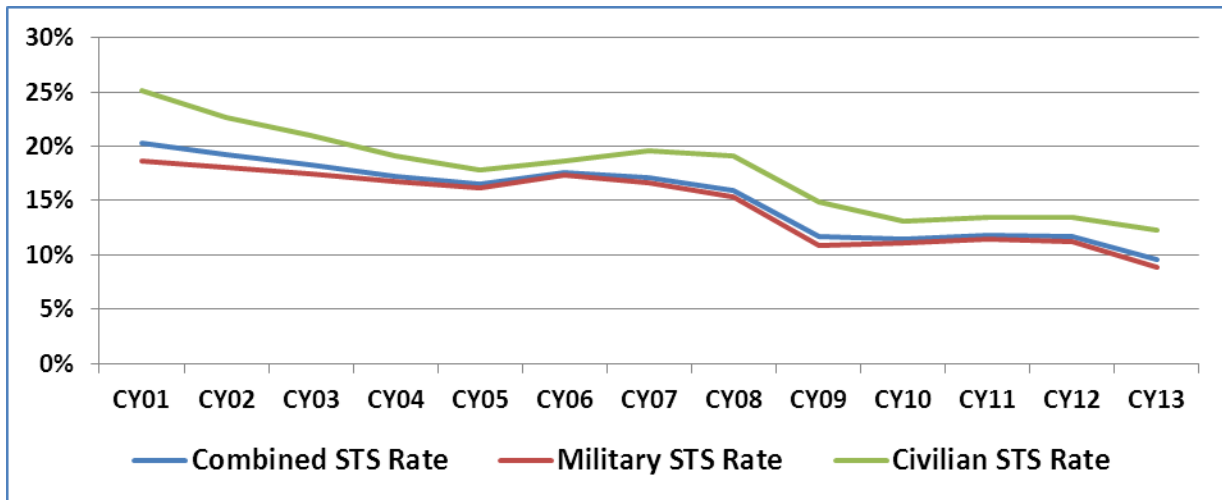
The goal of the Department of Navy's Hearing Conservation and Noise Abatement program is to prevent noise-induced hearing loss, ensure auditory readiness, and drive mission success. While Navy Medicine is responsible for the overall management of the HCP, success depends on command execution. Compiling injury and compliance program metrics at a local level is critical to determining and communicating program effectiveness. However, there is an important place for population metrics when considering the enterprise level management of the HCP. The expanded metrics and this annual compendium report allow for a standardized approach to consider "real-time" (within the calendar year (CY) population metrics that span the entire career lifecycle from accession to separation (termination).

The way ahead:

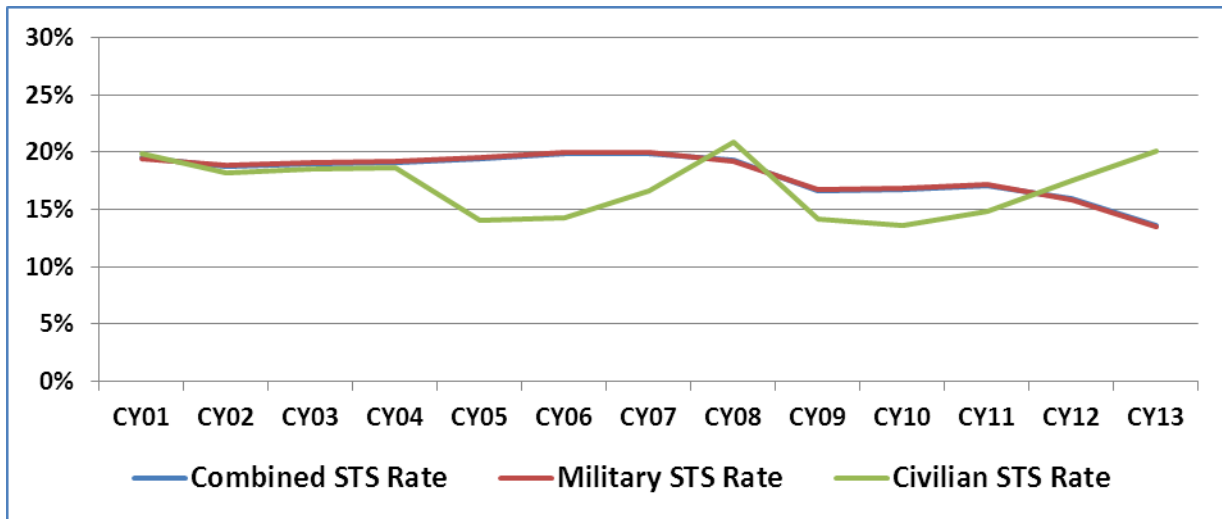
- The Navy Hearing Conservation community will continue to aggressively incorporate prevention models to reduce occupational hearing loss.
- Noise control baselines are established for engineering and acquisition communities.
- Explore opportunities to improve trends among the civilian workforce.
- Annually report population metrics for the expanded MOE's.
- Champion standardizing the MOEs across the services.

