



DEPARTMENT OF THE NAVY

NAVAL HOSPITAL
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IN REPLY REFER TO:
6260
Ser 06IH/17590
21 Jul 17

From: Commanding Officer, Naval Hospital, Beaufort
To: Commanding Officer, Marine Corps Air Station, Beaufort,
SC

Subj: PERIODIC INDUSTRIAL HYGIENE SURVEY OF MCAS AIRCRAFT
RESCUE AND FIREFIGHTING, MCAS PISTOL RANGE AND MCAS
STRUCTURAL FIRE AND RESCUE SERVICES DIVISION

Ref: (a) OPNAVINST 5100.23G
(b) MCO 5100.8F

Encl: (1) Industrial Hygiene Survey Report

1. Per references (a) and (b), a periodic Industrial Hygiene Survey of MCAS Aircraft Rescue and Firefighting (ARFF), MCAS Pistol Range and MCAs Structural Fire and Rescue Services Division was completed on 26 Jun 2017. The purpose of this survey was to identify and evaluate potential health hazards in the workplace and recommend appropriate controls to ensure the health and safety of personnel.

2. Enclosure (1) contains the Industrial Hygiene Survey report. The Industrial Hygiene Survey report includes an executive summary, a review of Navy Occupational Safety and Health programs, workplace evaluations, recommended medical surveillance, an evaluation of reproductive hazards and proposed workplace monitoring plan.

3. Questions concerning this report may be directed to Esmeraldo Ranches at 228-6198 or via email at esmeraldo.l.ranches.civ.@mail.mil.

A handwritten signature in cursive script that reads "Angela Dean".

A. M. W. DEAN
By direction

Copy to:
Director, MCAS Safety and Standardization
NHB Occupational Health

PERIODIC INDUSTRIAL HYGIENE SURVEY

**AIRCRAFT RESCUE AND FIREFIGHTING (ARFF), PISTOL RANGE
AND STRUCTURAL FIRE AND RESCUE SERVICES DIVISION
MARINE CORPS AIR STATION (MCAS) BEAUFORT, SC**

JULY 2017

Survey Conducted By: E. L. RANCHES
Industrial Hygienist

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Industrial Hygiene Officer
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**PERIODIC INDUSTRIAL HYGIENE SURVEY OF MCAS AIRCRAFT RESCUE AND FIREFIGHTING (ARFF),
MCAS PISTOL RANGE AND MCAS STRUCTURAL FIRE AND RESCUE SERVICES DIVISION
JULY 2017**

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DOEHRS SHOP PRIORITY GUIDE		
PRIORITY 1	PRIORITY 2	PRIORITY 3
IH SURVEY CONDUCTED ANNUALLY	IH SURVEY CONDUCTED EVERY TWO YEARS	IH SURVEY CONDUCTED EVERY FOUR YEARS
<p>GENERAL DESCRIPTION- Shops requiring complex IH assessment or significant monitoring.</p> <p>Typically complex industrial or complex medical work centers.</p>	<p>GENERAL DESCRIPTION- Shops requiring less complex IH assessment and monitoring.</p> <p>Typically industrial or medical work centers with moderate hazards.</p>	<p>GENERAL DESCRIPTION- Shops where work is low hazard and no periodic monitoring is required.</p> <p>Typically performed primarily in an administrative environment.</p>
<p>Hazards are poorly defined or controlled- work environment or processes unstable (e.g., exposure assessment acceptable but has high level of variability).</p>	<p>Hazards well defined or controlled. Work environment and processes stable.</p>	<p>No hazards to extremely low hazards, work environment and processes stable.</p>
<p>Except as noted below, a requirement for exposure based occupational health exams for chemical and physical stressors, all mixed exposures and when the IH recommends respirator use.</p> <p>Exceptions: Noise 503/512, Blood and/or Body Fluids 178, Radiation-Ionizing 505; Radiation-Laser 506; Animal Associated Disease 207; Hazardous Drugs 110; and Specialty Exams</p>	<p>No exposure-driven occupational health exams, other than annual audiograms.</p> <p>Specialty exams (job related) such as childcare worker or healthcare worker may be required and listed by IH in the survey report.</p>	<p>No exposure-driven occupational health exams.</p> <p>Specialty exams (job related) for healthcare worker (HCW) based on the broad definition of HCW may be required and listed by IH in the survey report.</p>

EXECUTIVE SUMMARY

A periodic industrial hygiene survey of Aircraft Rescue and Firefighting (ARFF, Pistol Range and Structural Fire and Rescue Services Division , Marine Corps Air Station (MCAS), Beaufort, SC was completed on 6 July 2016 to identify significant changes in recognized health hazards, assess worker exposure profile and establish priority for action.. No formal response is needed. These facilities will receive an Industrial Hygiene (IH) Survey on an annual basis. However, any significant changes affecting the workplace, work force and environmental agents used will result in a need for a re-evaluation to occupational exposure judgements and eventual implementation of adequate hazard control measures. Contact IH for a re-evaluation, as required.

Engineering designs; standard operating procedures (SOPs); purchasing transactions; and service contracts relevant to IH or occupational health must be reviewed by IH prior to construction or issuance of SOPs, purchases or contracts. Failure to do so may result in unnecessary operational costs and inability to recognized health and safety risks in the workplace. The following is a summary of major findings and recommendations:

FINDING: Lead exposure in MCAS Pistol Range continues to be above the Permissible Exposure Limit (PEL) or Medical Surveillance Action Limit (MSAL). No changes in the operation of the range.

RECOMMENDATION: Please see the administrative and engineering controls recommended in the Lead Comments-Other Applicable Programs in Safety and Occupational Health Program Management Assessment of this survey.

REFERENCE: NAVMC Directive 5100.8 MARCOR OSH Program Manual Chapter 16 Para 1604

FINDING: The pistol range bathroom facilities were locked during firing session.

RECOMMENDATION: Bathroom facilities should be available for use during and after weapons firing to allow personnel to wash face and hands before returning to work or going home.

REFERENCE: 29 CFR 1910.1025(i) Hygiene Facilities and Practices

FINDING: The eyewash station in Aircraft Rescue and Firefighting was blocked by a table with fire protection gear. There is no maintenance log for the eyewash station.

RECOMMENDATION: Eye eyewash station is to be inspected weekly and documented in a maintenance log. The eyewash station must have an unfettered access at all times in case of emergencies.

REFERENCE: NAVMC Directive 5100.8 Para 13007 (10) MARCOR OSH Program Manual Chapter 13 Personal Protective Equipment.

FINDING: There are no documents about the annual audit of Respiratory Protection Program (RPP) for Aircraft Rescue and Firefighting Shop.

RECOMMENDATION: Ensure that this annual inspection is conducted by the Base Program Manager.

REFERENCE: OPNAVINST 5100.23G Chapter 15 Para 1513(a) 8 Respiratory Protection Program.

FINDING: In Structural Fire and Rescue Services Division, the current Respiratory Protection Program Manager (RPPM) designation letter is not available.

RECOMMENDATION: Ensure that the appointment letter is duly signed and available in the program binder.

REFERENCE: OPNAVINST 5100.23G Chapter 15 Para 1513(a) Respiratory Protection Program.

NOTICE: At the end of this report is a Customer Satisfaction Survey through which guides our report process through customer feedback.

RECOMMENDATION: Please complete the Customer Satisfaction Survey and forward your comments to IH. Please distribute this survey report through all levels so that supervisors and employees are aware of its contents for work center occupational safety and health recommendations. Industrial Hygiene also has an electronic Interactive Customer Evaluation (ICE) customer service feedback link at http://ice.disa.mil/index.cfm?a=card&sp=124393&s=350&dep=*DoD&sc=11

**PERIODIC INDUSTRIAL HYGIENE SURVEY
MCAS ARFF, MCAS PISTOL RANGE AND MCAS STRUCTURAL FIRE AND RESCUE SERVICES
DIVISION**

Ref: (a) MCO 5100.8F Marine Corps Occupational Safety and Health Program
Manual
(b) NAVHOSPBFT ltr 6260 Ser 06IH/151108 of 25 Jul 2016

1. Introduction. Per reference (a), a periodic Industrial Hygiene Survey was conducted to update information reported in reference (b), and consisted of a site visit, walk-through evaluations of all work areas, a review of the hazardous material inventory, and employee interviews as appropriate to assist in the industrial hygiene assessment.

2. Report Purpose and Use. Please retain this report on file. It is recommended that this report is read by All Hands. This is a comprehensive approach that gives workers confidence that harmful and hazardous exposures are identified and managed. Questions regarding findings, recommendations or evaluation should be addressed to the servicing Industrial Hygienist for this command.

3. Re-evaluation Schedule and Changes in the Workplace. Reassessment is an ongoing process to review process changes, environmental agent usage or material substitution that may alter the worker exposure assessment. It helps to identify subtle but important changes that may not have been recognized and reported. Reevaluation will also determine the effectivity of engineering control that is in place to lower the occupational exposure risk. Industrial Hygiene services should be notified of such changes, per reference (a).

