



DEPARTMENT OF THE NAVY
NAVAL HOSPITAL
100 BREWSTER BLVD
CAMP LEJEUNE, NORTH CAROLINA 28547-2538

IN REPLY REFER TO
6260.14

~~6260.14~~
15 Mar 13

From: Commanding Officer, Naval Hospital, Camp Lejeune
To: Commanding Officer, Marine Corps Base, Camp Lejeune
Via: Commanding Officer, ~~Headquarters and Support Battalion~~, Marine Corps Base, Camp Lejeune

Subj: PERIODIC INDUSTRIAL HYGIENE SURVEY OF ~~HEADQUARTERS AND SUPPORT~~
BATTALION

Ref: (a) MCO P5100.8F
(b) OPNAVINST 5100.23G

Encl: (1) Industrial Hygiene Survey Report

1. A Periodic Industrial Hygiene (IH) survey of the subject activity was conducted per references (a) and (b).
2. The purpose of this survey is to assist you in meeting your legal responsibilities to provide a healthful work environment as outlined under the Federal Occupational Safety and Health laws and Navy and Marines regulations. The Industrial Hygiene evaluation and recommendations are based on the standards and guidelines established by references (a) and (b).
3. This Survey report is organized into individual work center assessments. The individual work center segments should be distributed to the responsible person for review and action.
4. Significant findings can be found in the Executive Summary of enclosure (1). Recommendations to improve current occupational health programs are provided in the individual work center assessment, enclosure (1).
5. Cooperation and support from the ~~Headquarters and Support~~ Battalion staff and especially Sgt continues to be outstanding. Please contact Mr. at @med.navy.mil for further assistance.

By direction

Copy to:
Base Safety
OccHlth Clinic

INDUSTRIAL HYGIENE SURVEY
OF
~~HEADQUARTERS AND SUPPORT~~ BATTALION
MARINE CORPS BASE
2013

SURVEY CONDUCTED BY:

~~BRIAN LOGGINS~~
INDUSTRIAL HYGIENIST

SURVEY REPORT APPROVED BY:

~~[REDACTED]~~
HEAD, INDUSTRIAL HYGIENE DEPT.

Enclosure (1)

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EXECUTIVE SUMMARY

1. The periodic Industrial Hygiene (IH) Survey of ~~Headquarters~~ ~~and Support~~ Battalion was conducted 20 February 2013 to review and evaluate work processes as related to Occupational Health exposures and the need for medical surveillance. This survey covers selected elements of ~~HP-53~~ Battalion that have not been previously surveyed by IH personnel. Areas previously surveyed by IH and written up separately include ~~MSDS, SGA,~~ ~~and~~ ~~Companies~~. Work centers in Buildings ~~HP-53~~ ~~HP-53~~ and ~~HP-55~~ were visited. Sergeant ~~XXXXXX~~ of the S-4 office accompanied the Industrial Hygiene Representative. Work processes are essentially the same as those noted during the previous survey in 2009.

2. HAZARDOUS MATERIAL/HAZARD COMMUNICATION (HAZCOM): *Program meets requirements*

a. A chemical inventory is reported to be maintained in the supply section Bldg ~~XXXXXX~~ and is available to produce Material Safety Data Sheets (MSDS). Periodic reviews of each sections inventory should be reconciled with the command inventory and any missing MSDS obtained via the supply system or the manufacturer(s) of hazardous products.

b. Battalion personnel may incur limited exposure to hazardous agents, e.g., cleaning products, vehicle exhaust fumes, lubricants, solvents, fuels and noise. Also, a number of products on the chemical inventory are irritants to the eyes, skin or respiratory tract. Substitution with a non-hazardous product is the preferred control method. If substitution is not an option the use of these products should be limited to specifically trained personnel. Information on safe usage and appropriate personal protective equipment can be found in the "Health Hazard Section" of the MSDS.

c. Currently, personnel exposures to hazardous chemicals are intermittent (weekly/annually) and tasks are distributed among various personnel. Individual exposures are not expected to exceed the Permissible Limits established by OSHA.

3. HEARING CONSERVATION: *Program meets requirements*

a. According to MARADMIN 010-12, all active duty Marine Corps personnel must be included in the command's hearing conservation program (HCP). Individuals assigned to the HCP are required to have annual audiograms and attend training. In 2012, a total of ~~XXXXXX~~ personnel were submitted for the program and ~~XXXXXX~~ personnel were tested for a compliance rate of ~~XX~~%.

personnel had a Significant Threshold Shift (STS) for a STS rate of [REDACTED]

b. HCP medical surveillance recommendations in this report are based solely on "in garrison" work day exposure assessments and do not incorporate personnel noise exposure incurred during deployment(s). Some personnel may be intermittently exposed to hazardous noise when operating lawn care equipment, blowers, chain saws and forklifts. Personnel are not anticipated to be routinely exposed to noise in excess of the Navy's Permissible Exposure Level of 85 dB (A).

c. Supervisory personnel should continue to enforce the wearing of hearing protection around hazardous noise producing equipment and continue to provide and document the annual training outlined in OPNAVINST 5100.23G & MCO P5100.8F.