Appendix A: Additional MOE 1 Data and Figures

Injury Rate on Periodic Hearing Screening for Navy

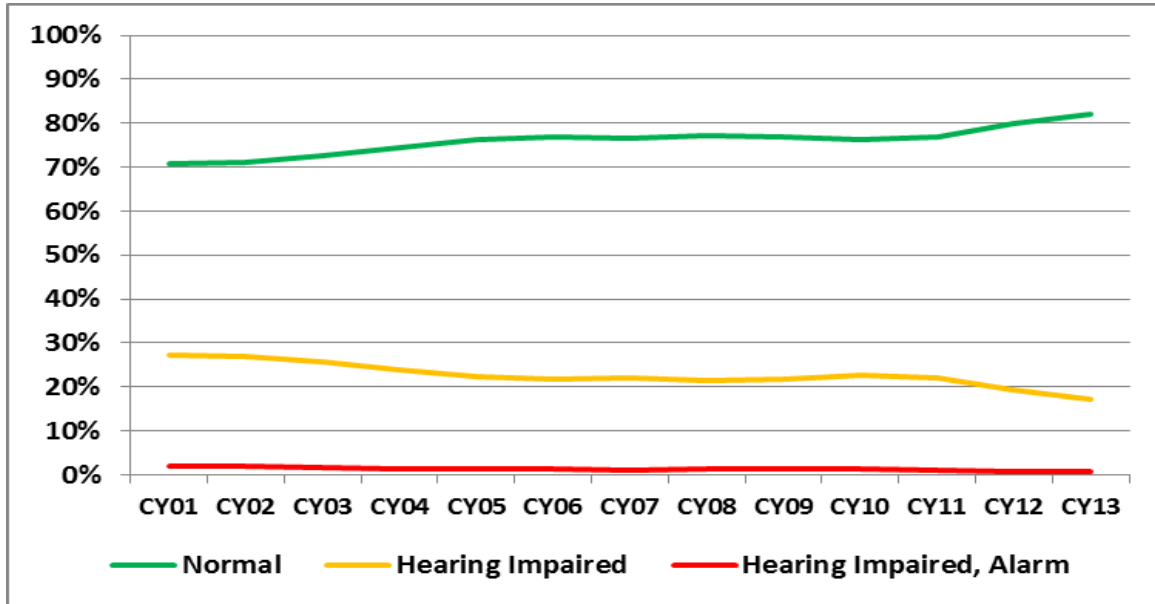


Injury Rate on Periodic Hearing Screening for Marine

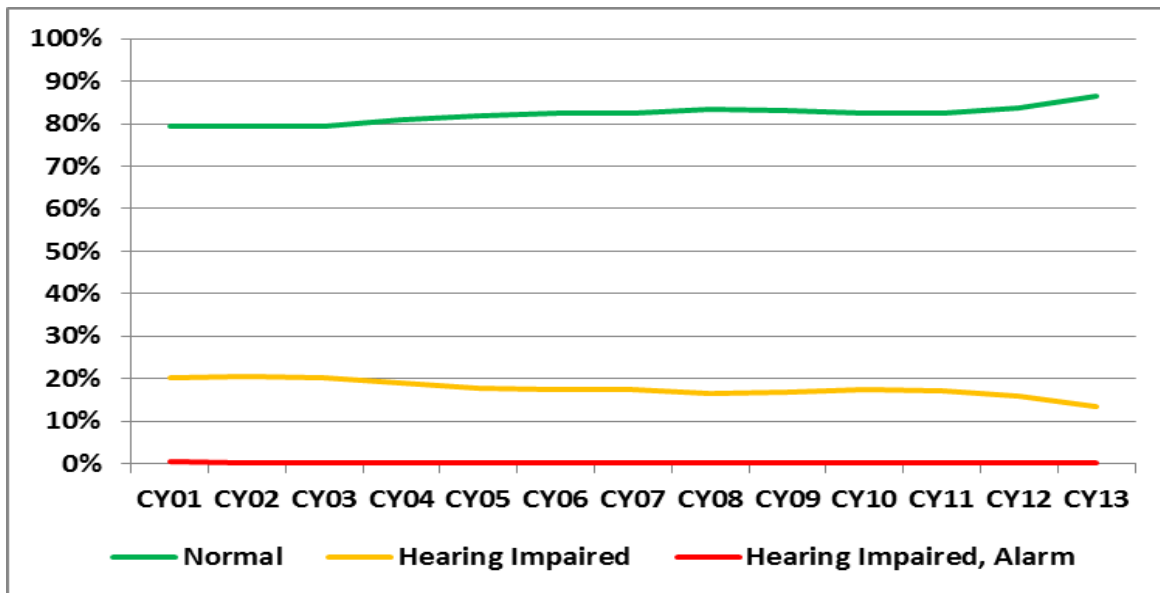


Appendix B: Additional MOE 3 Data and Figures

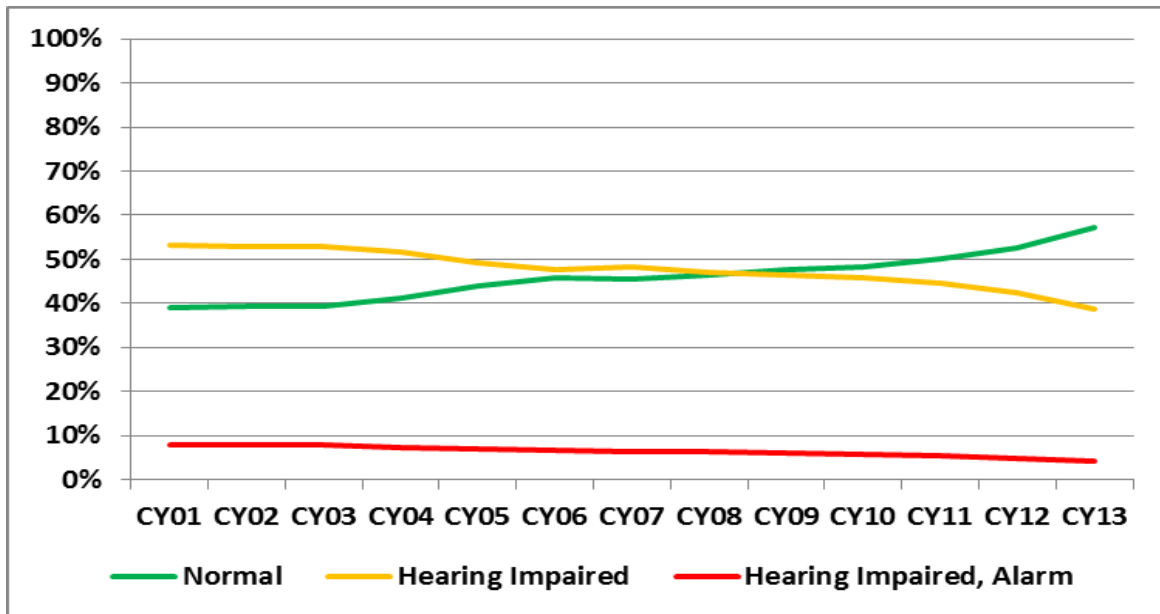
Percentage of Hearing Impaired Across the Navy