4. Safety and Occupational Health (SOH) Program Assessment. The following table provides a summary of SOH program evaluations as identified in reference (a) for this command:

SAFETY AND OCCUPATIONAL HEALTH PROGRAM MANAGEMENT ASSESSMENT
MCAS ARFF, MCAS PISTOL RANGE AND MCA STRUCTURAL FIRE AND RESCUE SERVICES DIVISION
JULY 2017

New or Significantly Modified Work Center Operations/Processes?

- No significant changes in operations/processes were identified this survey period.
- Baseline Industrial Hygiene Survey and no changes would be identified during this survey period.
- New or significantly modified work center operations/processes were found and documented during this survey period.
- Work center personnel have the potential to be deployed and have been advised that operations addressed in this report are applicable to garrison/base operations only.
- Work center personnel have the potential to be loaned to other commands and have been directed to the appropriate command survey.

Comments: The following new or significantly modified work center operations/processes were identified this survey period:

The target rail system in Pistol Range is inoperable mechanically. The target silhouette is being moved by hand to the right range position by shooters. Work request for refurbishment is submitted. The range procedures are strictly enforced ensuring safety during weapons training evolution.

For purposes of this survey, "significant changes" are defined as workplace modifications that could require a change in recommended medical surveillance enrollment, personal protective equipment or exposure control measures (ventilation, etc).

Management of Reproductive Hazards:

- Y N N/A: Are reproductive hazards present in command work center(s)?
- Y N N/A: Any changes in reproductive hazards from previous survey?
- Y N N/A: Command properly addresses both male and female reproductive concerns?
- Y N N/A: Any changes in reproductive hazards from previous survey?
- Y N N/A: Noise is a potential reproductive hazard for command personnel.
- Y N N/A: Heat stress is a potential reproductive hazard for command personnel.
- Y N N/A: Chemical/physical stressors are potential reproductive hazards for command.

Comments: Specific reproductive hazards are listed in the individual work center hazard assessments found in the back of this report.

Lead, Toluene, Xylene, noise and heat stress are Navy Marine Corps Public Health Center (NMCPHC) listed reproductive hazards. It is prudent to reduce, minimize or eliminate these occupational hazards to personnel in the workplace. Replacing these harmful products with safer substitute may eliminate the risk. If substitution is not feasible, explore the limited use, isolation of process to avoid collateral exposure and wear proper PPE to minimize the contact with the product.

For heat stress prevention, allow an adequate acclimatization period; administrative work/rest cycle and recommended fluid intake to prevent the likelihood of heat injury.

Reference: OPNAVINST 6000.1C - Navy Guidelines Concerning Pregnancy and Parenthood; NMCPHC Reproductive Hazards Tech Manual - 2010 NMCPHC-TM-OEM 6260.01C April 2010.

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Hazardous Material Control and Management (HMC&M) Program:

- Y N N/A: Authorized User's List (AUL) Available?
 Y N N/A: Accurate AUL?
 Y N N/A: Material Safety Data Sheets (SDS) Files Available?
 Y N N/A: Accurate SDS File?
 Y N N/A: Personnel are aware of HMC&M hazards and use appropriate personal protective equipment?

Comments: Hazardous communication training provides awareness of the occupational risk of chemicals used in the work space. Using the material's Safety Data Sheets (SDS), personnel working with these materials can learn the dangers of the chemical if not properly handled or misused. The documentation indicates that personnel are informed and understand the potential hazards of the materials and worker protective measures to be used.
program.

Reference: OPNAVINST 5100.23(series) Navy Safety and Occupational Health Program Manual; 29 CFR 1910.1200 Hazard Communications

Noise and Hearing Conservation Program (HCP):

- Y N N/A: Noise hazardous operations/equipment identified in this work center?
 Y N N/A: Noise hazardous areas/equipment properly labeled?
 Y N N/A: Are personnel recommended for HCP enrollment?
 Y N N/A: Are personnel receiving annual audiograms/HCP Training?
 Y N N/A: Are hearing protective devices (HPD) readily available for worker use?
 Y N N/A: Is the correct type/level of HPD available and being used?
 Y N N/A: Personnel perform weapons firing and have been advised to use CAEPs?
 Y N N/A: Is HPD used in noise hazardous areas or when working with noise hazardous equipment?

Comments: Noise protection signs have two illustrations as to the proper hearing protection worn in the MCAS Pistol Range. Double hearing protection must be described in the signage and conspicuously posted within the hazardous area.

Reference: MCO 6260.3 Para 5 (b) Labeling of Hazardous Noise Areas and Equipment.

As per MCO 6260.3A, 26 Sep 16, all active duty Marines shall be enrolled in HCP. The unknown exposure to hazardous noise during field training, weapons qualification and deployment established this action.

Noise hazardous equipment and operations are listed in the individual work center hazard assessments found in the back of this report. If applicable, recommendations for the use of hearing protective devices are found there as well.

Lead is an ototoxic agent that can create collateral insult to auditory nerves. Lead and noise concomitant exposures may form an additive risk of hearing loss.

Reference: MARADMIN 010/12 dated 06 Jan 12 Hearing Conservation Readiness; MCO 6260.1E Marine Corps Hearing Conservation Program; OPNAVINST 5100.23G Chapter 18, Navy Safety & Occupational Health (SOH) Program Manual

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Ventilation:

- Y N N/A: Are ventilation systems used to control workplace exposures?
 Y N N/A: Are the systems effective and operating properly?

Comments: The ARFF local exhaust system is under Public Works' plan for repair and refurbishment. This project is still pending; however, the open staging bays during routine equipment maintenance have an adequate cross wind to prevent the pooling of fumes and diffusing contaminant to the environment.

At the current placement of space fans in Pistol Range, the transport velocity of lead laden air away from the breathing zone of shooters and range masters was inadequate. Lead monitoring continues to be at or above the MSAL or PEL. Contact Public Works to design an engineering control to mitigate the lead hazard at the lowest level possible during small arms fire.

Reference: ACGIH Industrial Ventilation: A Manual of Recommended Practices, 22nd Edition

Medical Surveillance Program Status

- No MSP enrollment is required for current work center operations.
 MSP has been recommended by IH.
 Occupational medical exams (OME)/ job specialty exams are required by task/trade.
 No MSP enrollment recommendations/changes from the previous IH Survey.

Comments: If applicable, MSP and OME are annotated in the Medical Surveillance Summary and on work center Individual Hazard Assessments enclosed at the back of this report.

SECNAV 51001T (Jul 2013) Supervisor Medical Surveillance and Certification Exam Referral is the form for supervisors to use when referring personnel for required medical surveillance exam or health certification. After completion of the exam by the supporting Occupational Health Clinic, the form is returned back to the supervisor for documentation indicating program compliance and tracking. Shop Medical Surveillance Summary at the end of the shop Individual Hazard Assessment report identifies workers that are occupationally exposed and needing medical surveillance exam or certification. SECNAV 51001T form and Supervisor's Guide to Medical Surveillance are available at the Navy Safety Center webpage at the following URL:
<http://www.public.navy.mil/navsafecen/pages/osh/medsurv.aspx>

Most of the firing coaches in MCAS Pistol Range were loaned from other tenant commands on a short term basis. Personnel temporarily assigned to MCAS Pistol Range are not recommended to the Lead Medical Surveillance Program.

SAFETY AND OCCUPATIONAL HEALTH PROGRAM MANAGEMENT ASSESSMENT
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Ergonomics:

- Y N N/A: Potential for ergonomic injuries for office/ administrative tasks?
- Y N N/A: Potential for ergonomic injuries for shop tasks?
- Y N N/A: Office equipment/furniture incorporates good ergonomic design?
- Y N N/A: Shop equipment/work center incorporates good ergonomic design?
- Y N N/A: Command has a formal Ergonomics Program which annually reviews ergo-related injuries and seeks to eliminate the potential for ergonomically-related discomfort/strain or injury?

Comments:

It is generally known that ergonomic interventions have a broader impact to healthful working environment of personnel. Ergonomic programs improve safety; diminish stress and fatigue, increase job satisfaction, reduction of absenteeism and worker turnovers and medical cost while improving the work production quality, efficiency and increased labor output. This corollary benefits can turn a positive gain in return of investments and improving worker morale.

A good website, DENIX- DoD Environment, Safety and Occupational Health Network and Information Exchange, has many good resources to include an Ergonomics Newsletter, Ergonomics Fact Sheets and Ergonomics Posters. Information ranges from adequate administrative work stations, material/heavy lifting and various specific industrial/maintenance operations. Access to the DENIX website is found at: <http://www.denix.osd.mil/ergoworkinggroup/>

Enterprise Safety Application Management System (ESAMS) is an interactive program to enable personnel to channel occupational health and safety concerns. The Base Safety Manager and supervisors have direct access to these reports, comments and recommendations. With this information and gained knowledge, corrective measures can be expediently implemented. All base employees are account holders to access this program.