4. **ERGONOMICS:** Ergonomics is concerned with the way workers interact with their work environment. The consistent use of computers, tools and associated equipment can result in fatigue and Cumulative Trauma Disorders (CTDs). Guidance is provided on page 8 of this report. Instructions on back safety and proper lifting techniques need to be incorporated as part of the ergonomic program, refer to page 9. Be sure to document all training. *Program meets requirements*

5. **PERSONAL PROTECTIVE EQUIPMENT (PPE):** PPE such as goggles, face shields, gloves and ear plugs/muffs is available in each work center.

6. **HEAT STRESS:**

a. A potential for heat stress is present in the summer months for personnel and should be addressed. Marine Corps Order 6200.1E is the applicable regulation to follow. Be sure to conduct and document annual training. Subject covered during safety meetings.

b. The heat stress is monitored through Camp Lejeune's automatic Wet Bulb Globe Temperature readings by dialing 910-451-1717, press# 3, dial (1) Camp Lejeune, (2) Stone Bay, (3) Courthouse Bay, (4) Camp Geiger and (5) Camp Johnson for current flag conditions and (6) for information about the system. Real-time heat stress flag conditions are at <https://ecmcpms.lejeune.usmc.mil/AHSS/> and <http://clion.lejeune.usmc.mil/>. Questions or comments contact the AHSS Helpdesk 910-451-5720 ext. 7567.

7. This report reflects the present conditions and operations at the [REDACTED] Battalion facilities during the survey period. Industrial Hygiene surveys are required for most

industrial workplaces by the OPNAVINST 5100.23G. In addition, changes in procedures, processes or workloads that may significantly alter personnel exposures require more frequent evaluations. Supervisory personnel should be encouraged to notify the Naval Hospital, Industrial Hygiene Department at 449-9673 when significant changes occur pertaining to engineering designs, SOPs, purchasing transactions/contracts relevant to industrial hygiene.

8. The next Industrial Hygiene survey will be conducted in 2017 per OPNAVINST 5100.23G, Chapter 8, App. 8-B. These work centers are listed as Category III Low Hazard and the required periodic Industrial Hygiene reevaluation frequency is listed as every 4 years.

9. No Industrial Hygiene discrepancy was noted during this survey.

DISCREPANCY/HEALTH RISK CODE (HRC)

1. Discrepancies are assigned a Health Risk Code (HRC), which represent the severity of the hazard and the probability of the mishap occurring. A summary of the total HRC's assigned to the occupational health discrepancies noted during the survey is as follows:

WORK CENTER	NUMBER	HRC	DISCREPANCY/REFERENCE CITED
None			N/A

HRC

NUMBER OF DISCREPANCIES

1- Critical	0
2- Serious	0
3- Moderate	0
4- Minor	0
5- Negligible	0

A summary of these findings is provided in the table above. Detailed findings and specific recommendations are provided in the Industrial Hygiene Survey Report under observations and recommendations sections. The discrepancies noted are to be corrected within 30 days of the receipt of the survey report. Copies of corrective action should be forwarded to the Industrial Hygiene Department, Naval Hospital, Camp Lejeune.

PRODUCTS CONTAINING POTENTIAL
CARCINOGEN OR REPRODUCTIVE HAZARDS

PRODUCTS	MANUFACTURER/NSN	POTENTIAL HAZARD
White - aerosol	LHB/00-935-6609	R-tol 17%
Brown - aerosol	Plastic-Kote/00-721-9742	R-tol 30%
Olive spray paint	LHB/00-598-5936	C-CS 4%
Black spray paint	LHB/00-616-9143	R-tol 10%
White spray paint	LHB/00-935-6609	R-tol 17%
Yellow spray paint	LHB/00-721-9744	R-tol 20%
Red spray paint	LHB/00-72197473	R-tol 30%

Legend:

S = Sensitizer
R = Reproductive Hazard
C = Carcinogen

HDI = Hexamethylene diisocyanate
tol = toluene
CS = crystalline silica

LIST OF REQUIRED OSH TRAINING*

Reference: OPNAVINST 5100.23G

TRAINING	PERSONNEL	PERIODICITY
HAZARD COMMUNICATION (HAZCOM)	ALL PERSONNEL	ANNUAL
SIGHT CONSERVATION	ALL PERSONNEL WORKING IN EYE HAZARD AREAS (ARMORY)	ANNUAL
PERSONAL PROTECTIVE EQUIPMENT (PPE)	ALL PERSONNEL	ANNUAL
ERGONOMICS	ALL PERSONNEL	ANNUAL
HEAT STRESS	ALL PERSONNEL	ANNUAL
HEARING CONSERVATION	ALL MARINE CORPS PERSONNEL	ANNUAL

*Be sure to document all training.

MEDICAL SURVEILLANCE PROGRAM SUMMARY

SHOP	PROGRAM NUMBERS	SPECIAL EXAMINATIONS AND/OR STRESSORS
ADMINISTRATIVE OFFICES, BLDG 111-00-0111-00	<i>None</i>	<i>N/A</i>
BARRACKS, BLDGS 111-00-0111-00	<i>None</i>	<i>N/A</i>
WAREHOUSE/ARMORY, BLDG 111-00-0111-00	<i>None</i>	<i>N/A</i>

PROGRAM NUMBERS AND SPECIAL EXAMINATIONS	PROGRAM NUMBERS AND STRESSOR CATEGORIES
701-Aviation 702-Wastewater/Sewage Worker 703-Child Care Worker 704-Construction, Railroad, & Weight Handling Equipment Operators 705-Diver/Hyperbaric Worker 706-Motor Vehicle Operator (DOT) 707-Firefighter 708-Welders/Braziers/NDI 709-Foodservice Personnel 710-Forklift Operator 711-Hazardous Waste Workers & Emergency Responders 712-Motor Vehicle Operator (Other than DOT) 713-Naval Criminal Investigative Service 714-Police/Guard Security 716-Respirator User Certification Exam 719-Health Care Worker 720-Explosives Vehicle Operators 721-Explosive Handler 723-Barber and Beauty Shop Employees	<u>CHEMICAL STRESSORS</u> 113-Asbestos, Current Worker 117-Benzene 124-Cadmium 133-Chromic Acid/Chromium VI 151-Formaldehyde 161-Lead 168-Methylene Chloride 178-Blood and/or Body Fluids 187-Silica (Crystalline) 196-Isocyanates 210-Manganese Oxide Fumes <u>PHYSICAL STRESSORS</u> 502-Heat 503-Noise 505-Radiation (Ionizing) 506-Radiation (Laser; Class III & IV) 508-Hand/Arm Vibration <u>MIXED EXPOSURES</u> 108-Anesthetic Gases 207-Animal Associated Disease 212-Manmade Mineral Fibers 602-Metal Fumes 604-Wood Dust

*** HCP medical surveillance recommendations in this report are based solely on "in garrison" work day, exposure assessments and do not incorporate personnel noise exposure incurred during deployment(s).

<http://www.public.navy.mil/navsafecen/pages/osh/medsurv.aspx>

ERGONOMICS PROGRAM TRAINING HANDOUT

The main risks to employee health and safety are from ergonomic factors. Computer usage has increased widely in today's work centers. With this increase, there is also an increase in employee complaints of musculoskeletal problems and repetitive motion disorders. The goal of the ergonomics program is to prevent injuries and illnesses by applying ergonomic principles to identify, evaluate and control ergonomic risk factors for work-related musculoskeletal disorders (WMSDs). WMSDs are disorders of the musculoskeletal and nervous system occurring either on the upper or lower extremity and/or the spine. This category of injuries includes both cumulative trauma disorders (CTDs) and over exertion injuries (sprains and strains). Examples of WMSDs include but are not limited to: tendonitis, tenosynovitis, bursitis, lower back strain and carpal tunnel syndrome.

In general, worker's who use a computer (i.e. data entry, secretary) intensively for 4 hours or more per day can develop musculoskeletal disorders of the hand/arm, shoulder, neck and back. If pain or discomfort is experienced by staff, employees should contact Safety for further evaluation. The following are guidelines to improve employee workspaces in order to alleviate ergonomic related symptoms:

- Arrange materials and supplies in front of the body so they can be easily reached with elbows close to the torso. (See Figure 1)
- Provide adjustable, supportive padded chairs that support the forearms, legs, and low back. Armrests should allow the elbows to hang normally at the side of the body.
- Arrange monitor so that the most commonly viewed area is slightly below (about 20 degrees), horizontal eye level and can be seen without looking up, or leaning forward.
- Use a keyboard, which includes an adjustable mouse support than can be easily reached from a keying position. Employees should keep wrists straight while typing and use wrist pads to rest on when not typing. (See Figure 2)
- Take frequent mini-breaks/stretchers throughout the work shift to eliminate stress and fatigue caused by highly repetitive tasks or tasks that require the person to remain in a static position for prolonged periods of time.

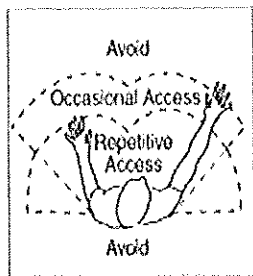


Fig. 1 Keep most work activities within repetitive access area.

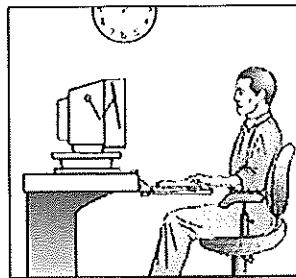


Fig. 2 Maintain straight wrist posture

The following links provide ergonomic information as it relates to computer workstation design and ergonomics in office settings:

- <http://www.osha.gov/SLTC/etools/computerworkstations/index.html>
- [http://www.ergoworkinggroup.org/ewgweb/SubPages/ProgramTools/Publications/Workstation Guide Web.pdf](http://www.ergoworkinggroup.org/ewgweb/SubPages/ProgramTools/Publications/Workstation%20Guide%20Web.pdf)

GUIDELINES FOR PROPER LIFTING

The use of stretching is appropriate as part of a comprehensive ergonomic program. Stretching must not be used in place of engineering and/or administrative improvements.

Check for tags on loads.

Before lifting, always test the load for stability and weight.

For loads that are unstable and/or heavy, follow management guidelines for:

- Equipment use
- Reducing the weight of the load
- Repacking containers to increase stability

Plan the lift:

- Wear appropriate shoes to avoid slips, trips, or falls.
- If you wear gloves, choose the size that fits properly. Depending on the material the gloves are made of and the number of pairs worn at once, more force may be needed to grasp and hold objects. For example, wearing a single pair of heat-resistant gloves can reduce your grip strength up to 40 percent. Wearing two or more pairs of gloves at once can reduce your grip strength up to 60 percent.
- Lift only as much as you can safely handle by yourself.
- Keep the lifts in your power zone (i.e., above the knees, below the shoulders, and close to the body), whenever possible.
- Use extra caution when lifting loads that may be unstable.

When lifting:

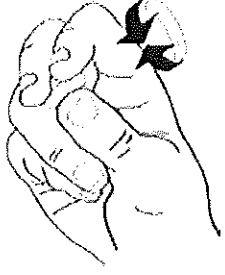
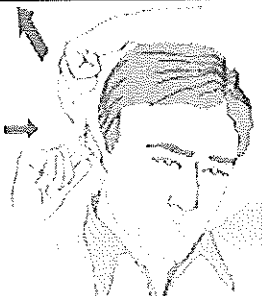

- Get a secure grip.
- Use both hands whenever possible.
- Avoid jerking by using smooth, even motions.
- Keep the load as close to the body as possible.
- To the extent feasible use your legs to push up and lift the load, not the upper body or back.
- Do not twist your body. Step to one side or the other to turn.
- Alternate heavy lifting or forceful exertion tasks with less physically demanding tasks.
- Take rest breaks.



Keep the load close to your body and lift by pushing up with your legs.

HOW TO WEAR SOFT FOAM EARPLUGS

To get the best protection from your soft foam earplugs, remember to **roll**, **pull**, and **hold** when putting them in. Use clean hands to keep from getting dirt and germs into your ears!

	<p>1. Roll the earplug up into a small, thin "snake" with your fingers. You can use one or both hands.</p>
	<p>2. Pull the top of your ear up and back with your opposite hand to straighten out your ear canal. The rolled-up earplug should slide right in.</p>
	<p>3. Hold the earplug in with your finger. Count to 20 or 30 out loud while waiting for the plug to expand and fill the ear canal. Your voice will sound muffled when the plug has made a good seal.</p>

Check the fit when you're all done. Most of the foam body of the earplug should be within the ear canal. Try cupping your hands tightly over your ears. If sounds are much more muffled with your hands in place, the earplug may not be sealing properly. Take the earplug out and try again.

EXPOSURE MEASUREMENT CRITERIA AND RATIONALE

This survey report presents the concentration of chemical contaminants in terms of mass per unit volume (milligrams per cubic meter - mg/m^3) or, in the case of asbestos, in fibers per cubic centimeter of air (f/cc). The time weighted average (TWA) or ceiling concentrations of chemicals or particulate, as well as the directly measured levels of physical hazards, such as noise, are compared to exposure standards established by appropriate Naval instructions or Permissible Exposure Limits (PEL) established by the Occupational Safety and Health Administration (OSHA). In the case that neither a Navy nor an OSHA standard has been promulgated, then a nationally recognized consensus standard such as those established by the American Conference of Governmental Industrial Hygienists (ACGIH), the American National Standards Institute (ANSI) or the National Fire Protection Association (NFPA) may be used.

It should be noted that the measured workplace levels of chemical, physical or biological hazards are compared to the standards without regard for any personal protective equipment that may be worn or the protection that may be afforded by it. The goal is to reduce workplace hazard levels by other means so that personal protective equipment is not required.

The sampling and analyses performed in support of this survey follow methods approved and validated by the National Institute of Occupational Safety and Health (NIOSH) or by appropriate Naval instructions. When methods are either unavailable or not applicable, other consensus methods may be used. In all cases, accepted professional industrial hygiene practices are followed. Documentation concerning the types of instruments used and their calibration records is held by the Industrial Hygiene Department, Directorate for Public Health, Naval Hospital, Camp Lejeune.

NAVAL HOSPITAL, CAMP LEJEUNE, INDUSTRIAL HYGIENE DEPARTMENT
 PERIODIC INDUSTRIAL HYGIENE SURVEY OF
 ██████████ BATTALION
 WORKPLACE ASSESSMENT

SHOP, LOCATION: Administrative Offices, Bldg#'s █████ and █████
 Barracks, Bldg#'s █████ and █████

DATE OF SURVEY: 20 February 2013

REFERENCES: (a) OPNAVINST 5100.23G
 (b) 29 CFR 1910.1000 (1989-92 OSHA Stds.)
 (c) 29 CFR 1910.132(e)

ATTACHMENT: (1) Personal Protective Equipment (PPE)
 Checklist

1. INTRODUCTION

a. A walkthrough of the offices and supply storage areas in Bldg# █████ was accomplished. The work sections covered in this segment of the survey included the Headquarters Offices, Family Readiness Officer, Chaplain, Substance Abuse Control Officer, Career Planner, Mail Room, S-1, S-3, and the S-4. There are approximately █████ personnel: █████ active duty males, █████ active duty females, █████ civilian males and █████ civilian females.

b. The barracks █████ houses █████ company office. █████ has █████ active duty personnel that work in the office and there are █████ residents in the barracks. █████ houses █████ and █████ company offices. █████ has █████ active duty personnel and █████ residents. █████ has █████ active duty personnel and █████ residents.

2. OPERATIONS. The current work tasks and the potential or known health hazards associated with them are presented in the table below. A discussion of each task follows the table.

TASK	HAZARD	WORKERS INVOLVED	DURATION FREQUENCY	HAZARD CONTROLS ADEQUATE?	EXPOSURE ASSESSMENT RATIONALE*
Computer Use	Repetitive Motions; Static Stress	59	2-6 Hours Daily	Yes: Rest Breaks; Workplace Design	Acceptable
Use of Power Tools	Noise	8 to 10 (S-4 Personnel)	Cleanup after Hurricanes	Yes: Ear Plugs, Frequency & Duration	Acceptable

TASK	HAZARD	WORKERS INVOLVED	DURATION FREQUENCY	HAZARD CONTROLS ADEQUATE?	EXPOSURE ASSESSMENT RATIONALE*
Painting (Aerosol Cans, Brush & Roller)	Toluene(R), Crystalline Silica(C)	8-10 (S-4 Personnel)	30 Minutes Quarterly	Yes: Gloves, Goggles, Frequency & Duration	Acceptable
Housekeeping	Chemicals/ Mold	All	1-2 Hours Weekly	Yes: PPE, Training	Acceptable

LEGEND:

* = Refer to Appendix A

C = Classified as a known or suspected human carcinogen per ACGIH (A1 & A2) or OSHA

R = Classified as a known reproductive hazard in Chapter 29 OPNAVINST 5100.23G

3. ADMINISTRATIVE DUTIES (Repetitive Motion)

OBSERVATION: Administrative personnel perform daily administrative tasks including general "admin" procedures and computer operations that pertain to the command.

RECOMMENDATIONS:

a. The Ergonomics Program Training handout, provided on pages 8 of this report, is for supervisors to use in training personnel on how to help prevent and reduce CTDs and adjust their workstations. Employee education in the area of ergonomics is probably the single most effective way in dealing with physical and mental strain associated with computer usage. Training employees in the proper adjustment of their workstation may prevent occupational injuries and enhance productivity.

b. Instructions on back safety and proper lifting techniques need to be incorporated as part of the ergonomic program. Be sure to document all training per reference (a). Guidelines for safer lifting are included on page 9 of this report.

4. USE OF POWERED EQUIPMENT (Noise)

OBSERVATION: Personnel assigned to the S-4 section may be required to use noise hazardous mowers, weed eaters, hedge trimmers, edger, blowers, chainsaws and shop vacuums at certain times throughout the year, e.g., after hurricanes. Current inventory is stored in a small metal structure (7A), located to the rear of Bldg 8. Some of these equipment items have been previously monitored and labeled as noise hazardous. Industrial

Hygiene is available for noise evaluation of new items prior to use.

RECOMMENDATIONS:

a. When notified that the new power equipment has been placed into operation for training, the Industrial Hygiene Dept, will provide monitoring to determine the noise levels generated.

b. Personnel should wear hearing protection when using the power equipment mentioned above.

c. Based on the duration and limited usage of noise producing equipment, personnel are not anticipated to exceed the Navy's Permissible Exposure Level of 85 dB(A) 8-hour Time Weighted Average (TWA) and are not recommended for inclusion in the Hearing Conservation Program (HCP).

5. PAINTING (Toluene)

OBSERVATION: Most paints are stored in an outdoor paint locker. Personnel from the S-4 section may use latex paints in the parking lot as well as the offices about once a quarter with a brush or roller. Aerosol paints may also be used at the same frequency. Many of the spray (aerosol) paints were noted to contain toluene, which is considered to be a reproductive hazard. The length of individual tasks is about 30 minutes or less. Based upon the duration and frequency of operations, personnel are not anticipated to be in excess of the Action Level (AL) or Permissible Exposure Limits (PELs) for toluene or other paint constituents.