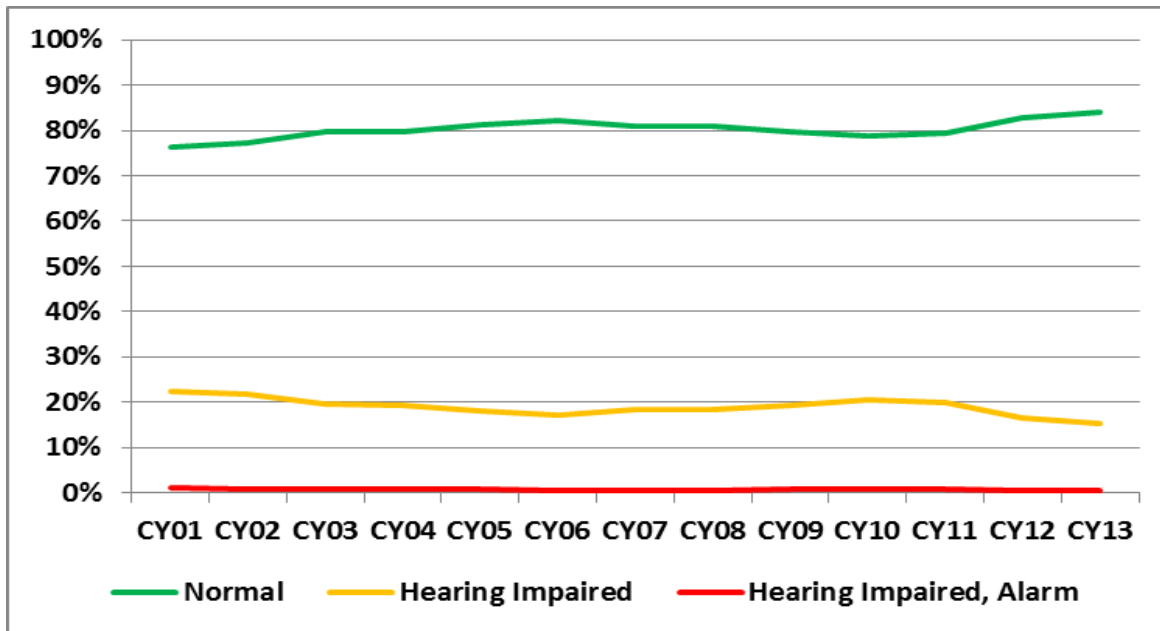
Percentage of Hearing Impaired USN Active Duty



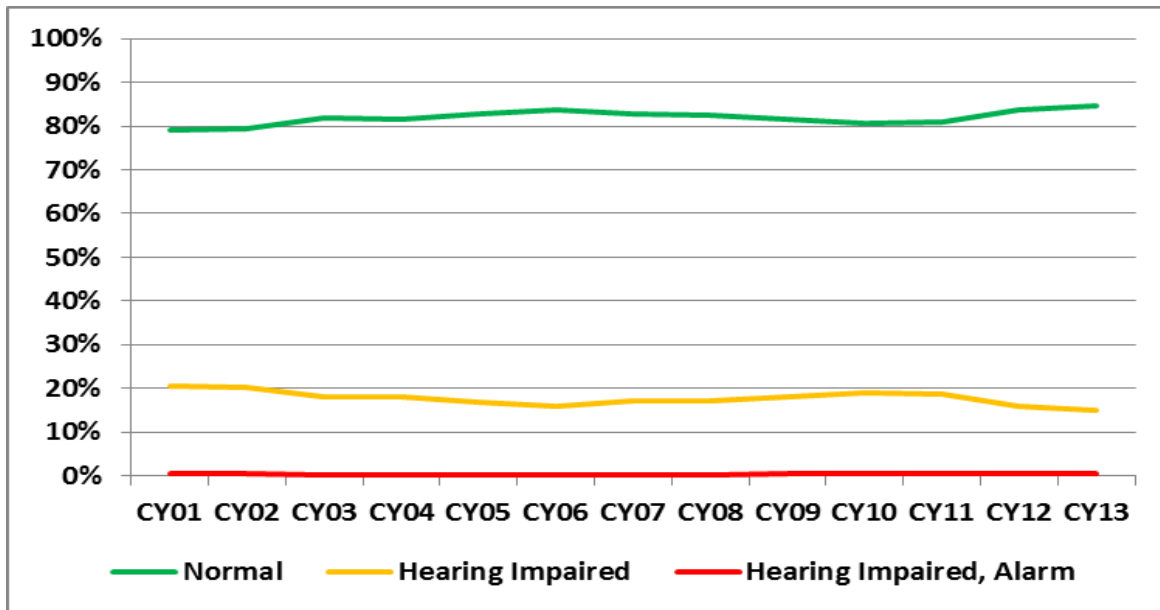
Percentage of Hearing Impaired USN Civilian



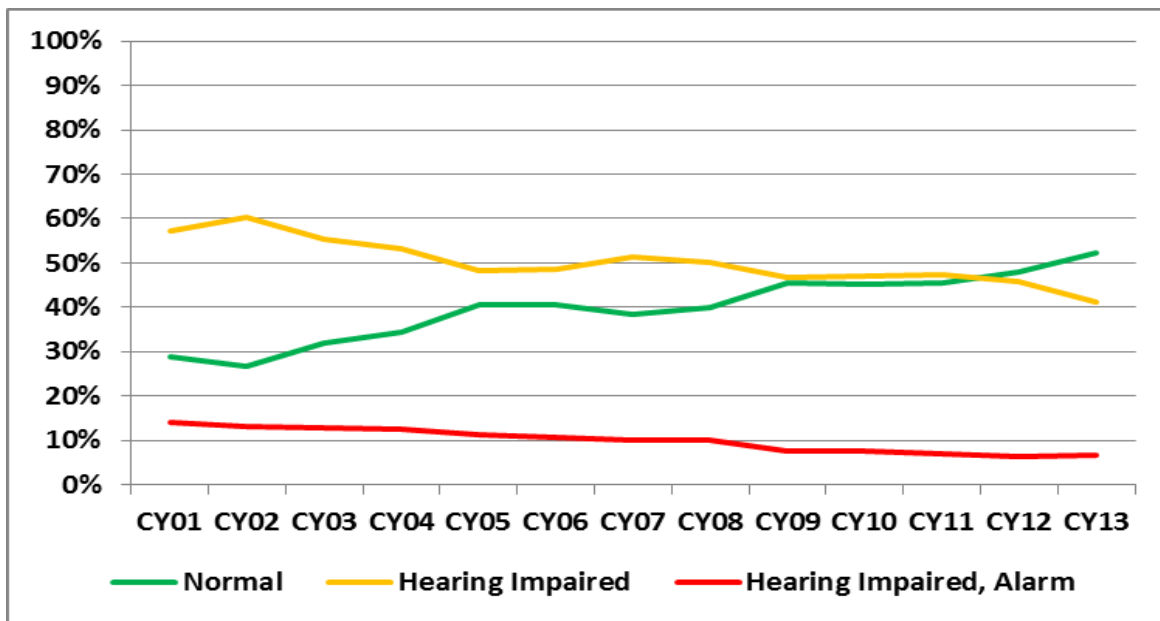
Percentage of Hearing Impaired Across USMC