Reference: OPNAVINST 5100.23G Chapter 23, Navy Safety & Occupational Health (SOH) Program Manual; NAVMC Directive 5100.8 MARCOR OSH Program Manual Chapter 19 Ergonomics Program

Extensive computer use and other sedentary clerical work can create ergonomic stress due to awkward and stationary position, repetition and stress contact with sharp and hard edges against arm sensitive tissues. Chronic exposure not corrected over time will cause musculoskeletal stress injuries and affect sensory nerves. The command should take a concerted effort to minimize this risk by implementing the Ergonomic Program with serious attention. Refer ergonomic issues to the local Safety Office for assistance.

Recommendation: Ergonomically designed office furnishing must be incorporated in the worker computer station. The proper design and adjustability of this workstation is a crucial means in preventing occupational musculoskeletal stress injuries. The adjustments can allow the workers to suitable neutral position with proper back support and comfortable posture. Provide ergonomics training to command personnel and maintain documentation upon receiving the training.

SAFETY AND OCCUPATIONAL HEALTH PROGRAM MANAGEMENT ASSESSMENT

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JULY 2017

Respiratory Protection Program (RPP):

- Y N N/A: Are respirators required/used to control workplace exposures?
 Y N N/A: Are humanitarian use respirators used by work center personnel?
 Y N N/A: Is an up-to-date Respirator SOP available in the workplace?
 Y N N/A: Is the work center/command RPP effective*?

**An RPP is judged by IH to be effective if personnel utilize respirators correctly for operations that require them.*

Comments: If applicable, specific respiratory hazards and the types of respirators used are listed in the individual work center hazard assessments found in this report. Be advised that if individuals have been annotated for enrollment in the RPP Medical Surveillance Program by Industrial Hygiene, employees must receive annual RPP Training, fit testing and medical certification.

Structural Fire and Rescue Services Division and Aircraft Rescue and Firefighting Grade D breathing air certificates are up to date. The mobile breathing air compressor acquired from Structural Fire by the ARFF is compliant as well.

Reference (s): OPNAVINST 5100.23G Chapter 15 Respiratory Protection; NAVMC Directive 5100.8 MARCOR OSH Program Manual Chapter 13 Personal Protective Equipment; 29 CFR 1910.134

SAFETY AND OCCUPATIONAL HEALTH PROGRAM MANAGEMENT ASSESSMENT

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Other Applicable Programs:

- Y N N/A: Lead Control
 Y N N/A: Asbestos Control
 Y N N/A: Carcinogens
 Y N N/A: Heat Stress
 Y N N/A: Eye Wash and Shower Station

Comments:

LEAD:

Exposure to Lead. Lead exposure begins as soon as a shooter pulls the trigger of a firearm. . The powder charge explosion generates particulates of lead dust into the air contaminating the shooter's hand, face and clothing. With uncovered lead type projectiles the lead continues to be generated while the projectile travels through the barrel of the weapon. The second source of contaminants is generated when the bullet exit from the muzzle of the weapon. The contaminants contain residue of lead and chemicals from the projectiles and partially burnt powder charge disperse in the shooter's breathing zone.

Inhaled lead particles are immediately absorbed in the blood stream through the lungs. The lead in the blood is then deposited into soft body tissue and bone. Heat from smoking, sweating, or physical activity increases the absorption process. If lead particles reach the mouth, they can be ingested directly into the stomach.

Lead that settled on the skin and hair can be absorbed through the pores of the skin. Exposure increases when it is time for the individual to do range clean-up, because handling empty casings can result in lead being deposited to the skin, or to clothing and other garments from where it will eventually enters its way into the body. The actual cleaning processes for the weapon also removes much of the remaining lead in the barrel and lead particulates from other parts of the weapon and transfers it to the cleaner's hands. Oils and solvents used to clean and lubricate weapons can cause the natural oil in the skin to evaporate, leaving dry skin and open pores through which the lead can easily enter the body.

Precautions on the Firing Range.

Smoking should be prohibited to prevent inhalation of lead deposited in hands or ingestion of lead from hand to mouth.

Eating should not be allowed in the pistol range. Lead dust on hands and face can be ingested through contact with food. Airborne lead expelled from the weapon can also contaminate food.

Wash hands and face before returning to work or going home to avoid take home contaminants.

Reducing Firing Range Lead Contamination

Follow the MCAS Beaufort Pistol Range Operations Environmental Standard Operating Procedures (ESOP).

The reduction of lead exposure should be augmented with preferable work practices and applicable administrative controls as mentioned.

Eye eyewash station is to be inspected weekly and documented in a maintenance log. The eyewash station must have an unfettered access at all times in case of emergencies.

INDIVIDUAL HAZARD ASSESSMENT		DATE: 20 JUN 2017		
RECORDED BY: E. L. RANCHES	INSTALLATION: MARINE CORPS AIR STATION	SUPERVISOR: CWO HENSLEY		
BUILDING NUMBER: 1313	SHOP NAME: MCAS AIRCRAFT RESCUE AND FIREFIGHTING	PHONE: 228-7391		
IH TYPE/DATE 1 YEAR DOEHRs CATEGORY 1		TOTAL PERSONNEL: 72 GS: 0 CONTR: 0		
		MALE: MIL: 70 GS: 0 CONTR: 0		
		FEMALE: MIL 2 GS 0 CONTR: 0		
<p>SHOP OPERATIONS: Personnel provide emergency medical and fire and rescue to base and can provide assistance to other commands or the local community. Hazardous materials may be used and hazardous wastes may be generated such as Aqueous Film Forming Foam (AFFF) and dry chemical fire suppressing agent (Halotron). Responsibilities include firefighting and mishap area environmental control and clean up in connection to aircraft mishap. Assist in preserving the crash site for investigation. Conducts weekly fire drill in bulky and heavy fire resistant gears often in an active fight line. Assists the Structural Fire Department in any structural fire and CBRNE incidents as well as rendering emergency services. No change from previous survey.</p>				
PROCESS/OPERATIONS AND STRESSOR/HAZARD	DURATION/FREQUENCY OF EXPOSURE	ESTIMATED NUMBER OF WORKERS	CONTROLS (1)	EXPOSURE ASSESSMENT (2)
<p>Preventive Maintenance Operations.</p> <p>Maintenance inspection and functionality check on firefighting and rescue equipment. Check lifesaving equipment with various fuels and batteries in weekly checks, most equipment is noise hazardous. Also check vehicles and utilize open bays or vehicle exhaust ducts. Equipment receives period servicing with light oils, greases, lubricants, etc.</p> <p>1. Aircraft noise during flight line operations are estimated to be at 85 to 104 dB which requires double hearing protection (≥ 104 dB(A)). Inside enclosed buildings, noise is well-controlled and evaluated to be below the occupational exposure limit.</p> <p><u>At runway 05 and 23 SLM during flight operations:</u></p> <p>2010 Noise Dosimetry results (Navy Occupational Exposure Level (NOEL) is 85 dB(A). IH10-0797 89.2 dB(A) IH10-0796 81.5 dB(A) IH10-0795 86.0 dB(A)</p> <p>2. Maintenance of firefighting vehicles and rescue equipment.</p> <p>Testing and maintenance of rescue and auxiliary power equipment.</p> <p>1. Noise. 2. Dynamic Posture. 3. Particulates Not Otherwise Specified 4. Heat Stress.</p>	30-60 minutes/day.	72	<p>USED/REQUIRED:</p> <p>PPE: Single Hearing Protection (Plugs OR Muffs) is required when noise levels are 85-103 dB(A).</p> <p>Double Hearing Protection (Plugs and muffs) is required when noise levels are at or above 104 dB(A).</p> <p>Nitrile Gloves.</p> <p>ADMIN: Work/Rest cycle, Ergonomics, General Awareness, Heat Cold Stress Training, Gases, Vapors, Fumes, Dusts and Mists (29 CFR 1926).</p> <p>ENG: LEV, Natural Ventilation.</p>	<p>1. Unacceptable. Based on DOEHRs Fire and Rescue Services SEG 95 percentile 99.2 dBA TWA.</p> <p>Workers are potentially exposed to hazardous noise depending on the particular job and their proximity to noise generating equipment.</p> <p>Ensure that workers fully participate in the HCP which includes annual HCP training; annual audiograms; labeling of noise hazardous equipment and areas; and the use of appropriate hearing</p> <p><u>Noise is listed in NMCPHC-TM-OEM 6260.01C April 2010 as a Reproductive Hazard.</u></p> <p>2. Acceptable. Based on short duration, frequency and DOEHRs Fire and Rescue Services SEG qualitative assessment. Work practice and irregularity of work minimize the potential for possible injury risk.</p> <p>3. Acceptable. Based on short duration and frequency, and DOEHRs Fire and Rescue Services SEG qualitative assessment.</p> <p>4. Acceptable. Based on short duration and frequency, and DOEHRs Fire and Rescue Services SEG qualitative assessment.</p> <p>Individuals are trained on self-diagnosis (signs, symptoms and treatment) of heat stress injuries. Self-rescue is emphasized when in distress during rescue and firefighting situation.</p>