RECOMMENDATION: The use of gloves and eye protection should be encouraged for those applying paints, especially, in outdoor situations with variable wind conditions and/or overhead applications.

6. HOUSEKEEPING (Cleaning Chemicals)

OBSERVATION: Household cleaning chemicals are used. Chemical resistant gloves can provide adequate protection. There has been a mold problem in some of the bathrooms of the barrack rooms. Personnel consistently have to clean up mold growth.

RECOMMENDATIONS: There is no anticipated exposure to cleaning chemicals above the Permissible Exposure Limits (PELs) per reference (b), due to the frequency and duration of the use of the products. Training and documentation should be conducted per reference (a).

PERSONAL PROTECTIVE EQUIPMENT (PPE): A Personal Protective Equipment Checklist has been provided as Attachment (1). A copy

should be posted in the appropriate work area and all recommendations followed. Per reference (c) training in the use and maintenance of PPE should be ensured.

MEDICAL SURVEILLANCE RECOMMENDED: According to MARADMIN 010-12, all active duty Marine Corps personnel must be included in the command's Hearing Conservation Program (HCP); however these areas are not considered to be noise hazardous while in garrison. Individuals assigned to the HCP are required to have annual audiograms and attend training. To make appointments as required, call the Occupational Health Department at 451-2181.

**PERSONAL PROTECTIVE EQUIPMENT
CHECKLIST**

Command: ~~XXXXXXXXXXXX~~ BN
 Shop: Bldg# ~~XXXX~~
 Survey #: ~~19-92-110~~

Ind Hyg: ~~XXXXXXXXXX~~
 Telephone: 449-9673

 WORKTASK EYE AND CLOTHING AND MINIMUM
 HEARING HAND PROTECTION PROTECTION
 RESPIRATORY PROTECTION PROTECTION

Use of Cleaning a f
 Products

Use of Power e, f
 Equipment

Painting a f

 Eye and Hearing Clothing and Hand Respiratory
 Protection Protection Protection

- | | | |
|-----------------------|------------------------|-----------------------------------------------|
| a. Chemical Goggles | a. Tyvek Coveralls | a. 1/2 Mask,
Dust/Mist/Fume |
| b. Face Shield | b. Cloth Coveralls | b. 1/2 Mask,
Organic Vapor |
| c. Welding Helmet | c. Rubber Apron | c. 1/2 Mask,
Organic Vapor
w/Pre-filter |
| d. Welding Goggles | d. Leather Jacket/Vest | d. Full Face,
Dust/Mist/Fume |
| e. Safety Glasses | e. Welding Gloves | e. Full Face
Organic Vapor |
| f. Ear Plugs or Muffs | f. Impervious Gloves | f. Air-Line |
| g. Double Hearing | g. Cloth Gloves | |
| | h. Cloth Hood | |
| | i. Helmet | |
| | j. Lab Coat | |

NAVAL HOSPITAL, CAMP LEJEUNE, INDUSTRIAL HYGIENE DEPARTMENT
 PERIODIC INDUSTRIAL HYGIENE SURVEY OF
~~HEADQUARTERS AND SUPPORT BATTALION~~
 WORKPLACE ASSESSMENT

SHOP, LOCATION: Supply/Warehouse/Armory, Bldg# ~~4115~~

DATE OF SURVEY: 20 April 2013

REFERENCES: (a) OPNAVINST 5100.23G
 (b) 29 CFR 1910.1000(1989-92 OSHA Stds.)
 (c) 29 CFR 1910.132(e)

ATTACHMENT: (1) Personal Protective Equipment (PPE)
 Checklist

1. INTRODUCTION. The areas covered in this segment of the survey include the ~~Headquarters and Support~~ Battalion facilities, i.e., the armory, supply offices and warehouse in Bldg# ~~4115~~. There is 1 active duty male and 1 civilian male assigned to the Armory. Supply has 2 civilian males and 1 civilian female.

2. OPERATIONS. Current work tasks reported by the staff and the potential or known health hazards associated with them are presented in the table below. Remarks concerning each task follow the table.

TASK	HAZARD	WORKERS INVOLVED	DURATION FREQUENCY	HAZARD CONTROLS ADEQUATE?	EXPOSURE ASSESSMENT RATIONALE*
Computer Use	Repetitive Motions; Static Stress	4	6-8 Hours Daily	Yes: Rest Breaks, Work Place Design	Acceptable
Forklift Operation	CO(R)/Noise	2	1-2 Hours Daily	Yes: Open Bay Doors/PPE, Frequency & Duration	Acceptable
Cleaning Weapons	Solvents (Stoddard Solvent Naphtha Safety Kleen, CLP)	2	10 Hours Weekly	Yes: Gloves, Goggles, Aprons, Training	Acceptable
Live Firing (Range Visits)	Noise/ Lead (R)	2	14 Hours Quarterly	Yes: Hearing Protection & Training	Acceptable

TASK	HAZARD	WORKERS INVOLVED	DURATION FREQUENCY	HAZARD CONTROLS ADEQUATE?	EXPOSURE ASSESSMENT RATIONALE *
Painting	Toluene (R)	2	30 Minutes Monthly	Yes: Gloves, Goggles, Frequency & Duration	Acceptable
LEGEND: * = Refer to Appendix A C = Classified as a known or suspected human carcinogen per ACGIH (A1 & A2) or OSHA R = Classified as a known reproductive hazard in Chapter 29 OPNAVINST 5100.23G					

3. ADMINISTRATIVE DUTIES (Repetitive Motion)

OBSERVATION: Administrative personnel perform daily administrative tasks including general "admin" procedures and computer operations that pertain to the command.

RECOMMENDATIONS:

a. The Ergonomics Program Training handout, provided on pages 10 of this report, is for supervisors to use in training personnel on how to help prevent and reduce CTDs and adjust their workstations. Employee education in the area of ergonomics is probably the single most effective way in dealing with physical and mental strain associated with computer usage. Training employees in the proper adjustment of their workstation may prevent occupational injuries and enhance productivity.

b. Instructions on back safety and proper lifting techniques need to be incorporated as part of the ergonomic program. Be sure to document all training per reference (a). Guidelines for safer lifting are included on page 11 of this report.

4. FORKLIFT OPERATION (Carbon Monoxide & Noise)

OBSERVATION: A diesel powered forklift is used by personnel for 1-2 hours per day. This is done with warehouse doors opened. Due to this limited use and bay doors continually open, no over exposures to carbon monoxide are expected per reference (b).

RECOMMENDATIONS:

a. Notify Industrial Hygiene personnel in the event the amount of forklift usage increases so this operation can be re-evaluated.

b. Be sure all personnel using the forklift wear the appropriate hearing protection.

5. CLEANING WEAPONS (Lead)

OBSERVATIONS:

a. Individual shooters clean their own weapons on the warehouse floor adjacent to the Armory. The two armory personnel may be required to clean "excess" weapons for about ten (10) hours per week. The solvents used are Safety Kleen and CLP (Break Free). Personal protective equipment such as gloves, goggles and aprons is available for use.

b. The portable eyewash recorded change of water was current for the pressurized emergency eyewash. An antibacterial additive is used.

RECOMMENDATIONS:

a. The protective goggles should be stored in zip lock plastic bags.

b. The past results (IH Report #~~90-054-110~~/~~01-01-105~~ dtd ~~01-10-01~~) of air monitoring for stoddard solvent and naphtha were significantly below the Action Level (AL) and Permissible Exposure Limits (PEL), per reference (b). Protective gloves should be used to minimize absorption of solvents through the skin.

c. According to the eyewash manufacturer's recommendation, the water should be changed 6 months when using the recommended eyewash additive (NSN 6840-01-267-4346). The change should be recorded on maintenance records.

6. LIVE FIRING (Noise/Lead)

OBSERVATIONS:

a. Personnel oversee training operations at the pistol and rifle ranges and are subject to hazardous noise. These operations insure that the battalion maintains annual proficiency.

b. Personnel have the potential to be exposed to lead fumes/dust during training operations at the pistol and rifle ranges. Lead is considered a reproductive hazard and a neurotoxin (an agent that affects the human nervous system).

RECOMMENDATIONS:

a. Personnel are required to wear hearing protection when firing weapons. Personnel should receive periodic documented training regarding proper wearing and maintenance

of hearing protective devices, effects of hearing loss and individual responsibilities. Ensure that PPE is inspected for defects and replaced as needed. Guidelines for "How to Wear Soft Foam Earplugs" are enclosed on page 10 of this report.

b. ~~██████████~~ Battalion shall inform exposed personnel of the contents of Appendices A (Substance data Sheet for Occupational Exposure to Lead) and B (Employee Standard Summary) of 29 CFR 1910.1025 and keep a copy available to all affected individuals. The training needs to be conducted annually and documented.

c. Personnel should wash hands immediately after the range visits. Hands should be washed before smoking, eating or drinking to prevent ingestion of lead.

7. PAINTING

OBSERVATION: Paints are stored in a Flammables locker on the warehouse floor. Personnel may use spray paints outdoors that contain toluene for approximately 30 minutes per month while stenciling signs and equipment. Toluene is considered to be a reproductive hazard. Due to limited frequency and duration of use, exposures to toluene over the Action Level (AL) or Permissible Exposure Limit (PEL) are not anticipated.

RECOMMENDATIONS:

a. The use of gloves and eye protection should be encouraged for those applying paints, especially in outdoor situations with variable wind conditions and/or overhead applications.

PERSONAL PROTECTIVE EQUIPMENT RECOMMENDATION: A Personal Protective Equipment Checklist has been provided as Attachment (1). A copy should be **posted** in the appropriate work area and all recommendations followed. Per reference (c) training in the use and maintenance of PPE should be ensured.

MEDICAL SURVEILLANCE RECOMMENDED: According to MARADMIN 010-12, all active duty Marine Corps personnel must be included in the command's Hearing Conservation Program (HCP); however these areas are not considered to be noise hazardous while in garrison. Individuals assigned to the HCP are required to have annual audiograms and attend training. To make appointments as required, call the Occupational Health Department at 451-2181.

**PERSONAL PROTECTIVE EQUIPMENT
CHECKLIST**

Command: ~~Headquarters Support~~ BN Ind Hyg: ~~440-0653~~
 Shop: Bldg# ~~4117~~ Telephone: ~~440-0653~~
 Survey #: ~~139214~~

WORKTASK	EYE AND HEARING	CLOTHING AND HAND PROTECTION	MINIMUM
RESPIRATORY	PROTECTION		PROTECTION

Cleaning Weapons	a	c, f	
Live Fire/ Range Operations	f or g		
Forklift	f		
Painting	a	f	

Eye and Hearing Protection	Clothing and Hand Protection	Respiratory Protection
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a. Chemical Goggles	a. Tyvek Coveralls	a. 1/2 Mask, Dust/Mist/Fume
b. Face Shield	b. Cloth Coveralls	b. 1/2 Mask, Organic Vapor
c. Welding Helmet	c. Rubber Apron	c. 1/2 Mask, Organic Vapor w/Pre-filter
d. Welding Goggles	d. Leather Jacket/Vest	d. Full Face, Dust/Mist/Fume
e. Safety Glasses	e. Welding Gloves	e. Full Face Organic Vapor
f. Ear Plugs or Muffs	f. Impervious Gloves	f. Air-Line
g. Double Hearing	g. Cloth Gloves	g. Military Issue Gas Mask w/HEPA Cartridge
	h. Cloth Hood	
	i. Helmet	
	j. Lab Coat	

Attachment (1)

Exposure Monitoring Plan

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WORKPLACE INFORMATION

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Organization: ~~Headquarters & Support~~ Bn, MCB Survey: ~~13-99~~
~~14~~

Shop/Work Center: Admin, Warehouse, Supply and Armory

Location: Bldg# ~~08, HP-53, HP-55 and 1115~~

Supervisor: Sgt Lawson		Phone: 451-4992
No. of Workers 51	Male: 46	Female: 05

Shop Operations: Warehouse, Admin and Armory

POTENTIAL HAZARD	INTERMITTENT OR CONTINUOUS	WORKERS INVOLVED	CONTROLS
Cleaning Chemicals	I	All	Ventilation, PPE
Ergonomics	I	All	Training
Safety Kleen & CLP	I	2	PPE, Training

EXPOSURE ASSESSMENT

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Are employees potentially exposed to toxic chemicals or harmful physical agents? Yes X ___ No ___

No requires rationale:

Signed: D. J. Lawson	Date: 15 MARCH 2013
Title: Industrial Hygienist	

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MONITORING PLAN

Potential Hazard	No. Of Measurements	Method Of Measurement ¹	Location Of Measurement ²	Frequency (Per Year)	Man-Hours (Per Year)
Lead	6	O (Wipes)	GA	Every 4 Years	2

Use the following codes:
 DR-Direct reading instrument
 IT-Indicator tube
 AT-Adsorption tube (charcoal, etc.)
 B/I-Bubbler/Impinger
 F-Filter
 PD-Personal Dosimeter
 O-Other

Use the following codes:
 GA-General area
 BZ-Breathing zone
 SZ-Source zone
 O-Other (specify)

EXPOSURE ASSESSMENT RATIONALE

1. **"ACCEPTABLE"** - An exposure profile for a worker, or a group of workers who are similarly exposed (SEG) where the level of health risk is acceptable (below occupational exposure limits) or "under control" applying risk management and professional judgment using available industrial hygiene data. Routine monitoring maybe required to ensure the exposure profile remains acceptable.

2. **"UNACCEPTABLE"** - An exposure profile that is poorly controlled or uncontrolled in which a significant risk for the development of occupational illness is associated with a worker, or a group of workers who are similarly exposed (SEG) regardless of use of PPE; the probability of adverse health effects is significant; or there is evidence of adverse health effects associated with exposure to a hazard (i.e., exceeds an occupational exposure limit, etc.) Unacceptable exposures will require control measures and medical surveillance.

3. **"UNCERTAIN"** - Exposure profiles that lack definitive detail to make clear decisions. Exposure judgment is either made with limited or not enough industrial hygiene data to support a "acceptable" or "unacceptable" assessment at this point. For chemical, biological, or physical exposures with occupational exposure levels having this assessment will need baseline or added monitoring and will be included in a Workplace Monitoring Plan. Some form of control, medical surveillance, or both may be recommended.

NOTE: An exposure profile is a characterization of the day-to-day variability of exposures of a SEG. A qualitative exposure profile may be based on professional judgment, whereas a quantitative exposure profile is based on statistics and includes measures of central tendency and measures of variability.

Appendix A