Percentage of Hearing Impaired USMC Active Duty

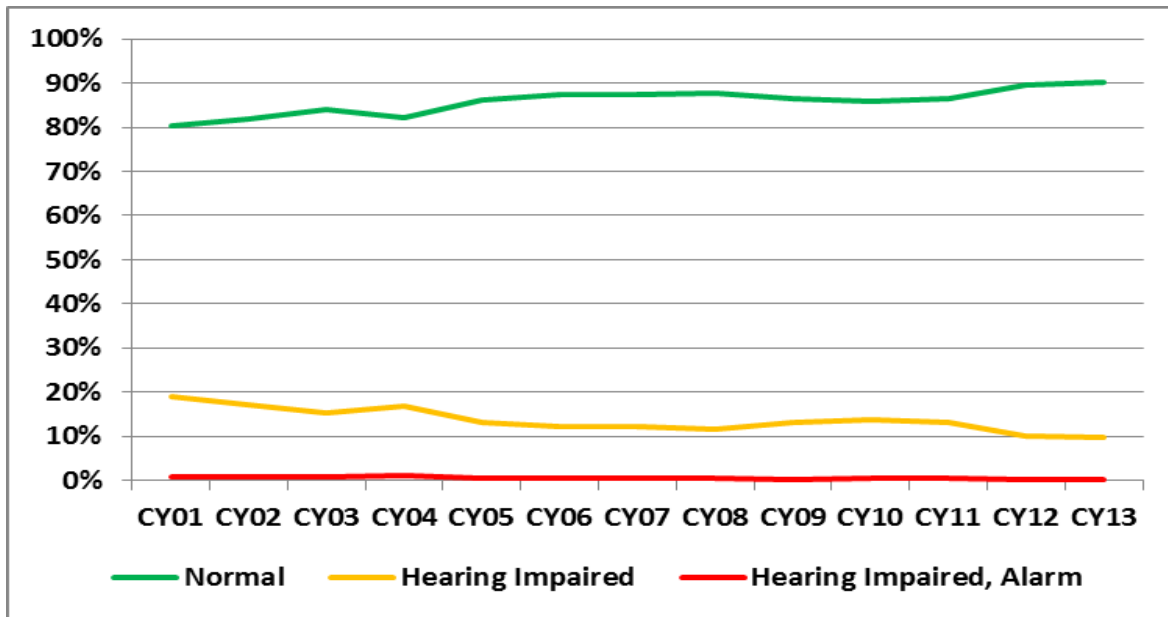


Percentage of Hearing Impaired USMC Civilian

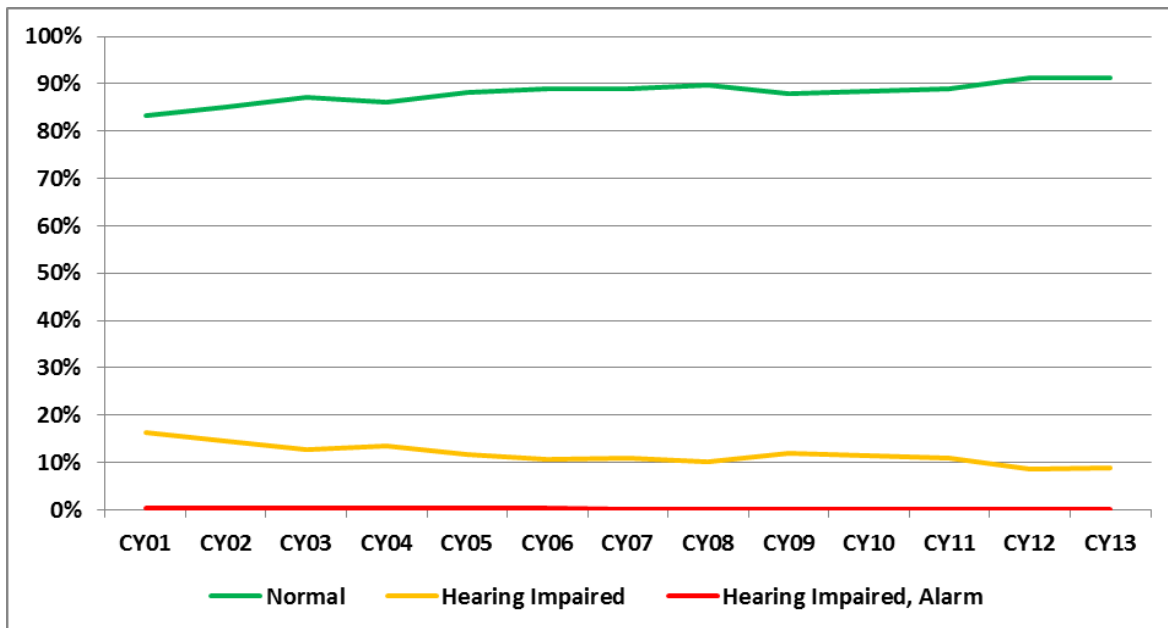


Appendix C: Additional MOE 4 Data and Figures

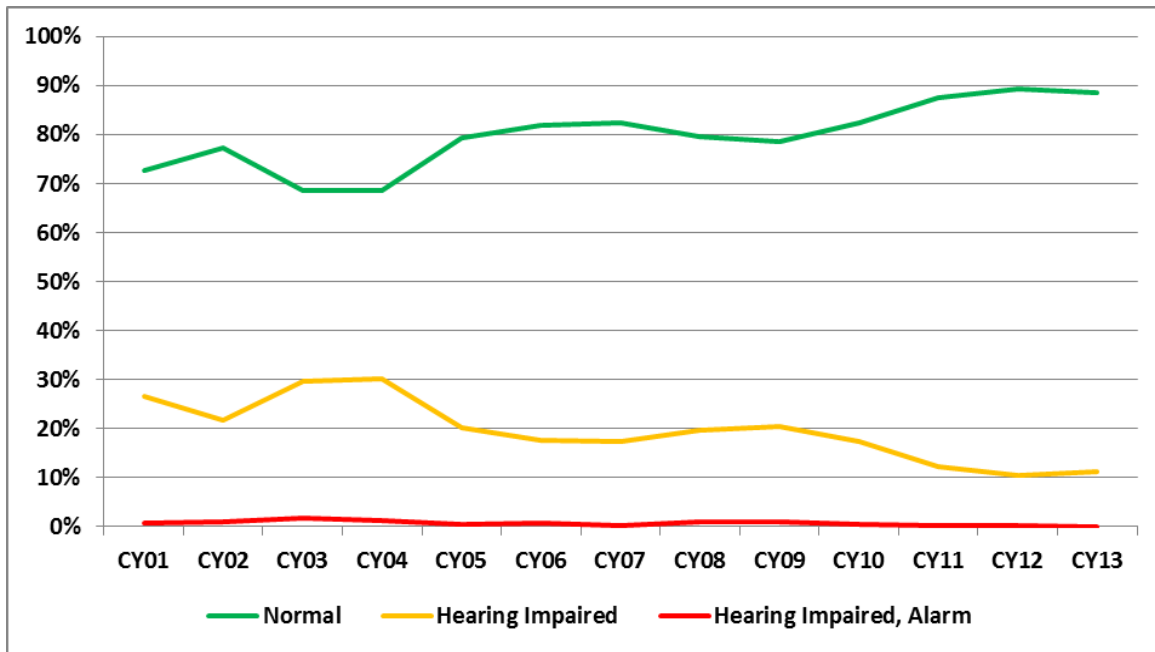
Percentage of Navy Accessions with Hearing Impairment