<p>Protective Services -Fire.</p> <p>Primary responder to oil spills during aviation mishap/fires.</p> <p>Aircraft Rescue and Firefighting (ARFF) would be the first responder on scene for HAZMAT Spill and aircraft mishap incidence. Determines when it is "safe" for other personnel to enter the disaster zone.</p> <p>When in distress area worker are attentive about the situational risk updating the on-scene leaders constantly. Team leaders monitor the work duration and physical intensity during emergency response to avert any heat casualty.</p> <p>Depending on the situation, personnel have physical strain when deploying hoses and firefighting equipment.</p> <p><u>Extraction:</u> Personnel may have to lift bodies or removing those using awkward positions or performing heavy lifting (deploying hoses).</p> <p><u>Wet hoses</u> (30-50 pounds) to lift and dry them (<10-25 min/day, as needed)</p> <p><u>Full Proximity Gear</u> (65 pounds) Training in full gear is weekly. Air Pak is included with the proximity gear.</p> <p>Awkward body position and exertion during manual replenishing of AFFF into the fire truck.</p> <p>The Aqueous Firefighting Film Foam (AFFF). AFFF is manually poured to the reservoir when the fire truck is put in ready service after a scheduled maintenance. Aircraft Firefighting trucks contains 130 gallons of AFFF.</p> <p>Halon 1211) Firefighting media for common combustibles, flammable liquids and electrical fires.</p> <p>Each truck (6) carries at least 54 lbs. of this media.</p> <p>Potassium Bicarbonate (PKP) is used for electrical and flammable liquid fire.</p>	<p>Crash Fire and Rescue Services duty crew stands a 24 hour watch.</p> <p>Special occasions. 2-4 hours.</p>	<p>72</p> <p>There are 6 EMT in the shop.</p>	<p>USED/REQUIRED:</p> <p>PPE:</p> <p>1. Full Proximity Gear, Self-Contained Breathing Apparatus (SCBA), Full/ Half face respirators with HEPA filters/Organic Vapor filters. P APR is for CBRNE decontamination.</p> <p>ENG: LEV, Natural Ventilation.</p> <p>2. Heat/Cold Stress training, physical conditioning, Hydration, Buddy System (2 in 2 out)</p> <p>ADM: Work practices, SOP and Fire Fighting Response Training, Environmental Standard Operating Procedures (ESOP).</p> <p>3. ADM: Procedural (Universal precaution),</p> <p>5, 6, and 7. PPE: Goggles and nitrile gloves, Full Proximity Gear when responding to aircraft in distress.</p>	<p>1. Acceptable. Based on short duration and frequency, no defined OEL, and DOEHS Fire and Rescue Services SEG qualitative assessment.</p> <p>Wax can be applied to crash site if needed to prevent debris for being airborne.</p> <p>2. Acceptable. Based on short duration and frequency, no defined OEL, and Fire and Rescue Services SEG qualitative assessment.</p> <p>Individuals are trained on self-diagnosis (signs, symptoms and treatment) of heat stress injuries. Self-rescue is emphasized when in distress during rescue and firefighting situation.</p> <p>An on scene cooling station (Ice and high velocity fan) is positioned within the response area for heat stress prevention.</p> <p><u>Heat Stress is listed in NMCPHC-TM-OEM 6260.01C April 2010 as a Reproductive Hazard.</u></p> <p>3. Acceptable. Based on short duration and frequency, no defined OEL, and Fire and Rescue Services SEG qualitative assessment.</p> <p>Workers in a position of a job with potential exposure to blood and body fluids and other hazardous infectious materials. Structural Fire Division is designated as first responders for medical emergencies.</p> <p>The statutory regulations recommend enrolment in the medical surveillance program due to potentially untoward effects as the result of exposure to blood and body fluids when providing emergency treatment on patients.</p>
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<p>1. Particulates Not Otherwise Specified. 2. Heat Stress. 3. Blood Borne Pathogen. 4. Dynamic Posture 5. Incidental Chemical Splash</p>				<p>4. Acceptable. Based on short duration and frequency, no defined OEL, and Fire and Rescue Services SEG qualitative assessment.</p> <p>No stress or strain related reported in this shop. Personnel are encouraged to engage in physical fitness training and strength conditioning. Forceful exertion can stress soft tissue beyond their capacities and can cause fatigue and possible damage.</p> <p><u>Reproductive Hazard:</u> Heavy Lifting (Developmental) - for over 25 pounds.</p> <p>Workers have the liberty to arrange office work assignments and able to take mini breaks.</p> <p>Enterprise Safety Application Management System (ESAMS) is an interactive program to enable personnel to channel occupational health and safety concerns. The Base Safety Manager and supervisors have a direct access to these reports, comments and recommendations.</p> <p>With this information and gained knowledge, corrective measures can be expediently implemented. All base employees are account holder accessing this program.</p> <p>5. Acceptable. Based on short duration and frequency, no defined OEL, and Fire and Rescue Services SEG qualitative assessment.</p> <p>Limited and incidental exposure during firefighting responses.</p>
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<p>Administrative Operations. Office environment (computers and keyboarding) comprise the majority of work evolutions. Personnel have task variety (keyboarding, filing, phone, oversight activities, etc.) No worker performs dedicated data entry operations. The only heavy lifting operations performed are rare supply operations with the heaviest item moved a box of copy paper (~40 lbs.) When new computer equipment is installed or delivered, workers utilize carts to transport such equipment.</p> <p>1. Static Posture</p>	<p>1-2 hours. Daily.</p>	<p>72</p>	<p>USED/REQUIRED:</p> <p>ADM: Ergonomics Awareness Training.</p> <p>ADM: Ergo Training, Task Variety, Breaks.</p> <p>ENG: Carts, Hand trucks, Ergo Chairs, Workstations</p>	<p>Acceptable. Based on short duration and frequency, no defined OEL, and Fire and Rescue Services SEG qualitative assessment.</p> <p>Limited duration and intensity of work diminish the potential risk of injury.</p> <p>Heavy (lifting over 25 pounds) and prolonged standing are listed in NMCPHC-TM-OEM 6260.01C April 2010 as developmental Reproductive Hazards.</p> <p>The clerical work is not production driven to intensive keyboarding involvement.</p>
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1. **USE THE FOLLOWING CONTROL CODES:**
ADM - ADMINISTRATIVE CONTROLS PPE - PERSONAL PROTECTIVE EQUIPMENT ISO - ISOLATION DV - DILUTION
VENTILATION ENG - ENGINEERING CONTROLS LV - LOCAL VENTILATION

2. **USE THE FOLLOWING EXPOSURE CODES:**
ACCEPTABLE - ONE WHERE THE IH WILL NOT EXPECT THE SEG, ON AVERAGE, TO BE EXPOSED ABOVE THE SELECTED OEL.
UNCERTAIN - ADDITIONAL DATA NEED TO BE COLLECTED TO CLARIFY THE EXPOSURE ASSESSMENT. THE IH SHOULD MAKE AN INTERIM EXPOSURE ASSESSMENT BASED ON OBSERVATION OF THE PROCESS AND/OR PROFESSIONAL JUDGMENT.
UNACCEPTABLE - ONE WHERE THE IH WILL EXPECT THE SEG, ON AVERAGE, TO BE EXPOSED ABOVE THE SELECTED OEL.
SKIN - THE MATERIAL POSES A SKIN ABSORPTION HAZARD
REPRODUCTIVE HAZARD - THE MATERIAL IS A NAVY-RECOGNIZED REPRODUCTIVE HAZARD
CARCINOGEN - THE MATERIAL CONTAINS > 0.1% OF AN OSHA, ACGIH, IARC, OR NTP-RECOGNIZED CARCINOGEN

WORK SHOP MEDICAL SURVEILLANCE SUMMARY

WORK OPERATION/TASK	RECOMMENDED MEDICAL PROGRAM	MEDICAL PROGRAM NUMBER	ESTIMATED NUMBER OF WORKERS
Protective Services-Fire	Firefighter Medical Surveillance Program	707	72
Protective Services-Fire	Respiratory Protection Program	716	72
Protective Services-Fire	Blood and/or Body Fluids Medical Surveillance Program	178	72
Protective Services-Fire	Hearing Conservation Program	503	72

INDIVIDUAL HAZARD ASSESSMENT		DATE: 23 JUN 2017		
RECORDED BY: E. L. RANCHES INSTALLATION: MARINE CORPS AIR STATION BUILDING NUMBER: 1129/596 SHOP NAME: MCAS PISTOL RANGE IH TYPE/DATE 1 YEAR DOEHS CATEGORY 1		SUPERVISOR: GYSGT SOLUM PHONE: 228-7391 TOTAL PERSONNEL: 8 GS: 0 CONTR: 0 MALE: MIL: 5 GS: 2 CONTR: 0 FEMALE:MIL 0 GS 1 CONTR: 0		
SHOP OPERATIONS: Personnel maintain the pistol range and are assigned as shooting coaches during familiarization and qualification firing. The pistol range is also open one day per week for recreational firing to authorized civilian and military patrons. A Hospital Corpsman is assigned for medical standby duty. No change from previous survey.				
PROCESS/OPERATIONS AND STRESSOR/HAZARD	DURATION/ FREQUENCY OF EXPOSURE	ESTIMATED NUMBER OF WORKERS	CONTROLS (1)	EXPOSURE ASSESSMENT (2)
Weapons and Ordnance. MARKSMANSHIP TRAINING AND WEAPONS QUALIFICATION. Weapons and Ordnance (Partially Enclosed) Coaching shooters during Familiarization/Qualification training. For familiarization firing, the facility runs a regular four position relay accommodating at least 11 shooters per relay. Each firing evolution takes approximately five hours. There are instances that the range will run an additional relay to accommodate shooters from outside commands. Eighty rounds of 9mm full metal jacketed ball ammunition are issued to each military shooter for a day shoot. Additional ammo is issued if the shooter decided to qualify on the same shooting day. FA-18/F-35 aircraft noise during fly-overs on the pistol range are estimated to require double hearing protection (>104 dB(A)). Inside of admin building, noise is well-controlled and evaluated to be non-hazardous.	4-6 hrs/day, 3x/week.	4	USED: 1. PPE: Double Hearing Protection (Plugs and muff) is required when noise levels are at or above 104 dB(A), Safety Glasses. 2. Ergonomics, General Awareness Training. 3. Heat/Cold Stress Training. ENG: DV (High Velocity Floor Fans). ADM: Hand Washing.	1. Unacceptable. Based on DOEHS Weapons and Ordnance (Partially Enclosed Range) SEG 95 percentile 89.2 dBA TWA. MCO 6260.3A has placed all active duty Marines in <u>Hearing Conservation Program.</u> Ensure that workers fully participate in the HCP which includes annual HCP training; annual audiograms; labeling of noise hazardous equipment and areas; and the use of appropriate hearing protective devices when anticipating hazardous noise exposure. <u>Noise is listed in NMCPHC-TM-OEM 6260.01C April 2010 as a Reproductive Hazard.</u> 2. Acceptable. Based on short duration and frequency, no defined OEL, and Weapons and Ordnance (Partially Enclosed Range) SEG qualitative assessment. Recommendation: See Lead Comments in Other Applicable Programs of Safety and Occupational Health Program Management Assessment. Lead is listed in NMCPHC-TM-OEM 6260.01C April 2010 as a Reproductive Hazard.

<p>Sound Level Meter Readings at the flight line: 103.2 dB(A)/ Inside Office: 70.8 dB(A)</p> <p>The pistol range is an open but partially enclosed facility located approximately one quarter mile from the flight line and is in the path of FA-18/F-35 aircraft performing "touch and go " flight operations.</p> <p>Incidental exposure during extreme temperatures while on the firing line.</p> <p>Five permanent party personnel are assigned (three firing line coaches and two control booth operators).</p> <p>2014 Lead Monitoring Results during weapons firing evolutions at the MCAS Pistol Range.</p> <p>IH14-0266 0.0625 mg.m3 IH14-0267 0.0598 mg.m3 IH14-0296 0.031 mg.m3 IH14-0297 0.023 mg.m3 IH14-0298 0.03 mg.m3 IH14-0299 0.042 mg.m3 IH14-0302 0.031 mg.m3 IH14-0303 0.023 mg.m3 IH14-0304 0.03 mg.m3 IH14-0305 0.042 mg.m3 IH14-0308 0.062 mg.m3 IH14-0309 0.053 mg.m3 IH14-0310 0.099 mg.m3</p> <p>OSHA PEL-TWA-0.05 mg/m3, ACGIH TLV-0.05 mg/m3 OSHA MSAL- 0.03 mg/m3</p> <p>There are 10 personnel assigned to a relay. It will take 4 relay to complete the day firing evolution (takes 30-45 minutes per relay). Each shooter is issued 80 rounds of fully jacketed ammunition.</p> <p>Range personnel conduct regular housekeeping of firing stalls on Thursdays. Broom sweeping of the shooting area is conducted in between relays and after each training evolution. Hydro power washing of the lanes is conducted every three months.</p> <ol style="list-style-type: none"> 1. Noise. 2. Dynamic Posture. 3. Heat /Cold Stress. 4 Lead. 	<p>4-6 hrs/day, 3x/week.</p>	<p>4</p>	<p><u>Recommendation:</u> See Lead Comments in Other Applicable Programs of Safety and Occupational Health Program Management Assessment.</p>	<p>No reports of discomfort have been reported.</p> <p>Personnel are able to take breaks as needed.</p> <p>3. Acceptable. Based on short duration and frequency, no defined OEL, and Weapons and Ordnance (Partially Enclosed Range) SEG qualitative assessment.</p> <p><u>Heat Stress is listed in NMCPHC-TM-OEM 6260.01C April 2010 as a Reproductive Hazard</u></p> <p>4. Unacceptable. Based on DOEHS Weapons and Ordnance (Partially Enclosed Range) SEG 95 percentile 0.0468 mg/m3 TWA.</p> <p>2014 Pistol Range Lead Exposure Statistics implied an 85.6% above the Medical Surveillance Action Level (MSAL) and 50% exceedance of Permissible Exposure Limit (PEL).</p> <p><u>Lead is listed in NMCPHC-TM-OEM 6260.01C April 2010 as a Reproductive Hazard.</u></p>
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<p>Administrative Operations Bldg. 596.</p> <p>Computer, VDT and keyboard use for administrative work.</p> <p>The clerical work is not production driven to intensive keyboarding involvement.</p> <p>1. Repetitive motion. 2. Static posture.</p>	<p>1-2 hours. Daily.</p>	<p>3</p>	<p>Ergonomics Awareness Training.</p>	<p>1 and 2. Acceptable. Based on short duration and frequency, no defined OEL, and Weapons and Ordnance (Partially Enclosed Range) SEG qualitative assessment.</p> <p>No reported injury during this reporting period.</p> <p>Limited duration and intensity of work diminish the potential risk of injury.</p>
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1. USE THE FOLLOWING CONTROL CODES:
ADM - ADMINISTRATIVE CONTROLS **PPE** - PERSONAL PROTECTIVE EQUIPMENT **ISO** - ISOLATION **DV** - DILUTION
VENTILATION **ENG** - ENGINEERING CONTROLS **LV** - LOCAL VENTILATION

2. USE THE FOLLOWING EXPOSURE CODES:
ACCEPTABLE - ONE WHERE THE IH WILL NOT EXPECT THE SEG, ON AVERAGE, TO BE EXPOSED ABOVE THE SELECTED OEL.
UNCERTAIN - ADDITIONAL DATA NEED TO BE COLLECTED TO CLARIFY THE EXPOSURE ASSESSMENT. THE IH SHOULD MAKE AN INTERIM EXPOSURE ASSESSMENT BASED ON OBSERVATION OF THE PROCESS AND/OR PROFESSIONAL JUDGMENT.
UNACCEPTABLE - ONE WHERE THE IH WILL EXPECT THE SEG, ON AVERAGE, TO BE EXPOSED ABOVE THE SELECTED OEL.
SKIN - THE MATERIAL POSES A SKIN ABSORPTION HAZARD
REPRODUCTIVE HAZARD - THE MATERIAL IS A NAVY-RECOGNIZED REPRODUCTIVE HAZARD
CARCINOGEN - THE MATERIAL CONTAINS > 0.1% OF AN OSHA, ACGIH, IARC, OR NTP-RECOGNIZED CARCINOGEN

WORK SHOP MEDICAL SURVEILLANCE SUMMARY			
WORK OPERATION/TASK	RECOMMENDED MEDICAL PROGRAM	MEDICAL PROGRAM NUMBER	ESTIMATED NUMBER OF WORKERS
Weapons and Ordnance	Lead Medical Surveillance Program	716	4
Weapons and Ordnance	Hearing Conservation Program	503	4