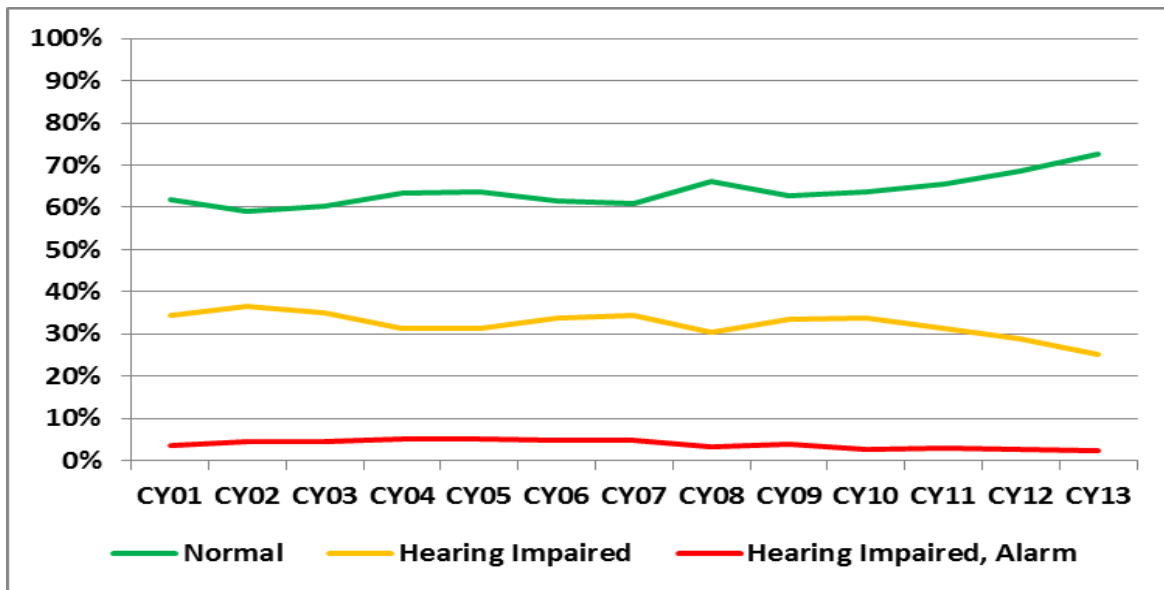
Percentage of Navy Active Duty Accessions with Hearing Impairment



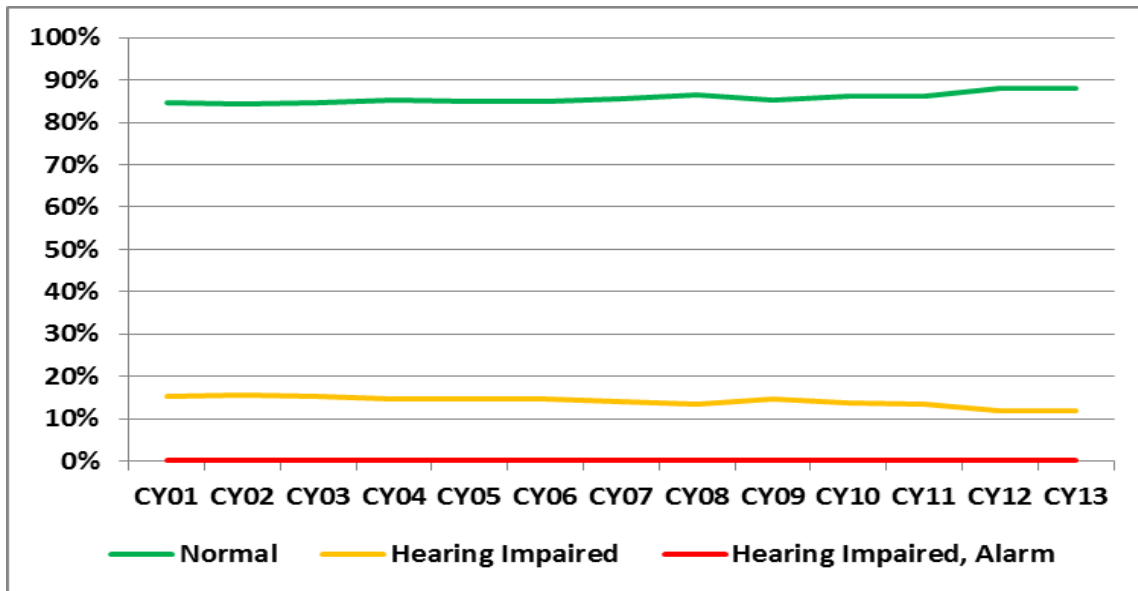
Percentage of Navy Reserve Accessions with Hearing Impairment



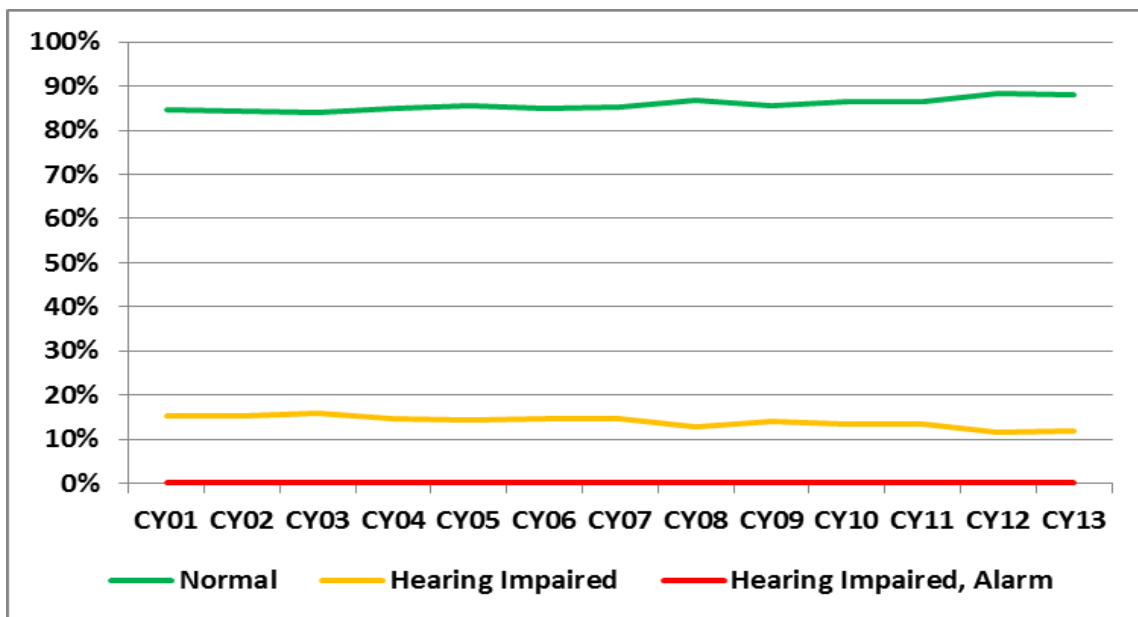
Percentage of Navy Civilian Accessions with Hearing Impairment



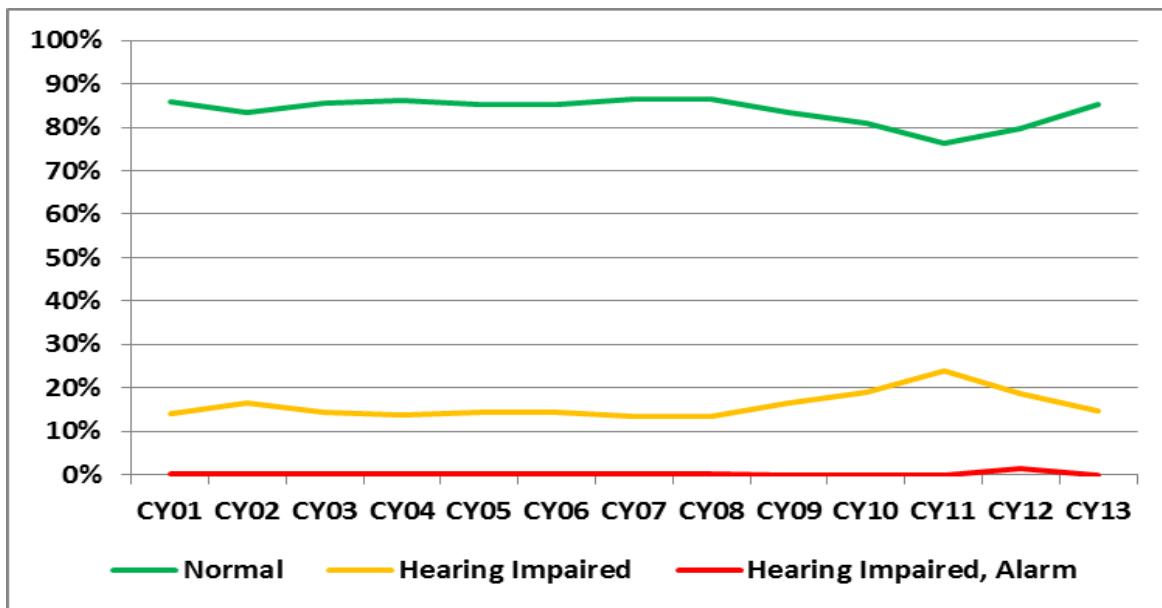
Percentage of USMC Accessions with Hearing Impairment



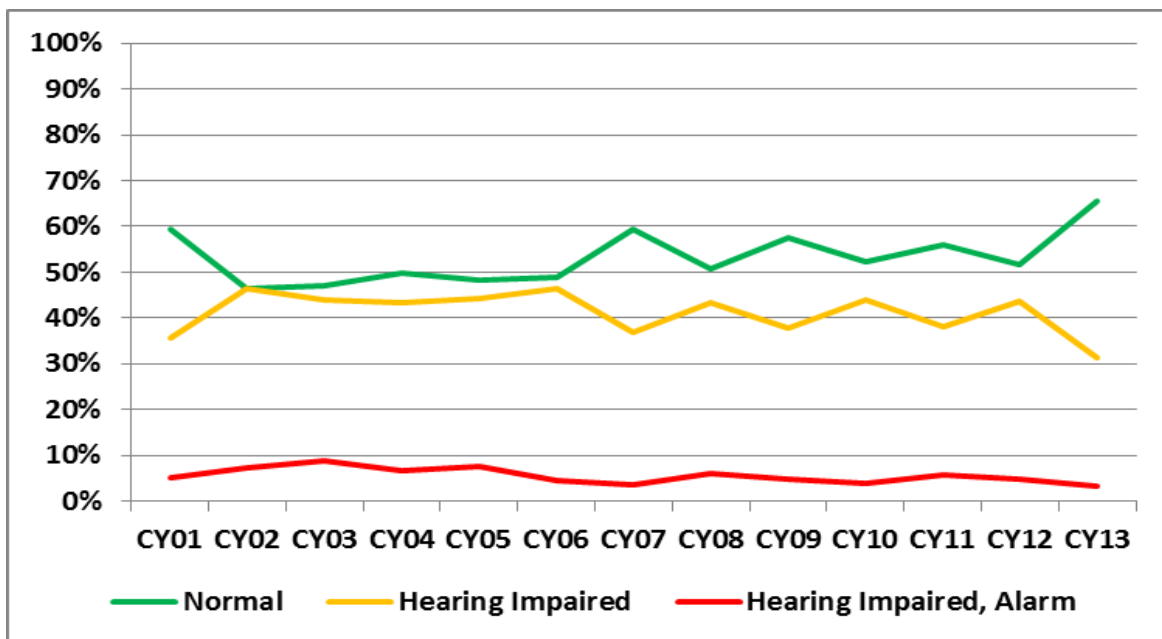
Percentage of USMC Active Duty Accessions with Hearing Impairment