INDIVIDUAL HAZARD ASSESSMENT		DATE: 23 JUN 2017		
RECORDED BY: E. L. RANCHES	SUPERVISOR: FIRE CHIEF VAUGHN	PHONE: 228-7293		
INSTALLATION: MARINE CORPS AIR STATION	TOTAL PERSONNEL: 37 GS: 37 CONTR: 0	MALE: MIL: 00 GS: 37 CONTR: 0		
BUILDING NUMBER: BLDG 2085/1513 (LAUREL BAY)	FEMALE: MIL 00 GS 0 CONTR: 0			
SHOP NAME: MCAS STRUCTURAL FIRE/LB				
IH TYPE/DATE 1 YEAR DOEHS CATEGORY 1				
<p>SHOP OPERATIONS: Personnel are responsible for fire prevention, structural fire hazard inspection and fire suppression on any conflagration on base. First responder for any first aid, emergency rescue base wide as well as HAZMAT AND CBRNE incidents. Assist the Crash, Fire and Rescue Services on any aviation related emergencies. Personnel conduct regularly schedules drills on flight line and other base sites. Routine maintenance on fire trucks and other powered rescue equipment are assigned to base motor pool. Operational checks for this equipment are conducted daily. The shop maintains a stationary and mobile breathing air compressor. No change in the shop operation.</p>				
PROCESS/OPERATIONS AND SIRESSOR/HAZARD	DURATION/FREQUENCY OF EXPOSURE	ESTIMATED NUMBER OF WORKERS	CONTROLS (1)	EXPOSURE ASSESSMENT (2)
<p>Preventive Maintenance Operations.</p> <p>Testing of fixed, life safety equipment and vehicles to insure proper operation with a variety of fuels and batteries. Most equipment is noise hazardous and vehicles are tested in an open bay or with attached vehicle exhaust.</p> <p>The facility is located in proximity to a flight deck of two squadrons and is in aviation corridor of flight operations.</p> <p>FA-18/F-35 aircraft noise during fly-over are to require double hearing protection when anticipating exposure to noise at >104 dB(A)). Inside the building, noise is below the PEL.</p> <p>Sound level readings of flight line noise during flight operations.</p> <p><u>At runway 05 and 23 outdoors during active FA-18 flight operations:</u></p> <p>Visiting aircraft line on flight line: 103.2 dB(A)/ Inside Office: 70.8 dB(A).</p>	<p>1 Hours a day.</p> <p>2 times a week (Training with ARFF) may last up to 4 hours.</p> <p>Daily equipment check normally last for 30 minutes.</p>	37	<p>USED/REQUIRED:</p> <p>PPE: Ear plug.</p> <p>Recommend wearing double hearing protection when anticipating aircraft fly over during routine flight operations</p> <p>PPE: Gloves, Goggles.</p> <p>ADM: Gases, Vapors, Fumes, Dusts and Mists (29 CFR 1926).</p>	<p>1. Unacceptable. Based on DOEHS Fire and Rescue Services 95th percentile 99.2 dBA TWA.</p> <p>Daily operational check of firefighting equipment that generate noise level above the NOEL. Regular training is conducted with base ARFF near the flight line where noise level is above the 85 dB(A).</p> <p><u>Noise is listed in NMCPHC-TM-OEM 6260.01C April 2010 as a Reproductive Hazard.</u></p> <p>2. Acceptable. Based on short duration and frequency, no defined OEL, and Fire and Rescue Services SEG qualitative assessment.</p> <p>3. Acceptable. Based on short duration and frequency, no defined OEL, and Fire and Rescue Services SEG qualitative assessment.</p>

<p>The 2015 VMFAT 501 Noise Dosimetry Statistics indicate 86.2 % above the Occupational Exposure Limit. The minimum exposure is 78 dBA and the maximum is 109 dBA.</p> <p>Noise Dosimetry (Occupational Exposure Limit (OEL) is 85 dB(A) TWA).</p> <ol style="list-style-type: none"> 1. Noise. 2. Incidental Chemical Splash 3. Particulates Not Otherwise Specified. 				
<p>Administrative Operations.</p> <p>Used for documentation, training Administrative Operations: Office environment (computers and keyboarding) comprise the majority of work evolutions. Personnel have task variety (keyboarding, filing, phone, oversight activities, etc.) No worker performs dedicated data entry operations. The only heavy lifting operations performed are rare supply operations with the heaviest item moved a box of copy paper (~40 lbs.) When new computer equipment is installed or delivered, workers utilize carts to transport such equipment.</p> <ol style="list-style-type: none"> 1. Static Posture. 2. Work Rate/Repetition. 	<p>2-4 hours. Daily.</p>	<p>37</p>	<p>USED/REQUIRED: ADM: Ergonomics Awareness Training.</p>	<p>1 and 2. Acceptable. Based on short duration and frequency, no defined OEL, and Fire and Rescue Services SEG qualitative assessment.</p> <p>No reported injury during this reporting period.</p> <p>Heavy (lifting over 25 pounds) and prolonged standing are listed in NMCPHC-TM-OEM 6260.01C April 2010 as developmental Reproductive Hazards.</p> <p>The clerical work is not production driven to intensive keyboarding involvement.</p>
<p>Protective Services-Firefighting and Emergency Response.</p> <p>First responder to all structural fires and emergency rescue. Assist the ARFF during aviation mishap and fires. Emergency responder in case of chemical and oil spills.</p> <p>Depending on the situation, personnel are in dynamic and awkward postures during training and actual rescue and firefighting.</p>	<p>As needed. 1 Hour a day. 2 times a week (Training with ARFF) Sometimes last up to 4 hours. (6 are Paramedics)</p>	<p>37</p>	<p>USED/REQUIRED: PPE: Leather gloves. PPE: Self-contained breathing apparatus (Encapsulated Responder Plus). ADM: Procedural (Universal precaution), Nitrile gloves, safety glasses.</p>	<p>1. Acceptable. Based on short duration and frequency, no defined OEL, and Fire and Rescue Services SEG qualitative assessment.</p>

<p><u>Extraction:</u> Personnel may have to lift persons or move patients to a safe area.</p> <p><u>Wet hoses</u> (30-50 pounds) to lift and dry them (<10-25 min/day, as needed)</p> <p><u>Full Bunker Gear</u> (75-100 pounds). 1 Hour a day. 1x/week) with Aircraft Rescue and Firefighting.</p> <p>Rescue Equipment: Saws, fire bottles (SCBA's) and other devices (20-50 pounds) (<5 min/day) as needed or during training Use sparingly when putting off small brush fires during controlled burn.</p> <ol style="list-style-type: none"> 1. Incidental Chemical Splash 2. Particulates Not Otherwise Specified. 3. Blood Borne Pathogen. 4. Dynamic Posture/Forceful Exertion. 5. Heat Stress. 6. Noise 			<p>ADM: Ergonomics Awareness Training, Work practices and 2-man-lifts, Practice Skills and Routine Training, Mandatory Fitness Program.</p> <p>Employ team lifting if necessary.</p> <p>ADM: Procedural, hydration and annual heat stress training.</p> <p>PPE: Ice pack cooling vest is used for extended period of firefighting or training; Buddy System.</p>	<p>2. Acceptable: Based on short duration and frequency, no defined OEL, and Fire and Rescue Services SEG qualitative assessment.</p> <p>3. Acceptable. Based on short duration and frequency, no defined OEL, and Fire and Rescue Services Service SEG qualitative assessment.</p> <p>The statutory regulations recommend enrolment in the medical surveillance program due to potentially untoward effects as the result of exposure to blood and body fluids when providing emergency treatment of patients.</p> <p>4. Acceptable. Based on short duration and frequency, no defined OEL, and Fire and Rescue Services SEG qualitative assessment.</p> <p>Proper techniques & rest cycles are effective. Annual Ergo Awareness Training.</p> <p><u>Reproductive Hazard:</u> Heavy Lifting (Developmental) - for lifts over 25 pounds.</p> <p>Enterprise Safety Application Management System (ESAMS) is an interactive program to enable personnel to channel occupational health and safety concerns. The Base Safety Manager and supervisors have a direct access to these reports, comments and recommendations. With this information and gained knowledge, corrective measures can be expediently implemented. All base employees are account holder to access this program.</p> <p>5. Acceptable. Based on short duration and frequency, no defined OEL, and Fire and Rescue Services SEG qualitative assessment.</p> <p>Risk awareness and heat Injury prevention training is conducted annually which includes curriculum such as recognition, type, treatment and prevention of heat related injury.</p> <p><u>Heat Stress is listed in NMCPHC-TM-OEM 6260.01C April 2010 as a Reproductive Hazard.</u></p> <p>6 Unacceptable. Based on DOEHS Fire and Rescue Services 95th percentile 99.2 dBA TWA.</p>
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1. USE THE FOLLOWING CONTROL CODES:
ADM - ADMINISTRATIVE CONTROLS **PPE** - PERSONAL PROTECTIVE EQUIPMENT **ISO** - ISOLATION **DV** - DILUTION
 VENTILATION **ENG** - ENGINEERING CONTROLS **LV** - LOCAL VENTILATION

2. USE THE FOLLOWING EXPOSURE CODES:
ACCEPTABLE - ONE WHERE THE IH WILL NOT EXPECT THE SEG, ON AVERAGE, TO BE EXPOSED ABOVE THE SELECTED OEL.
UNCERTAIN - ADDITIONAL DATA NEED TO BE COLLECTED TO CLARIFY THE EXPOSURE ASSESSMENT. THE IH SHOULD MAKE AN INTERIM EXPOSURE ASSESSMENT BASED ON OBSERVATION OF THE PROCESS AND/OR PROFESSIONAL JUDGMENT.
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REPRODUCTIVE HAZARD - THE MATERIAL IS A NAVY-RECOGNIZED REPRODUCTIVE HAZARD
CARCINOGEN - THE MATERIAL CONTAINS > 0.1% OF AN OSHA, ACGIH, IARC, OR NTP-RECOGNIZED CARCINOGEN

WORK SHOP MEDICAL SURVEILLANCE SUMMARY

WORK OPERATION/TASK	RECOMMENDED MEDICAL PROGRAM	MEDICAL PROGRAM NUMBER	ESTIMATED NUMBER OF WORKERS
Protective Services-Fire	Firefighter Medical Surveillance Program	707	37
Protective Services-Fire	Respiratory Protection Program	716	37
Protective Services-Fire/Emergency Response	Blood and/or Body Fluids Medical Surveillance Program	178	37
Protective Services-Fire	Hearing Conservation Program	503	37

**MCAS BEAUFORT SC
2017 WORKPLACE MONIORING PLAN**

Work Center	Operation to be sampled	Type	Vent Description	Hazard/Stressor	# Samples	Method	Location of Sample	Frequency
MCAS PISTOL RANGE	WEAPONS FIRING			LEAD	3	PERSONAL AIR SAMPLING	BZ	QUARTERLY
MCAS AIRCRAFT RESCUE AND FIREFIGHTING	VENTILATION: Local Exhaust Hood	VENT	DEDICATED	DIESEL SMOKE/CARBON MONOXIDE	As needed	DIRECT READING/ SMOKE	LEV- Local Exhaust Ventilation	ANNUAL
MCAS STRUCTURAL FIRE AND RESCUE SERVICES DIVISION	VENTILATION: Local Exhaust Hood	VENT	DEDICATED	DIESEL SMOKE/CARBON MONOXIDE	As needed	DIRECT READING/ SMOKE	LEV- Local Exhaust Ventilation	ANNUAL

The purpose of workplace monitoring plan is to identify the potential exposure to physical and chemical hazards. Exposure monitoring is crucial in determining the appropriate medical surveillance program, selecting the suitable personal protective equipment and enforcement of hazardous communication training for personnel.

It is therefore compelling that when these hazardous occupational operations occur to contact Industrial Hygiene a day in advance so that sampling equipment and responsible personnel are available for the data collection. NEHC TM 6290.91-2 REV. B, Mar 99 will be used as statistical protocol to establish the worker exposure profile.

**MCAS BEAUFORT, SC
2017 SHOP SUMMARY OF MEDICAL SURVEILLANCE TABLE**

WORK CENTER	WORK OPERATION/TASKS	RECOMMENDED MEDICAL SURVEILLANCE PROGRAM	MEDICAL PROGRAM NUMBER	ESTIMATED NUMBER OF PERSONNEL
MCAS Aircraft Rescue and Firefighting (ARFF)		Blood and/or Body Fluids	178	72
MCAS ARFF	MMVF/HAZMAT: Aircraft salvage and rescue	Respiratory Protection Program	716	72
MCAS ARFF	Noise: Aircraft and vehicle maintenance/Flightline Operations	Hearing Conservation Program	503	72
MCAS ARFF	Aircraft and vehicle maintenance	Firefighter Exam	707	72
MCAS Pistol Range	Weapons Firing	Hearing Conservation Program	503	4
MCAS Pistol Range	Weapons Firing/Cleaning the firing line	Lead Medical Surveillance Program	161	4
MCAS Structural Fire and Rescue Services Division(MCAS and Laurel Bay)	Rescue and Firefighting	Firefighter Exam	707	37
MCAS Structural Fire and Rescue Services Division (MCAS and Laurel Bay)	First Aid and Rescue	Blood and/or Body Fluids	178	37
MCAS Structural Fire and Rescue Services Division (MCAS and Laurel Bay)	Noise: Flightline exposure and equipment maintenance	Hearing Conservation Program	503	37
MCAS Structural Fire and Rescue Services Division (MCAS and Laurel Bay)	Manmade Vitreous Fiber(MVF)/Hazardous Materials (HAZMAT)	Respiratory Protection Program	716	37

NOTE: Explanation of Medical Surveillance/Certification Recommendations.

1. Recommendation for inclusion in a hazard-based medical surveillance program for employees involved in a given operation is based on the industrial hygienist's professional judgment, either through observation or knowledge of the process or representative sampling, that these employees will be routinely exposed to workplace concentrations at or above the Medical Surveillance Action Level (MSAL) established by Navy instruction or Federal regulation. Medical certification is required by specific Navy or Federal directive where a certain degree of physical fitness has been judged as necessary for a component of the job (i.e. respirator use) or the job itself (i.e. firefighters or forklift operators). This approach is to address the prevention of work related injuries and illnesses and maintains a healthy work environment.

2. The potential for reproductive hazards exposure should not be construed as an automatic removal from the job or billet. The Care Provider should consult with Occ. Hlth. and must provide the medical decision appropriate for the working condition of the pregnant service women. OPNAVINST 6000.1C - Navy Guidelines Concerning Pregnancy and Parenthood and NMCPHC Reproductive Hazards Tech Manual - 2010 NMCPHC-TM-OEM 6260.01C April 2010 provide the policy and procedures regarding management of pregnant servicewomen.

**MCAS BEAUFORT SC
2017 Summary of Sample Results**

Sample Number	Bldg/ Room/Shop	Common Process/Method	Stressor	Measured Results	Exposure Criteria	Evaluation
IH17-0222	Bldg. 1129/ Pistol Range	Area Right Side Sample	Lead Qtr #3	0.031 mg/m3	OSHA PEL-TWA- 0.05 mg/m ³ , ACGIH TLV-0.05 mg/m ³ OSHA MSAL- 0.03 mg/m ³	Unacceptable
IH17-0223	Bldg 1129/ Pistol Range	Area Left Side Sample	Lead Qtr #3	0.0185 mg/m3	OSHA PEL-TWA- 0.05 mg/m ³ , ACGIH TLV-0.05 mg/m ³ OSHA MSAL- 0.03 mg/m ³	Acceptable
IH17-0224	Bldg 1129/ Pistol Range	Area Left Side Sample	Lead Qtr #3	0.066 mg/m3	OSHA PEL-TWA- 0.05 mg/m ³ , ACGIH TLV-0.05 mg/m ³ OSHA MSAL- 0.03 mg/m ³	Unacceptable
IH17-0224	Bldg 1129/ Pistol Range	Area Left Side Sample	Lead Qtr #3	0.066 mg/m3	OSHA PEL-TWA- 0.05 mg/m ³ , ACGIH TLV-0.05 mg/m ³ OSHA MSAL- 0.03 mg/m ³	Unacceptable
IH17-0071	Bldg 1129/ Pistol Range	Outside pistol range 9mm qualification	Lead Qtr #2	0.031 mg/m3	OSHA TWA-0.05 mg/m3 MSAL 0.03 mg/m3	Unacceptable
IH17-0072	Bldg 1129/ Pistol Range	Outside pistol range 9mm qualification	Lead Qtr #2	0.0348 mg/m3	OSHA TWA-0.05 mg/m3 MSAL 0.03 mg/m3	Unacceptable
IH17-0073	Bldg 1129/ Pistol Range	Pistol Range Coach Right Side of firing line	Lead Qtr #2	0.0096 mg/m3	OSHA PEL-TWA- 0.05 mg/m ³ , ACGIH TLV-0.05 mg/m ³ OSHA MSAL- 0.03 mg/m ³	Acceptable
IH17-0074	Bldg 1129/ Pistol Range	Pistol Range Coach Left Side of firing line	Lead Qtr #2	0.0072 mg/m3	OSHA PEL-TWA- 0.05 mg/m ³ , ACGIH TLV-0.05 mg/m ³ OSHA MSAL- 0.03 mg/m ³	Acceptable
IH16-0094	Bldg 1129/ Pistol Range	Pistol Range Coach Right Side of firing line	Lead Qtr #1	0.012 mg/m3	OSHA PEL-TWA- 0.05 mg/m ³ , ACGIH TLV-0.05 mg/m ³ OSHA MSAL- 0.03 mg/m ³	Acceptable
IH16-0095	Bldg 1129/ Pistol Range	Pistol Range Coach Left Side of firing line	Lead Qtr #1	0.030 mg/m3	OSHA PEL-TWA- 0.05 mg/m ³ , ACGIH TLV-0.05 mg/m ³ OSHA MSAL- 0.03 mg/m ³	Unacceptable
IH16-0096	Bldg 1129/ Pistol Range	Area Right Side Sample	Lead Qtr #1	0.04 mg/m3	OSHA PEL-TWA- 0.05 mg/m ³ , ACGIH TLV-0.05 mg/m ³ OSHA MSAL- 0.03 mg/m ³	Unacceptable
IH16-0097	Bldg 1129/ Pistol Range	Area Left Side Sample	Lead Qtr #1	0.08 mg/m3	OSHA PEL-TWA- 0.05 mg/m ³ , ACGIH TLV-0.05 mg/m ³ OSHA MSAL- 0.03 mg/m ³	Unacceptable
IH15-0540	2085 / Structural Fire Dept. / Vehicle Bay	Bay 1 Flex Hose # 1	Ventilation	215 CFM	ACGIH VS 85 01 100-200 CFM	Acceptable