Percentage of USMC Reserve Accessions with Hearing Impairment

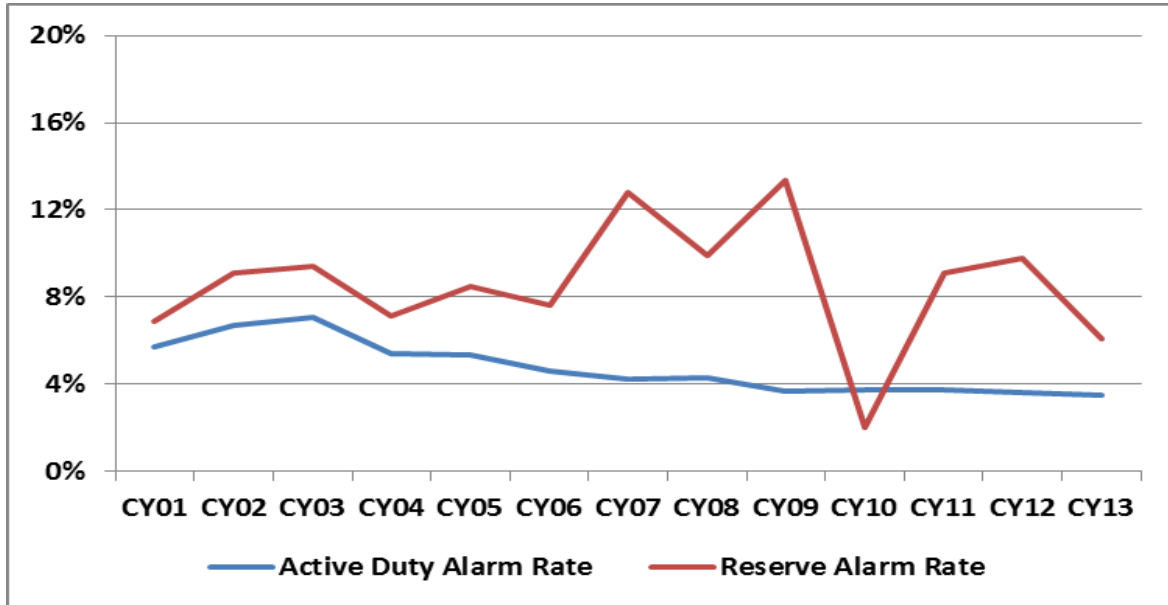


Percentage of Navy Civilian Accessions with Hearing Impairment

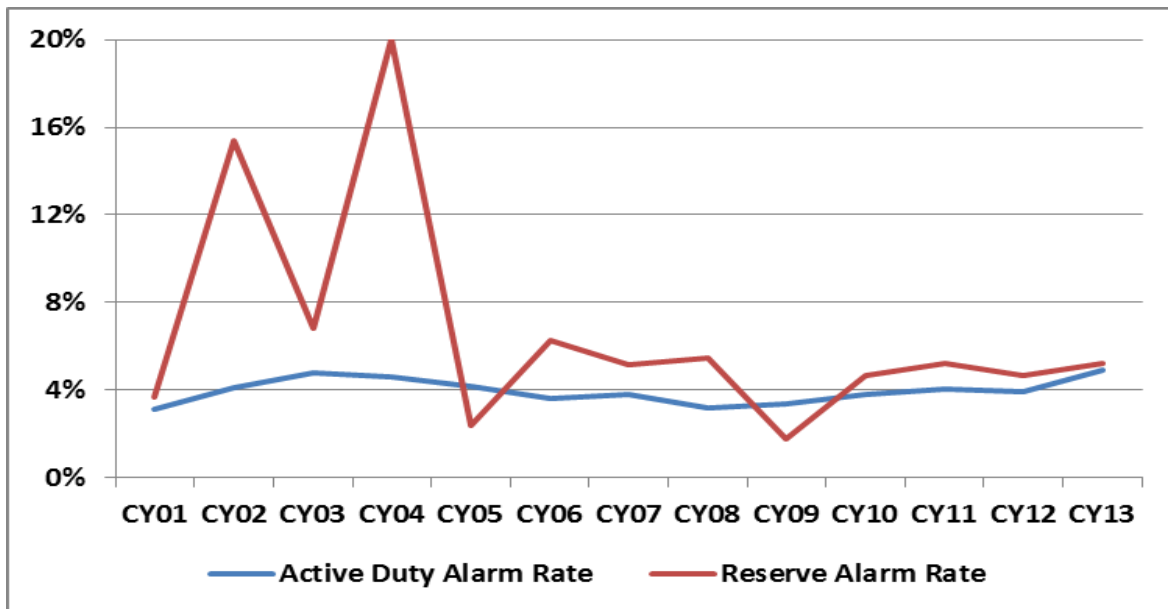


Appendix D: Additional MOE 5 Data and Figures

Percentage of Sailors who Alarm VA Compensation Requirements



Percentage of Marines who Alarm VA Compensation Requirements



Appendix E: Injury Rates: Navy Air Wing, Navy Ship Class, and USMC Major Command

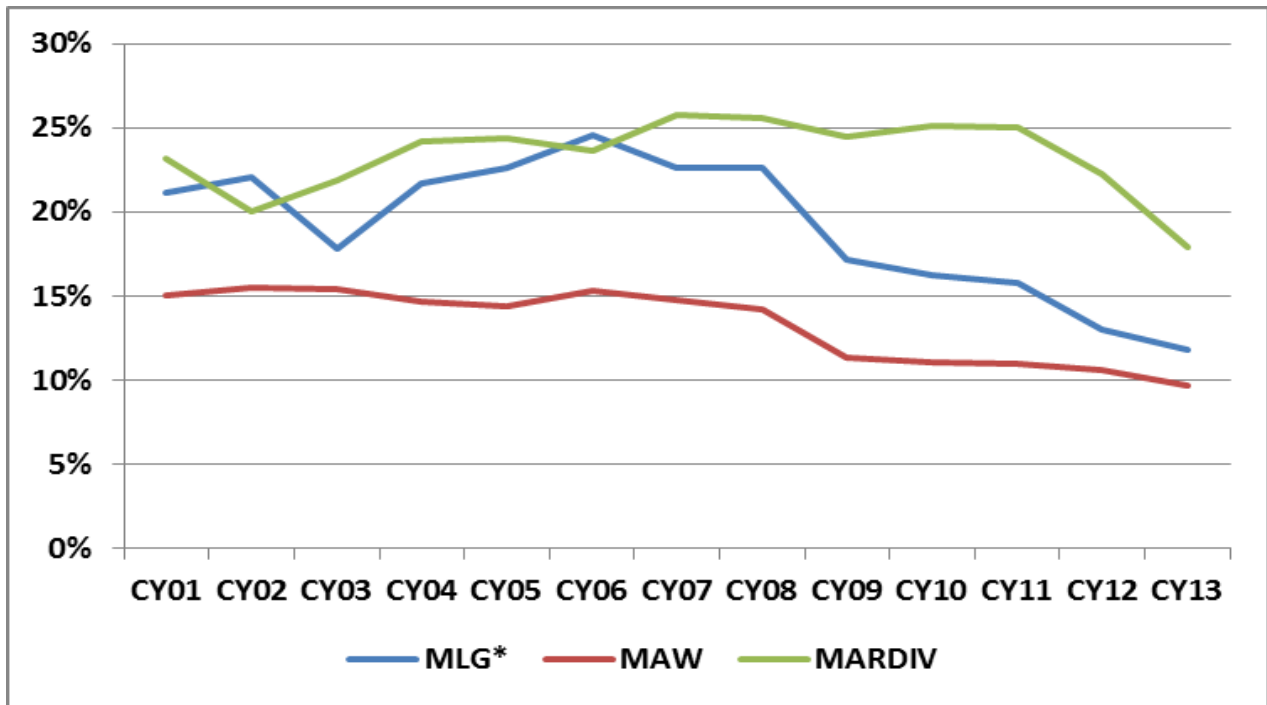
Hearing Injury Rates by Air Wing:

| | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013* |
|---------------|------|------|------|------|------|------|------|------|------|------|---------|------|---------|
| SEACRON | 12% | 13% | 13% | 13% | 9% | 9% | 12% | 11% | 16% | 11% | No Data | 20% | No Data |
| HELANTISUBRON | 13% | 11% | 11% | 10% | 10% | 12% | 13% | 25% | 9% | 11% | 9% | 13% | 9% |
| CBU | 20% | 19% | 16% | 17% | 16% | 16% | 21% | 15% | 12% | 11% | 18% | 10% | 8% |
| FLELOGSUPPRON | 16% | 15% | 16% | 16% | 13% | 15% | 17% | 14% | 10% | 11% | 10% | 10% | 8% |
| HELUPPRON | 12% | 12% | 13% | 13% | 12% | 11% | 10% | 10% | 8% | 8% | 7% | 9% | 8% |
| FITRON | 18% | 15% | 13% | 16% | 17% | 18% | 18% | 16% | 9% | 5% | 10% | 13% | 6% |
| VAW | 12% | 13% | 16% | 15% | 13% | 14% | 11% | 13% | 8% | 11% | 13% | 10% | 6% |
| STRKFITRON | 15% | 14% | 13% | 15% | 15% | 17% | 17% | 16% | 25% | 7% | 8% | 9% | 5% |
| VAQRON | 15% | 16% | 13% | 14% | 15% | 18% | 17% | 16% | 8% | 8% | 6% | 8% | 5% |
| HELMINERON | 15% | 15% | 12% | 9% | 14% | 12% | 11% | 9% | 6% | 8% | 9% | 8% | 4% |
| PATRON | 15% | 13% | 12% | 11% | 11% | 11% | 13% | 13% | 8% | 6% | 6% | 4% | 4% |
| FAIRECONRON | 13% | 11% | 11% | 9% | 8% | 10% | 12% | 10% | 5% | 4% | 3% | 5% | 3% |
| CAW | 38% | 32% | 22% | 17% | 23% | 24% | 26% | 8% | 13% | 12% | 10% | 50% | 0% |
| FLECOMPRON | 25% | 20% | 20% | 14% | 21% | 21% | 16% | 6% | 50% | 50% | 0% | 0% | 0% |

Hearing Injury Rates by Ship Class:

| | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013* |
|------|------|------|------|------|------|------|------|------|------|------|---------|------|---------|
| AR | 16% | 23% | 18% | 27% | 20% | 26% | 9% | 25% | 50% | 40% | No Data | 100% | No Data |
| LHA | 26% | 21% | 24% | 17% | 15% | 30% | 15% | 23% | 10% | 20% | 11% | 20% | 37% |
| AOE | 29% | 21% | 21% | 26% | 24% | 20% | 39% | 43% | 14% | 25% | 12% | 32% | 17% |
| ACU | 17% | 20% | 20% | 16% | 14% | 16% | 17% | 15% | 11% | 10% | 15% | 10% | 14% |
| LPD | 22% | 23% | 27% | 19% | 19% | 18% | 13% | 14% | 13% | 13% | 17% | 20% | 13% |
| CVN | 16% | 19% | 15% | 16% | 15% | 19% | 12% | 17% | 14% | 17% | 19% | 17% | 12% |
| FFG | 26% | 24% | 21% | 20% | 14% | 17% | 17% | 14% | 10% | 10% | 9% | 12% | 12% |
| LHD | 25% | 17% | 27% | 17% | 19% | 17% | 16% | 15% | 16% | 15% | 13% | 17% | 12% |
| DDG | 26% | 21% | 22% | 19% | 17% | 19% | 17% | 15% | 13% | 14% | 12% | 14% | 10% |
| CG | 21% | 21% | 20% | 18% | 16% | 17% | 16% | 14% | 12% | 11% | 14% | 12% | 10% |
| PC | 18% | 20% | 21% | 18% | 18% | 33% | 10% | 25% | 12% | 15% | 22% | 14% | 10% |
| LSD | 18% | 19% | 24% | 19% | 16% | 18% | 17% | 17% | 13% | 13% | 13% | 13% | 9% |
| SSN | 22% | 20% | 18% | 17% | 15% | 13% | 13% | 12% | 9% | 10% | 9% | 9% | 6% |
| SSBN | 10% | 12% | 8% | 10% | 10% | 10% | 12% | 9% | 4% | 3% | 3% | 4% | 3% |
| DD | 22% | 21% | 18% | 16% | 16% | 9% | 11% | 0% | 0% | 33% | No Data | 0% | 0% |

USMC Hearing Injury Rates by Major Command:



*Includes both FSSG and MLG