MCAS BEAUFORT SC
2017 Summary of Sample Results

Sample Number	Bldg/ Room/Shop	Common Process/Method	Stressor	Measured Results	Exposure Criteria	Evaluation
IH15-0541	2086 / Structural Fire Dept. / Vehicle Bay	Bay 1 Flex Hose # 2	Ventilation	180 CFM	ACGIH VS 85 01 100-200 CFM	Acceptable
IH15-0542	2087 / Structural Fire Dept. / Vehicle Bay	Bay 2 Flex Hose # 3	Ventilation	213CFM	ACGIH VS 85 01 100-200 CFM	Acceptable
IH15-0543	2088 / Structural Fire Dept. / Vehicle Bay	Bay 3 Flex Hose # 4	Ventilation	284 CFM	ACGIH VS 85 01 100-200 CFM	Acceptable
IH15-0544	2089 / Structural Fire Dept. / Vehicle Bay	Bay 4 Flex Hose # 5	Ventilation	268 CFM	ACGIH VS 85 01 100-200 CFM	Acceptable

SUMMARY OF IDENTIFIED CARCINOGENS AT MCAS BEAUFORT SC CATEGORY 1 SHOPS 2017			
Work Centers/Shop	Carcinogen	Process	Organization and Classification Listing.
MCAS PISTOL RANGE	LEAD	Weapons and Ordnance (Partially Enclosed Range)	A1

Exposure assessments for the stressor listed above are included in the Industrial Hygiene Survey report. Carcinogen should be eliminated or substituted with safer products.

Carcinogens are classified by International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), and the American Conference of Governmental Industrial Hygienist (ACGIH). The Federal Occupational Safety and Health Administration also list cancer causing materials.

Classification by Listing Organization:

ACGIH TLV

- A1- Confirmed human carcinogen
- A2- Suspected human carcinogen
- A3- Confirmed animal carcinogen with unknown relevance to humans

NTP

- K- Known to be human carcinogen
- R- Reasonably anticipated to be a human carcinogen

IARC

- Group 1 - Agent or mixture is carcinogenic to humans
- Group 2A- Agent or mixture is probably carcinogenic to humans
- Group 2B- Agent or mixture is possibly carcinogenic to humans

Glossary

Action Level - Usually one-half the PEL or TLV.

Acute - An illness with a sudden onset, or a short-term exposure.

Administrative Control - Limiting exposures by controlling the work schedule.

Ambient - Normal conditions outside a confined or enclosed space.

ANSI - American National Standards Institute, a standard developing group.

Audiogram - A graph or table showing hearing threshold levels by frequency.

Audiometer - Instrument used to measure a person's hearing threshold.

A-Weighted Sound Level - Measured sound level that reflects our ears reduced sensitivity to low frequency sounds. Expressed as dB (A).

Capture Velocity - The velocity of air necessary to capture a contaminant.

Ceiling Limit - An exposure to toxic materials that may never be exceeded.

Chronic - Persistent, prolonged, repeated.

Concentration - Quantity of a substance per unit volume. Examples include: mg/m³- milligrams per cubic meter. For vapors, gases, fumes, or dusts. ppm - parts per million (used for vapors and gases), fibers/cc - fibers per cubic centimeter (used for asbestos)

Confined Space - A space with restricted entry or exit and not designed for routine occupancy but large enough that a person can enter to perform work.

Cumulative Trauma Disorders (CTDs) - Health disorders arising from repeated biomechanical stress. CTD involve damage to the tendons, tendon sheaths, and related bones, muscles, and nerves of the hands, wrists, elbows, shoulders, neck, and back. Disorders include carpal tunnel syndrome, tennis elbow, tendonitis, tenosynovitis, and low back pain.

Decibel-dB - A unit used to express sound pressure levels.

Detector Tube - A glass tube filled with a chemical that produces a color change when contaminated air is drawn through the tube.

Dosimeter - A device for measuring a cumulative exposure to an individual.

Dust - Small particles created during crushing, grinding, or explosion.

Ergonomics - Field concerned with workplace design to reduce fatigue, error, unsafe acts or injuries such as CTD's.

ESAMS- Enterprise Safety Application Management System

Excursion Limit - Temporary exposure in excess of a PEL or TLV.

Frequency - Vibration or cycles per second usually referred to as Hertz (Hz).

Fumes - Small particles (< 1.0 micron in diameter) formed when a vaporized metal solidifies. The vapor often reacts with oxygen to form an oxide.

Gas - Diffuse, formless fluid normally in a gaseous state.

Hazardous Material - A material meeting one or more of the following: (a) flashpoint <200°F, (b) TLV < 1000 ppm for gases and vapors or < 500 mg/m³ for fumes, (c) a single oral dose which will cause 50 percent fatalities to test animals in doses <500 mg per kilogram of test animal weight, (d) strong oxidizing or reducing agent, (e) causes first degree burns to skin or toxic by skin contact, (f) may produce particulates, vapors or gases with one or more of the above characteristics, (g) sensitizing or irritating effects, (h) radioactive, or (i) special characteristics which could cause harm if improperly used or stored.

Hazardous Material Information System (HMIS) - A computer database of MSDS for hazardous materials used throughout the DOD.

High-Efficiency Particulate Air Filter (HEPA) - A filter capable of trapping and retaining at least 99.97 percent of 0.3 micrometer diameter particles.

Immediately Dangerous to Life or Health (IDLH) - Atmosphere immediately hazardous to life or producing immediate irreversible harmful health effects.

Imminent Danger - A condition that may immediately cause the loss of life, serious injury, or illness of an employee.

Impulse or Impact Noise - Sound of short duration, usually < one second.

Material Safety Data Sheet (MSDS) - Used by manufacturers to communicate hazardous properties of products. Includes: name; address; emergency contact;

hazardous ingredients; physical, chemical, fire, explosion, reactivity, and health hazard data; safe handling, use, and control precautions.

Medical Surveillance - Medical evaluation of the health of workers exposed to chemical, physical or biological agents in the workplace.

NAVOSH - Navy Occupational Safety and Health. Navy safety and health standards are referred to as NAVOSH standards and are \geq OSHA standards.

NIOSH - National Institute for Occupational Safety and Health.

NIOSH/MSHA Certified Equipment - Safety equipment that has been tested by NIOSH or MSHA and meets minimum requirements for hazard protection.

Occupational Health - Field of medicine involving prevention and treatment of illness in the workplace. Includes: occupational medicine, occupational health nursing, toxicology, audiology, and industrial hygiene.

OSHA - Occupational Safety and Health Administration.

Oxygen Deficient Atmosphere - An atmosphere with an oxygen concentration below 19.5 percent. The normal oxygen level is 21.5%.

PEL - Permissible Exposure Limit. The maximum concentration of a chemical or physical agent (usually an 8-hour average) allowed by OSHA.

Radiofrequency Radiation (RFR) - Electromagnetic radiation from 10 kHz to 300 GHz.

Smoke - Carbon or soot particles less than 0.1 micrometer in size.

Solvent - A substance used to dissolve another substance.

TLV - Threshold Limit Value - Exposure limits established by ACGIH.

Toxic Substance or Harmful Physical Agent - Chemical, biological, or physical agents which are regulated by NAVOSH or Federal standards.

TWA - Time-Weighted Average. Average concentration of airborne material over a standard time period, usually 8 hours.

Vapor - Gaseous form of materials normally in the solid or liquid state.

Industrial Hygiene Customer Satisfaction Survey

In order to improve our Services, Industrial Hygiene would like to have feedback from all of our valued customers. Please return this questionnaire to the Industrial Hygiene Division via Guardmail or at the following address or visit online at

http://ice.disa.mil/index.cfm?fa=card&sp=124393&s=350&dep=*DoD&sc=11

Naval Hospital Beaufort
Industrial Hygiene Code 5JIH
1 Pinckney Blvd
Beaufort SC 29902-6148

Survey/Date: **MCAS BEAUFORT**

Department: Position:

Name: Phone:

Industrial Hygienist (IH) : <i>(Please use the comment block below to list comments or concerns)</i>	Yes	No	NA
Did the IH conduct their service in a professional manner?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was the IH responsive and helpful during the survey walk-through and with any related follow-up questions/concerns?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was the IH knowledgeable about the potential health hazards associated with this work area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

Industrial Hygiene Survey Report/Correspondence: <i>(Please use the comment block below to list comments or concerns)</i>	Yes	No	NA
Was the information in the executive summary appropriate for senior leadership?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was the report clear, concise and easy to understand?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Was the report layout and format easy to use and disseminate throughout your work centers?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were any personnel omitted from medical surveillance programs that you think should be enrolled?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were all work processes/concerns addressed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Were specific safety and health programs such as lead, hearing conservation, and reproductive hazards reviewed as appropriate for various work activities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

Please comment on what you thought were the best aspects of our services:

Please comment on how we may improve the services we provided to you: