From: Officer in Charge, Naval Medical Administrative Unit, Monterey
To: Superintendent, Naval Postgraduate School, Monterey,  
1 University Circle, Monterey CA 93943-5100

Subj: ANNUAL HYGIENE SURVEY OF NAVAL POSTGRADUATE SCHOOL, MONTEREY,  
EXCHANGE DEPARTMENT

Ref: (a) OPNAVINST 5100.23F, Chapter 8, Section 0803.a

Encl: (1) Industrial Hygiene Survey Report ET-0204

1. As required by reference (a), an annual industrial hygiene survey of the  
Naval Postgraduate School, Monterey, Exchange Department was conducted on  
16 and 18 April 2003 by the Naval Medical Administrative Unit, Monterey  
industrial hygienist. The survey report ET-0204 is forwarded as  
enclosure (1).

2. Due to the size and complexity of your command, separate reports will be  
issued as surveys of individual areas are completed to ensure the timeliness  
of the information. This survey is a service provided under the overall  
Occupational Health Program. It is not an inspection report but is designed  
to assist your Command's Occupational Safety and Health Program by identifying  
and evaluating actual and potential occupational health hazards and the status  
of their controls.

3. The Navy Oversight Inspection Unit and other inspection teams rely on these  
surveys and the corrective actions taken as indicators of an aggressive and  
comprehensive Navy Occupational Safety and Health (NAVOSH) Program. Since  
there were no findings, a formal response to this report is unnecessary.

4. Further clarification or consultation with respect to these findings and  
recommendations is available from Eric Thurston at commercial (831) 656-3466,  
e-mail sethurst@nps.navy.mil.

S.E. THURSTON
By direction

Copy to:  
Industrial Hygiene Department, NAVHOSP Lemoore
NAVAL MEDICAL ADMINISTRATIVE UNIT, MONTEREY
INDUSTRIAL HYGIENE SURVEY
of
NAVAL POSTGRADUATE SCHOOL, MONTEREY
EXCHANGE DEPARTMENT
SURVEY #ET-0204
16 and 18 April 2003

Survey Conducted By: Eric Thurston,
Industrial Hygienist
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EXECUTIVE SUMMARY

There no major findings identified. The Industrial Hygienist is assisting the departmental safety coordinator in implementing a bloodborne pathogens control program for the Barber Shop.

The department’s Hazardous Material Control Program shows continuing improvement. The number of different chemical products at the Auto Port has been greatly reduced.

Specific details of these findings can be found in sections II and III of this report. The cooperation of your staff, especially Dave Cohen and Art Reynolds, was greatly appreciated.
COMMON ABBREVIATIONS AND GLOSSARY

(The following abbreviations may be used in this report)

ACGIH  American Conference of Governmental Industrial Hygienists
ACM  Asbestos Containing Material.
AL  Action Level. Normally ½ PEL. Exposure level at which air sampling, employee training, medical surveillance are required.
ANSI  American National Standards Institute. A national consensus standards developing organization.
Ceiling  A toxic material exposure level which cannot be exceeded for any length of time.
CFM  Cubic feet per minute. Air flow rate.
dBA  A sound level reading in decibels as measured on the A-weighted network of a sound level meter.
EL  Excursion Limit. Is a concentration limit which cannot be exceeded at any time.
EPA  Environmental Protection Agency.
f/cc  Fibers per cubic centimeter. A means for expressing airborne asbestos fiber concentrations.
FPM  Feet per minute.
HAZCOM  Hazard communication. A system for training employees about job hazards through the use of chemical inventories, MSDSs, labels, and personnel training.
HCP  Hearing Conservation Program. A program to prevent hearing loss from exposure to noise through the use of hearing protection, training, and medical surveillance.
HEPA  High-efficiency particulate air filter. A filter capable of trapping and retaining 99.97% of 0.3 micron diameter, or larger, particles.
HM  Hazardous material. A material which is a physical or health hazard per 29 CFR 1910.1200.
HW  Hazardous waste. Any discarded or abandoned hazardous substance as defined in 40 CFR 261.
LEV  Local exhaust ventilation. Exhaust system at source of contamination.
mg/m3  Milligrams per cubic meter of air. A means for expressing concentrations of dust and metal fumes in air.
MMVF  Man made vitreous fibers. (Fiberglass, mineral wool, ceramics)
MSAL  Medical Surveillance Action Level. A concentration of an air contaminant at which medical surveillance examinations must be provided to exposed personnel.
MSDS  Material Safety Data Sheet. A form used by manufacturers to communicate to users the chemical and physical properties of their products.
NAVOSH  Navy Occupational Safety and Health
NFPA  National Fire Protection Association
NIOSH  National Institute for Occupational Safety and Health. Recommends safety and health standards for OSHA.
NPEL  Navy Permissible Exposure Limit.
OSHA  Occupational Safety and Health Administration.
OV  Organic vapors.
PCB  Polychlorinated Biphenyl
COMMON ABBREVIATIONS AND GLOSSARY

PEL  Permissible Exposure Limit. The maximum permissible allowable exposure level of a toxic chemical or harmful physical agent (normally averaged over 8 hours) to which an employee may be exposed.

PPE  Personal Protective Equipment. Clothing or devices furnished to protect employees in performance of work in potentially hazardous areas or conditions.

ppm  Parts per million. A means for expressing the concentration of gases and vapors in air.

RFR  Radiofrequency/Microwave Radiation.

RPMP  Respiratory Protection Program Manager.

SCBA  Self Contained Breathing Apparatus.

SOP  Standard Operating Procedures.

STEL  Short term exposure limit. A 15 minute time weighted average exposure which should not be exceeded at any time during a workday.

Stressor Potential Hazard (e.g. Noise, Chemicals, Dusts)

TLV  Threshold Limit Value. Established by ACGIH as levels of airborne contaminants or physical hazards under which it is believed workers may be exposed on a day after day basis without adverse effect.

TWA  Time Weighted Average. A method for averaging varying concentrations over a specified period of time (usually 8 hours).

WC  Work Center

WMP  Workplace Monitoring Program. A program to evaluate workplace health hazards through surveys and exposure measurement.
SECTION I
INTRODUCTION

This department is responsible for provision of specialty store services to military personnel and their dependents.

If an operation has been overlooked or significant changes made which are believed to put personnel at serious risk, the Industrial Hygienist must be contacted to conduct an additional exposure assessment.

REPORT ORGANIZATION

References:  
(a) OPNAVINST 5100.23E, Section 0803.f  
(b) OPNAVINST 5100.23E, Chapter 8, Sections 0803.b and c  
(c) OPNAVINST 5100.23E, Chapter 8, Paragraph 0803.g

Section I - contains the background information associated with this report and the schedule for follow-up surveys.

Section II - addresses the status of the command's occupational health programs through provision of a short overview of each program's status.

Section III - Contains industrial hygiene assessments of specific work areas. These address the status of workplace hazards and required control procedures.

Section IV - contains the results of noise measurement data conducted in support of this survey.

Section V - identifies the occupational health medical surveillance requirements for each work area based on survey findings.

Section VI - details the sampling required by reference (a) to be conducted for OSHA or NAVOSH regulated stressors or stressors which have been found to result in personnel exposures equal to or in excess of the MSAL.

Appendix A - contains the OPNAV 5100/14 forms which are required by reference (b). These forms detail the occupational exposures of employees by work center or functional group.

Appendix B - is a copy of the Change In Operation Notification form, which should be filled out whenever a major operational change occurs. Examples of major changes include:

- Exposure times have changed.  
- New types of equipment are used.  
- New chemical/chemical product usage.  
- New operations are performed.  
- Increase in major chemical usage.  
- Changes in exhaust ventilation.

By returning the completed forms to the Industrial Hygienist, all new operations or workplace changes can be evaluated as required by reference (c).
SURVEY SCHEDULE

In accordance with reference (c), each workplace must be thoroughly evaluated to identify and quantify potential occupational hazards. To document these evaluations, an initial comprehensive (baseline) survey is needed, followed by periodic updated surveys. Reference (c) requires workplaces with recognized potential health hazards to be evaluated annually, and other workplaces to be evaluated periodically. Medical surveillance recommendations and a workplace monitoring plan are developed from the findings of these surveys. Any comments or suggestions regarding these survey schedules should be forwarded to the Industrial Hygienist in your Safety Office. The year of the last survey appears after each work center listing.

WORKPLACE SURVEY SCHEDULE

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<td>Retail Store (2003)</td>
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Change of Operations Notification:

Reference (b) requires an industrial hygiene re-evaluation when workplace changes occur. Please notify the Industrial Hygienist in your Safety Office whenever major changes occur in a workplace. Examples of major changes include:

- Exposure times have changed.
- New types of equipment are used.
- New chemical/chemical product usage.
- New operations are performed.
- Increase in major chemical usage.
- Changes in exhaust ventilation.

A "CHANGE OF OPERATIONS NOTIFICATION" form is provided in Appendix B and can be used for this purpose. Copy the form as needed for your use.
SECTION II

NAVY OCCUPATIONAL SAFETY AND HEALTH

PROGRAM REVIEWS

The following programs are not required to be maintained by the Naval Postgraduate School, Monterey, Exchange Department because these hazards are not present:

- Manmade Vitreous Fiber (MMVF) Control
- Non-Ionizing Radiation Control
- Polychlorinated Biphenyls (PCB’s) Control
- Process Control Ventilation

ASBESTOS CONTROL PROGRAM

References:  (a) 29 CFR 1910.1001
             (b) OPNAVINST 5100.23F, Chapter 17

Asbestos exposure is limited to removal of old brake pads and shoes in the Auto Port. Only new, non-asbestos, organic brake pads and shoes are installed on vehicles. SOPs have been developed to document the variety of required hazard control procedures required by Appendix F of reference (a). Currently, brake replacements are being conducted using the low pressure, wet cleaning method, while brake inspections utilize the aerosol can wet method, where the solvent is allowed to evaporate instead of being wiped off with a rag. Procedures and training requirements of references (a) and (b) are being followed.

BLOODBORNE PATHOGENS CONTROL PROGRAM

References:  (c) 29 CFR 1910.1030(c)(1)
             (d) 29 CFR 1910.1030(c)(1)(iv)
             (e) 29 CFR 1910.1030(d)(3)(ix)
             (f) 29 CFR 1910.1030(g)(2)

Potential exposure to bloodborne pathogens occurs whenever clients are accidentally nicked by the barbers while using scissors or electric clippers. An exposure control plan (ECP) required by reference (c) has been developed by the Industrial Hygienist, and is currently being reviewed by the Barber Shop supervisor and the departmental safety coordinator. The ECP must be reviewed annually to determine if an update is necessary as outlined in reference (d). The Industrial Hygienist is helping the departmental coordinator in obtaining latex or similar material gloves and red biohazard bags for disposal of contaminated items as required by reference (e). The departmental safety coordinator was provided a copy of the NPS Safety Coordinator so Barber Shop personnel can be scheduled for annual hazards training as required by reference (f).
ERGONOMICS PROGRAM

Potential hazards involve heavy lifting in the Auto Port while mounting and
dismounting vehicle wheels and tires, and moving heavy pallets and containers
in the Retail Store. Manual transfer of used motor oil from 5 gallon cans to
55 gallon drums has been replaced by a pressurized system. A review of injury
logs indicates the absence of recent occupational injuries in this department.
Back injury prevention training has been provided to workers performing heavy
lifting. Ensure that all new personnel who will be required to perform heavy
lifting are provided back injury prevention training.

HAZARDOUS MATERIALS CONTROL PROGRAM

References:  (g) OPNAVINST 5100.23F, Chapter 7, paragraph 0702f(2)
            (h) OPNAVINST 5100.23F, Chapter 7, paragraph 0702f(3)

Great improvement has been made with this program since the previous survey.
Authorized hazardous materials use and inventory lists have been developed as
required by references (g) and (h). Missing MSDSs identified in the previous
survey report were obtained and available for review. The departmental safety
coordinator will be performing the annual update to the inventory list with
the assistance of the NPS Code 223 Hazardous Materials Program Manager.

HEARING CONSERVATION PROGRAM

Significant noise exposure is limited to Auto Port mechanics’ use of pneumatic
impact wrenches and tire mounting/dismounting equipment, and during vehicle
smog check inspections. Exposures are being controlled by use of hearing
protection.

LEAD CONTROL PROGRAM

Exposure to lead is limited to use of lead counterweights during tire
balancing in the Auto Port. The anti-seize compound used by the mechanics is
copper- rather than lead-based. Since minimal exposure is expected, most of
the requirements of the Navy’s Lead Control Program are unnecessary. The Auto
Center manager was provided a copy of Appendices A and B from the Federal Lead
Standard during this survey.

REPRODUCTIVE HAZARDS CONTROL PROGRAM

References:  (i) OPNAVINST 5100.23F, Chapter 29

Materials that contain reproductive hazards, as defined by Appendix 29-A of
reference (i), are limited to lead present in tire counterweights, toluene
present in carburetor cleaner and tire patching chemicals, and carbon monoxide
from vehicle exhaust during smog check tests at the Auto Port.

The former departmental safety coordinator and the Code 223 Hazardous
Materials Control and Management Coordinator reported a search for toluene-
free carburetor cleaner, but a feasible substitute is not available.
REPRODUCTIVE HAZARDS CONTROL PROGRAM (con’d)

In order to properly control reproductive hazards in the workplace, employees are encouraged to:

- Inform the supervisor as soon as possible that they are pregnant, completely fill out the questionnaire provided by reference (j), and request a comprehensive evaluation by the occupational health provider (from the Presidio of Monterey medical clinic) and the local Industrial Hygienist.

- Follow all recommendations from the occupational health provider and Industrial Hygienist regarding exposure to reproductive hazards in the workplace.

RESPIRATORY PROTECTION PROGRAM

References:  
(k) OPNAVINST 5100.23F, Chapter 15  
(l) 29 CFR 1910.134  
(m) OPNAVINST 5100.23F, Chapter 15, paragraph 1513a(2)  
(n) OPNAVINST 5100.23F, Chapter 15, section 1511

Respiratory protection use is limited to Auto Port personnel during vehicle brake work. Personnel wear respirators on an elective basis, and are properly medically qualified, trained, and fit-tested to do so. Respirator use is complying with the other requirements of references (k) and (l). Asbestos brake SOPS address proper use of respirators as required by reference (m). The departmental safety coordinator is in the process of scheduling the Auto Port Manager for respirator training required by reference (n).
SECTION III

INDUSTRIAL HYGIENE ASSESSMENTS
INDUSTRIAL HYGIENE ASSESSMENT

ACTIVITY: NPS Monterey FILE NO.: ET-0204 DATE: 18 April 2003

DEPARTMENT: Exchange, Auto Port POCs: Art Reynolds, Dave Cohen

LOCATION: Bldg 348 IND. HYG: Eric Thurston

FUNCTION: Provides retail sale of gasoline, oil and auto parts. The garage performs a variety of service operations, including brake inspection and replacement, oil changes, parts and battery replacement, tuneups, smog checks, tire balancing, recharging air conditioning systems, and tire repair. An electric-powered forklift is occasionally used to move pallets of supplies. The self-contained degreasing machine has been disconnected and is no longer in use.

INDUSTRIAL HYGIENE ASSESSMENT

The following operations potentially expose personnel to hazardous occupational stressors:

1. Noise during use of pneumatic impact wrenches.
2. Noise during use of tire mounting and dismounting equipment.

Exposure during both operations is controlled by use of banded ear plugs.

The following operations will not expose personnel to hazardous occupational stressors in excess of established health standards:

3. Asbestos and manmade fibers during brake work. Monitoring data of this operation, traceable to Industrial Hygiene Surveys ET-0034 and ET-0070 indicates exposures during brake inspection are controlled if the aerosol can wet method is used. Monitoring data collected during brake replacements, traceable to Industrial Hygiene Surveys ET-ET-0124 and ET-0167, using the low pressure, wet method involving the solvent hose and catch basin also indicates that exposures are similarly controlled. Some personnel also wear respirators on an elective basis to further control exposures.
4. Solvents during use of brake cleaning solvents during the above vehicle brake operations. Significant exposure is unlikely based on minimal usage.
5. Auto service chemicals during fluid addition and changing, and spraying. Significant exposure is unlikely based on low toxicity and minimal usage of chemicals.
6. Lead during balancing of tires with lead counterweights. Significant exposure is unlikely, provided workers observe required personal hygiene procedures, because the weights are handled intact, with no dust or fumes being created.
7. Freons R12 and 134a during recharging of vehicle air conditioning systems. Significant exposure is unlikely because a Freon recovery system is used.
8. Toluene, methylene chloride, and other solvents during use of Chemtool B-12 Carburetor Cleaner or Gunk Carb Medic Carburetor, Choke, and Valve Cleaner. Significant exposure is not expected based on minimal time of exposure.
9. Ergonomics during tire mounting and dismounting. No injuries have occurred from this heavy lifting, and personnel have received back injury prevention training.
INDUSTRIAL HYGIENE ASSESSMENT (con’d)

ACTIVITY: NPS Monterey FILE NO.: ET-0204 DATE: 18 April 2003

DEPARTMENT: Exchange, Auto Center POCs: Art Reynolds, Dave Cohen

LOCATION: Bldg 348 IND. HYG: Eric Thurston

The following operations will not expose personnel to hazardous occupational stressors in excess of established health standards (con’d):

10. Toluene, methylene chloride, and aliphatic naphtha during use of chemical compounds during tire patching. Significant exposures are unlikely based on minimal time of exposure, minimal usage, and minimal (less than 1%) presence of toluene in NAPA/Camel products. Monitoring data, traceable to Industrial Hygiene Survey ET-0126, of a tire patching job performed using NAPA/Camel Tire Repair Universal Cement, Boot Cement and Liquid Buffer Tire Repair indicated insignificant airborne methylene chloride exposures. The NAPA/Camel products are being replaced by use of Tech International Products Fast Dry Chemical Vulcanizing Fluid (cement) and buffing liquid, which only contain aliphatic naphtha as hazardous ingredients.

11. Carbon monoxide during vehicle smog check inspections. Calculated noise exposures generated by vehicle operation during this job are minimal based on measured noise levels and duration of exposure. The test station is located near the garage bay entrance, where carbon monoxide levels would be diluted to insignificant levels by mixing with outdoor air.

The following operations potentially expose personnel to stressors identified by OPNAVINST 5100.23E, Chapter 29, Appendix 29-A as reproductive hazards:

6. Lead, which is a male, female, and developmental reproductive hazard, during use of lead counterweights.

8,10. Toluene, which is a developmental reproductive hazard, during use of the Chemtool B12 carburetor cleaner, Gunk Carb Medic Carburetor, Choke, and Valve Cleaner, and NAPA/Camel Tire tire patching chemicals.

11. Carbon monoxide during vehicle smog check inspections.

Exposures are expected to be minimal as discussed above. Personnel who wish reproductive hazards counseling should contact the occupational health department of the Presidio of Monterey Army Clinic.

RECOMMENDATIONS:

1. Continue to wear hearing protection during use of pneumatic impact wrenches and tire mounting/dismounting equipment, and during vehicle smog check inspections, as required by reference (a).

2. Ensure that the mechanics continue to wash their hands and face after use of lead counterweights and before eating, drinking, smoking, chewing, or applying makeup or lip balm as required by reference (b).

REFERENCES / NOTES:

(a) OPNAVINST 5100.23F, Chapter 18, paragraph 1807a
(b) OPNAVINST 5100.23F, Chapter 21, paragraph 2104f(4)

FINDINGS: None.
INDUSTRIAL HYGIENE ASSESSMENT

ACTIVITY: NPS Monterey FILE NO.: ET-0233 DATE: 16 April 2003
DEPARTMENT: Exchange, Barber Shop POC: Dave Cohen
LOCATION: Bldg 303 IND. HYG: Eric Thurston

FUNCTION:

Provides men’s hair cutting services.

The following operation potentially exposes personnel to hazardous occupational stressors:

1. Bloodborne pathogens when clients are accidentally nicked by scissors or electric clippers. A bloodborne pathogens control program is being set up to protect against exposure.

The following operations will not expose personnel to hazardous occupational stressors in excess of established health standards:

2. Use of disinfectant to sterilize combs and scissors. Significant exposure is unlikely based on low usage rate and dilute solutions used.
3. Noise during use of electric clippers. The measured noise level for the operator is insignificant. Clients are provided disposable ear plugs if requested to reduce their noise levels.

There are no operations that potentially expose personnel to stressors identified by OPNAVINST 5100.23F, Chapter 29, Appendix 29-A as reproductive hazards.

RECOMMENDATIONS: None.

FINDINGS: None.
INDUSTRIAL HYGIENE ASSESSMENT

ACTIVITY: NPS Monterey FILE NO.: ET-0233 DATE: 16 April 2003

DEPARTMENT: Exchange, Beauty Shop POC: Dave Cohen

LOCATION: Bldg 303 IND. HYG: Eric Thurston

FUNCTION: A variety of different chemical products are used during provision of a variety of beautician services, including coloring and bleaching of hair.

INDUSTRIAL HYGIENE ASSESSMENT

There are no operations that potentially expose personnel to hazardous occupational stressors.

The following operations will not expose personnel to hazardous occupational stressors in excess of established health standards:

Ethyl and isopropyl alcohols, hydrogen peroxide, and ethanolamine during use of a variety of chemical products. Significant exposure is unlikely based on low usage rate of low toxicity products.

There are no operations that potentially expose personnel to stressors identified by OPNAVINST 5100.23F, Chapter 29, Appendix 29-A as reproductive hazards.

RECOMMENDATIONS: None.

FINDINGS: None.
INDUSTRIAL HYGIENE ASSESSMENT

ACTIVITY: NPS Monterey         FILE NO.: ET-0233       DATE: 16 April 2003
DEPARTMENT: Exchange, Uniform/Tailor Shop    POC: Dave Cohen
LOCATION: Bldg 303             IND. HYG: Eric Thurston
FUNCTION: Accepts clothing from customers and sends them to a contracted company off station for dry cleaning. Employees also collect payment for dry cleaning services and conduct minor tailoring, alterations, and repairs using 3 sewing machines. Military uniforms and related items are sold here. Since the previous survey, this shop has been moved into the main part of the store building.

INDUSTRIAL HYGIENE ASSESSMENT

There are no operations that potentially expose personnel to hazardous occupational stressors.

The following operations will not expose personnel to hazardous occupational stressors in excess of established health standards:

Noise during use of the sewing machines. The measured noise levels of the machines are far below the Navy noise criterion level of 84 dBA.

There are no operations that potentially expose personnel to stressors identified by OPNAVINST 5100.23F, Chapter 29, Appendix 29-A as reproductive hazards.

RECOMMENDATIONS: None.

FINDINGS: None.
INDUSTRIAL HYGIENE ASSESSMENT

ACTIVITY: NPS Monterey FILE NO.: ET-0233 DATE: 16 April 2003

DEPARTMENT: Exchange, Mini Mart POC: Dave Cohen

LOCATION: La Mesa Village IND. HYG: Eric Thurston

FUNCTION: Retail sales of food and snack items. Involves cashiering and stocking shelves.

INDUSTRIAL HYGIENE ASSESSMENT

There are no operations that potentially expose personnel to hazardous occupational stressors.

The following operations will not expose personnel to hazardous occupational stressors in excess of established health standards:

Ergonomics during heavy lifting. No injuries have occurred, and personnel have received back injury prevention training.

There are no operations that potentially expose personnel to stressors identified by OPNAVINST 5100.23F, Chapter 29, Appendix 29-A as reproductive hazards.

RECOMMENDATIONS: None.

FINDINGS: None.
INDUSTRIAL HYGIENE ASSESSMENT

ACTIVITY: NPS Monterey               FILE NO.: ET-0233              DATE: 16 April 2003
DEPARTMENT: Exchange, Optical Shop    POC: Dave Cohen
LOCATION: Bldg 303                        IND. HYG: Eric Thurston

FUNCTION: Customers order prescription eyeglasses, which are provided by a contractor company. Glasses are cleaned using a non-toxic cleaning solution. Hydrogen peroxide or rubbing alcohol is used for self first aid in cases where employees accidentally stab themselves with jeweler's screwdrivers during glasses adjustments.

INDUSTRIAL HYGIENE ASSESSMENT

There are no operations that potentially expose personnel to hazardous occupational stressors.

The following operations will not expose personnel to hazardous occupational stressors in excess of established health standards:

Hydrogen peroxide and rubbing alcohol during provision of self first aid. Significant exposures are unlikely based on low usage rates of low toxicity products.

There are no operations that potentially expose personnel to stressors identified by OPNAVINST 5100.23F, Chapter 29, Appendix 29-A as reproductive hazards.

RECOMMENDATIONS: None.

FINDINGS: None.
INDUSTRIAL HYGIENE ASSESSMENT

ACTIVITY: NPS Monterey FILE NO.: ET-0233 DATE: 18 April 2003

DEPARTMENT: Exchange, Vending POC: Art Reynolds

LOCATION: Bldg 303 IND. HYG: Eric Thurston

FUNCTION: Restocks and collects monies from snack and Gatorade dispensing machines located throughout the campus. Moves boxes and crates using a dolly. Minor maintenance on machines, including application of lubricating oil to machine gears, is no longer performed.

INDUSTRIAL HYGIENE ASSESSMENT

There are no operations that potentially expose personnel to hazardous occupational stressors.

The following operations will not expose personnel to hazardous occupational stressors in excess of established health standards:

Ergonomics during heavy lifting. No injuries have occurred and the worker has received back injury prevention training.

There are no operations that potentially expose personnel to stressors identified by OPNAVINST 5100.23E, Chapter 29, Appendix 29-A as reproductive hazards.

RECOMMENDATIONS: None.

FINDINGS: None.
INDUSTRIAL HYGIENE ASSESSMENT

ACTIVITY: NPS Monterey FILE NO.: ET-0233 DATE: 16 April 2003

DEPARTMENT: Exchange, Retail Store POC: Dave Cohen

LOCATION: Building 303 IND. HYG: Eric Thurston

FUNCTION: The retail store department consists of the main retail store building, receiving area, customer service, warehouse, book/shoe warehouse, personalized services (gift shop), mini mart, and liquor store. Since the previous survey, the garden shop has been eliminated and the personalized services (gift) shop has been merged into the customer service shop. Employees conduct retail sales of goods. The warehouse performs lifting of heavy containers, where hydraulic pallet jacks and assistance from other workers are used. Some items in the warehouse are also moved using an electric forklift. One person in the receiving office uses a desktop computer to track inventory.

INDUSTRIAL HYGIENE ASSESSMENT

There are no operations that potentially expose personnel to hazardous occupational stressors.

The following operations will not expose personnel to hazardous occupational stressors in excess of established health standards:

1. Ergonomics during heavy lifting in the warehouse. No injuries have occurred and personnel have received back injury prevention training.

2. Ergonomics during use of a desktop computer in the receiving office. No injuries have occurred from its intermittent use.

There are no operations that potentially expose personnel to stressors identified by OPNAVINST 5100.23F, Chapter 29, Appendix 29-A as reproductive hazards.

RECOMMENDATIONS: None.

FINDINGS: None.
No noise measurements were collected in support of this survey. It should be noted that any noise levels measured are then compared to the standards without regard to any personal protective equipment that may be worn or the protection afforded by it. The goal of the NAVOSH Program is to reduce workplace hazard levels by other means so that use of personal hearing protective devices is not required.

Documentation concerning the types of instruments used and their calibration records are held by the Naval Medical Admin Unit, Monterey Bay Industrial Hygienist.

No new data was collected in support of this survey.
SECTION V

MEDICAL SURVEILLANCE MATRIX

The Medical Surveillance Matrix is provided to assist commands in assigning personnel to required medical surveillance. Medical surveillance for exposure to chemical agents by a work group must be based on exposure levels at or above the MSAL and exposure frequency of ten days per quarter or thirty days per year or as required by regulations or instruction.

Only a preplacement examination is needed for barbers enrolled in the Health Code 723 program; unless necessary for local reasons, there is no requirement for periodic examinations for personnel enrolled in this program.
<table>
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<th>NOHIMS CODE</th>
<th>EXAM</th>
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<th>Auto Center forklift operator</th>
<th>Barbers</th>
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</tr>
<tr>
<td>508</td>
<td>HAND-ARM VIBRATION</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>505</td>
<td>IONIZING RADIATION</td>
<td></td>
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<tr>
<td>506</td>
<td>LASER RADIATION-CLASS IIIb or IV</td>
<td></td>
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<tr>
<td>161</td>
<td>LEAD (INORGANIC)</td>
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<tr>
<td>162</td>
<td>MACHINE OIL MIST/CUTTING FLUID</td>
<td></td>
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<tr>
<td>212</td>
<td>MANMADE MINERAL FIBERS/FIBERGLASS</td>
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<td>602</td>
<td>METAL FUMES</td>
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<td>168</td>
<td>METHYLENE CHLORIDE</td>
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<tr>
<td>503</td>
<td>NOISE</td>
<td></td>
<td></td>
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<tr>
<td>507</td>
<td>RADIOFREQUENCY &amp; MICROWAVE RADIATION</td>
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<tr>
<td>603</td>
<td>MIXED SOLVENTS</td>
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<tr>
<td>511</td>
<td>WHOLE BODY VIBRATION</td>
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<tr>
<td>604</td>
<td>WOOD DUST</td>
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</tr>
<tr>
<td>723</td>
<td>BARBER/BEAUTY SHOP WORKER</td>
<td></td>
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<td>X</td>
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</tr>
<tr>
<td>703</td>
<td>CHILD CARE WORKER</td>
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<tr>
<td>706</td>
<td>DOT VEHICLE OPERATOR</td>
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<tr>
<td>722</td>
<td>FIREFIGHTER, ANNUAL EXAM</td>
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<tr>
<td>707</td>
<td>FIREFIGHTER, PREPLACEMENT AND PERIODIC EXAMS</td>
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<td>709</td>
<td>FOOD SERVICE PERSONNEL</td>
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<tr>
<td>710</td>
<td>FORKLIFT OPERATOR</td>
<td></td>
<td></td>
<td>X</td>
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<tr>
<td>711</td>
<td>HAZARDOUS WASTE WORKER/SPILL RESPONSE</td>
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<tr>
<td>714</td>
<td>POLICE/SECURITY GUARD</td>
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<tr>
<td>716</td>
<td>RESPIRATOR USER CERTIFICATION EXAM</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
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<tr>
<td>702</td>
<td>WASTEWATER/SEWAGE WORKER</td>
<td></td>
<td></td>
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<td>OTHER:</td>
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<td>OTHER:</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NONE REQUIRED</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
SECTION VI

WORKPLACE MONITORING PROGRAM

The attached Workplace Monitoring Plan presents stressors and/or systems which need to be evaluated periodically during the coming year. Items included on the plan are based on regulations, professional knowledge and information obtained from supervisors. The plan should be reviewed to ensure operational information is correct. The industrial hygienist will have to be contacted when operations are scheduled so your Command's sampling can be completed. Changes or deletions of operations should also be communicated to the industrial hygienist so that the Workplace Monitoring Plan can be amended.

Naval Postgraduate School, Monterey
Exchange Department

WORKPLACE MONITORING PLAN

April 2003

<table>
<thead>
<tr>
<th>LOCATION/JOB</th>
<th>STRESSOR</th>
<th>REQUIRED</th>
<th>MEAS.</th>
<th>METHOD</th>
<th>FREQUENCY</th>
<th>MEASURING MAN HRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>None required.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


1: Use the following codes to indicate sampler and sampling location:

**SAMPLER:**
DR-direct reading instrument  
DT-detector tube  
AT-adsorption tube  
IM-impinger/bubbler  
FI-filter  
ND-noise dosimeter  
PD-personal dosimeter  
OT-other (specify)

**SAMPLING LOCATION:**
GA-general area  
BZ-breathing zone  
HZ-hearing zone  
SZ-source zone  
OT-other (specify)
APPENDIX A

OPNAV 5100/14 Forms

Reference:  (a) OPNAVINST 5100.23E, paragraph 0803.f

This appendix contains the OPNAV 5100/14 forms which are required by reference (a). These forms detail the occupational exposures of employees by work center or functional group. These forms are used to develop the workplace monitoring program in Section VI. They also describe the type of work done in each area and can be used to verify that all work areas were included in the survey.
## WORKPLACE INFORMATION

**Activity:** NPS Monterey  
**Supervisor:** Art Reynolds  
**Phone:** (831)373-7271

**Bldg#:** 348  
**Shop:** Exchange, Auto Port

**Total Personnel:** 10  
**Male:** 10  
**Female:** 0

Personnel include 3 mechanics, 1 mechanic helper, 3 cashiers, 2 service representatives, and 1 manager.

### Shop Operations:
Retail sale of gasoline, oil and auto parts. Automotive brake inspection and replacement following the required low pressure wet method while using aerosols cans of brake cleaning solvents, which are applied during brake parts inspection, removal and reassembly; removal of these parts can also include use of the low pressure hose and catch basin wet method. Degrease parts in a self-contained, water-based degreasing unit. Use of pneumatic impact wrenches for various procedures. Automotive repair operations including oil changes, parts and battery replacement, tuneups, and smog checks. Tire balancing using preformed lead counterweights. Recharge air conditioning systems with Freons R12 and 134a. Clean vehicle carburetors with aerosol carburetor cleaner, and add fuel injector cleaner to vehicles. Tire mounting and dismounting. Patching tires using tire cement and liquid buffing compound; the NAPA/Camel products are being replaced by Tech International Fast Dry Chemical Vulcanizing Fluid (cement) and buffing liquid. Operation of an electric-powered forklift to move pallets of supplies.

<table>
<thead>
<tr>
<th>Potential Hazard</th>
<th>Inter or Cont.</th>
<th># Workers Exposed</th>
<th>&gt; MSAL?</th>
<th>Controls in Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asbestos, manmade fibers, brake cleaning solvents, brake work</td>
<td>8-10 times/week, 2 ½ hrs/time, 4-5 16-ounce aerosol cans/week</td>
<td>3</td>
<td>No</td>
<td>Low pressure solvent pump and catch basin for brake replacement, aerosol solvent can for brake inspection, elective use of ½ mask respirators equipped with HEPA filter cartridges, thin nitrile rubber gloves</td>
</tr>
<tr>
<td>Noise, pneumatic impact wrenches</td>
<td>Daily, 2 hours</td>
<td>3</td>
<td>Yes</td>
<td>Banded ear plugs</td>
</tr>
<tr>
<td>Auto service chemicals, fluid addition and changing, or spraying</td>
<td>Daily, 4-5 hrs, intermittent</td>
<td>3</td>
<td>No</td>
<td>Thin nitrile rubber gloves</td>
</tr>
<tr>
<td>*Lead, tire balancing</td>
<td>8-10 times/week, 45 mins/day</td>
<td>1 primary, 3 others occasionally</td>
<td>No</td>
<td>Thin nitrile rubber gloves</td>
</tr>
<tr>
<td>* Reproductive hazard (See I. H. assessment)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

25
<table>
<thead>
<tr>
<th>Potential Hazard</th>
<th>Inter or Cont.</th>
<th># Workers</th>
<th>Exposure</th>
<th>&gt; MSAL?</th>
<th>Controls in Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freon R12, Freon 134a, recharging vehicle A/C systems</td>
<td>2 times/day, (summer), Once/week (winter), 40 mins/time, 60 lbs R12/year, 60 lbs 134a/year</td>
<td>1</td>
<td>No</td>
<td>Freon recovery system</td>
<td></td>
</tr>
<tr>
<td>*Toluene, methylene chloride, carburetor cleaners</td>
<td>Once/week, 5 mins/time</td>
<td>3</td>
<td>No</td>
<td>Thin nitrile rubber gloves</td>
<td></td>
</tr>
<tr>
<td>Noise, ergonomics, tire mounting/dismounting with pneumatic impact wrenches</td>
<td>Daily, 2-5 hrs intermittent</td>
<td>4</td>
<td>Yes</td>
<td>Banded ear plugs</td>
<td></td>
</tr>
<tr>
<td>Tire patching:</td>
<td>3-4 times/week</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*Toluene, methylene chloride, NAPA/Camel Tire Repair Universal or Boot Cement and Liquid Buffer</td>
<td>10 mins, 1 8-oz can of cement and 1 pint canz of liquid buffer</td>
<td>No</td>
<td>Thin nitrile rubber gloves</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aliphatic naphtha, Tech International, Tech Rub-O-Matic and Tech Chemical Vulcanizing Fluid</td>
<td></td>
<td>No</td>
<td>Same as above</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Noise, use of pneumatic disc sander during tire patching operations</td>
<td></td>
<td>No</td>
<td>Banded ear plugs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*Carbon monoxide, noise, smog check tests</td>
<td>6 times/day, 30 mins/time</td>
<td>1</td>
<td>No</td>
<td>Banded ear plugs</td>
<td></td>
</tr>
<tr>
<td>* Reproductive hazard (See I. H. assessment)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
If no exposure > MSAL, provide rationale:

Retail sale operations conducted by employees will not expose them to harmful chemical stressors or noise hazards. Asbestos and manmade fiber exposures are unlikely to exceed the PELs and MSALS based on monitoring data of the operation using wet methods. Chemical exposures while using brake cleaning solvents during brake work are unlikely to exceed the PELs and MSALS based on minimal usage. Use of low toxicity chemicals in limited quantities during auto servicing will not produce exposures in excess of the PELs and MSALS, provided the manufacturer's instructions are followed. Lead exposure during the handling of wheel counterweights will not exceed the MSAL because dust or fumes by grinding or heating is not produced; exposure to lead by skin contact will be prevented by personnel following required personal hygiene procedures. Freons R12 and R134a exposures above the MSALS are unlikely because a Freon recovery system is used during this process. Toluene, methylene chloride, and other solvent exposures during use of carburetor cleaners are unlikely to exceed the MSALS and PELs based on minimal time of exposure. Ergonomics during tire mounting/dismounting: no injuries have occurred, and personnel have received back injury prevention training. Toluene, methylene chloride, and aliphatic naphtha exposures are unlikely to exceed the MSALS and PELs during tire patching based on minimal time of exposure, minimal usage, and minimal (less than 1%) presence of toluene; monitoring data of this operation indicates methylene chloride exposures are below both the PEL-TWA and PEL-STEL. The calculated noise exposures during smog check inspections and during tire buffing will not exceed the NPEL based on measured noise levels and duration of exposure. Carbon monoxide exposure during smog check tests is not expected to exceed the MSAL and PEL-Ceiling based on the presence of the test station next to the bay entrance, where levels would be diluted by outdoor air.

Signature/Title:  
S.E. Thurston,  
Industrial Hygienist

Date: 18 April 2003

MONITORING PLAN

<table>
<thead>
<tr>
<th>Stressor to be Sampled</th>
<th># of Meas. Required</th>
<th>* Measure. Method</th>
<th>**Measure. Location</th>
<th>Frequency per Yr.</th>
<th>Man Hrs. per Yr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Engineering Controls in Use

Solvent wetting brake shoes and pads prior to replacement.

* Use the following Codes:  ** Use the following Codes:
DR-direct reading instrument  GA-general area
DT-detector tube  BZ-breathing zone
AT-adsorption tube  HZ-hearing zone
IM-impinger/bubbler  SZ-source zone
FI-filter  OT-other (specify)
PD-personal dosimeter
ND-noise dosimeter
OT-other (specify)
**WORKPLACE INFORMATION**

**Activity:** NPS Monterey  
**Supervisor:** Simon Lupton  
**Phone:** (831)375-5958  

**Bldg#:** 303  
**Shop:** Barber Shop  

**Total Personnel:** 4  
**Male:** 1  
**Female:** 3  

**Shop Operation:** Performs men’s hair cutting.

<table>
<thead>
<tr>
<th>Potential Hazard</th>
<th>Inter or Cont.</th>
<th># Workers Exposed</th>
<th>Exposure &gt; MSAL?</th>
<th>Controls in Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogen peroxide, isopropanol, disinfectant for combs and scissors</td>
<td>3-4 ozs/month</td>
<td>4</td>
<td>No</td>
<td>None</td>
</tr>
<tr>
<td>Noise, electric clippers</td>
<td>Daily, 2 hrs</td>
<td>4</td>
<td>No</td>
<td>None</td>
</tr>
<tr>
<td>Bloodborne pathogens</td>
<td>Unplanned event</td>
<td>4</td>
<td>N/A</td>
<td>Latex gloves</td>
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</table>

* Reproductive hazard (See I. H. assessment)

If no exposure > MSAL, provide rationale:
Exposures are unlikely to exceed the MSALs due to low usage rate and low concentrations of chemicals in disinfectant solution, which is diluted 1:1 with water before use. The measured noise levels of the electric clippers do not exceed the Navy noise criterion of 84 dBA at the operators’ hearing zones.

**Signature/Title:**  
S.E. Thurston,  
Industrial Hygienist  
**Date:** 16 April 2003

**MONITORING PLAN**

<table>
<thead>
<tr>
<th>Stresor to be Sampled</th>
<th># of Meas. Required</th>
<th>* Measure. Method</th>
<th>**Measure. Location</th>
<th>Frequency per Yr.</th>
<th>Man Hrs. per. Yr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
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</table>

**Engineering Controls in Use**

<table>
<thead>
<tr>
<th>None</th>
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</thead>
</table>

* Use the following Codes:  
DR-direct reading instrument  
DT-detector tube  
AT-adsorption tube  
IM-impinger/bubbler  
FI-filter  
Pd-personal dosimeter  
ND-noise dosimeter  
OT-other (specify)

**Use the following Codes:**  
GA-general area  
BZ-breathing zone  
HZ-hearing zone  
SZ-source zone  
OT-other (specify)
WORKPLACE INFORMATION

Activity: NPS Monterey  Supervisor: Simon Lupton  Phone: (831)375-5958

Bldg#: 303  Shop: Beauty Shop

Total Personnel: 2  Male: 0  Female: 2

Shop Operation: A variety of different chemical products are used during provision of a variety of beautician services, including coloring and bleaching of hair.

<table>
<thead>
<tr>
<th>Potential Hazard</th>
<th>Inter or Cont.</th>
<th># Workers</th>
<th>Exposure</th>
<th>&gt; MSAL?</th>
<th>Controls in Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogen peroxide, ethanolamine, ethyl and isopropyl alcohols</td>
<td>Usage varies by product</td>
<td>2</td>
<td>No</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>* Reproductive hazard (See I. H. assessment)</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

If no exposure > MSAL, provide rationale:
Exposures are unlikely to exceed the MSALs due to low usage rate for minimal toxicity chemical products.

Signature/Title: S.E. Thurston, Industrial Hygienist  Date: 16 April 2003

MONITORING PLAN

<table>
<thead>
<tr>
<th>Stressor to be Sampled</th>
<th># of Meas. Required</th>
<th>* Measure. Method</th>
<th>**Measure. Location</th>
<th>Frequency per Yr.</th>
<th>Man Hrs. per Yr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
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</tr>
</tbody>
</table>

Engineering Controls in Use

None

* Use the following Codes:
  DR-direct reading instrument
  DT-detector tube
  AT-adsorption tube
  IM-impinger/bubbler
  FI-filter
  PD-personal dosimeter
  ND-noise dosimeter
  OT-other (specify)

** Use the following Codes:
  GA-general area
  BZ-breathing zone
  HZ-hearing zone
  SZ-source zone
  OT-other (specify)
WORKPLACE INFORMATION

Activity: NPS Monterey
Supervisor: Simon Lupton
Phone: (831)375-5958

Bldg#: 303
Shop: Uniform/Tailor Shop

Total Personnel: 1 Male: 0 Female: 1

Shop Operation: Accepts clothing from customers and sends them to a contracted company off station for dry cleaning. Employees also collect payment for dry cleaning services and conduct minor tailoring, alterations, and repairs using 3 sewing machines. Military uniforms and related items are sold here.

Potential Hazard | Inter or Cont. | # Workers | Exposure | Controls in Use
--- | --- | --- | --- | ---
Noise, sewing machines | Daily, 2 hours | 1 | No | None

* Reproductive hazard (See I. H. assessment)

If no exposure > MSAL, provide rationale: The measured noise levels of the sewing machines are below the Navy noise criterion level of 84 dBA.

Signature/Title: S.E. Thurston,
Industrial Hygienist
Date: 16 April 2003

MONITORING PLAN

Stressor to be Sampled | # of Meas. Required | * Measure. Method | **Measure. Location | Frequency per Yr. | Man Hrs. per Yr.
--- | --- | --- | --- | --- | ---
None

Engineering Controls in Use

None

* Use the following Codes: DR-direct reading instrument
DT-detector tube
AT-adsorption tube
IM-impinger/bubbler
FI-filter
PD-personal dosimeter
ND-noise dosimeter
OT-other (specify)

** Use the following Codes: GA-general area
BZ-breathing zone
HZ-hearing zone
SZ-source zone
OTOTHER (specify)
WORKPLACE INFORMATION

Activity: NPS Monterey  Supervisor: Simon Lupton  Phone: (831)375-5958
Bldg#: La Mesa Village  Shop: Mini Mart
Total Personnel: 5  Male: 2  Female: 3

Shop Operation: Retail sales of food and snack items. Involves cashiering and stocking shelves.

<table>
<thead>
<tr>
<th>Potential Hazard</th>
<th>Inter or Cont.</th>
<th># Workers Exposed</th>
<th>Exposure &gt; MSAL?</th>
<th>Controls in Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ergonomics, heavy lifting</td>
<td>Daily, varies</td>
<td>5</td>
<td>No</td>
<td>None</td>
</tr>
<tr>
<td>* Reproductive hazard</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(See I. H. assessment)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If no exposure > MSAL, provide rationale: No injuries have occurred and personnel have received back injury prevention training.

Signature/Title: S.E. Thurston, Industrial Hygienist  Date: 27 May 1999

MONITORING PLAN

<table>
<thead>
<tr>
<th>Stressor to be Sampled</th>
<th># of Meas. Required</th>
<th>* Measure. Method</th>
<th>**Measure. Location</th>
<th>Frequency per Yr.</th>
<th>Man Hrs. per Yr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Engineering Controls in Use

None

* Use the following Codes:
  DR-direct reading instrument
  DT-detector tube
  AT-adsorption tube
  IM-impinger/bubbler
  FI-filter
  PD-personal dosimeter
  ND-noise dosimeter
  OT-other (specify)

** Use the following Codes:
  GA-general area
  BZ-breathing zone
  HZ-hearing zone
  SZ-source zone
  OT-other (specify)
## WORKPLACE INFORMATION

**Activity:** NPS Monterey  
**Supervisor:** Simon Lupton  
**Phone:** (831)375-5958

**Bldg#:** 303  
**Shop:** Optical Shop

**Total Personnel:** 2  
**Male:** 0  
**Female:** 2

**Shop Operation:** Customers order prescription lenses to be placed in frames by a contractor company. Glasses are cleaned using a non-toxic cleaning solution. Hydrogen peroxide or rubbing alcohol is used for self first aid in cases where employees accidentally stab themselves with jewelmaker screwdrivers during glasses adjustments.

<table>
<thead>
<tr>
<th>Potential Hazard</th>
<th>Inter or Cont.</th>
<th># Workers Exposed</th>
<th>Exposure &gt; MSAL?</th>
<th>Controls in Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrogen peroxide, rubbing alcohol, cleaning glasses</td>
<td>less than 2 ounces/month</td>
<td>2</td>
<td>No</td>
<td>None</td>
</tr>
</tbody>
</table>

* Reproductive hazard (See I. H. assessment)

If no exposure > MSAL, provide rationale:
Low usage rate will not expose personnel to exposure above the MSALs or PELs for low toxicity chemicals.

**Signature/Title:**  
S.E. Thurston,  
Industrial Hygienist  
**Date:** 16 April 2003

## MONITORING PLAN

<table>
<thead>
<tr>
<th>Stressor to be Sampled</th>
<th># of Meas. Required</th>
<th>* Measure. Method</th>
<th>**Measure. Location</th>
<th>Frequency per Yr.</th>
<th>Man Hrs. per Yr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td></td>
<td></td>
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<td></td>
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</tbody>
</table>

**Engineering Controls in Use**

None

* Use the following Codes:  
DR-direct reading instrument  
DT-detector tube  
AT-adsorption tube  
IM-impinger/bubbler  
FI-filter  
PD-personal dosimeter  
ND-noise dosimeter  
OT-other (specify)

** Use the following Codes:  
GA-general area  
BZ-breathing zone  
HZ-hearing zone  
SZ-source zone  
OT-other (specify)
**WORKPLACE INFORMATION**

**Activity:** NPS Monterey  
**Supervisor:** Art Reynolds  
**Phone:** (831)375-5958

**Bldg#:** 303  
**Shop:** Vending

**Total Personnel:** 1  
**Male:** 1  
**Female:** 0

**Shop Operation:** Restocks and collects monies from snack and Gatorade dispensing machines located throughout the campus. Moves boxes and crates using a dolly.

<table>
<thead>
<tr>
<th>Potential Hazard</th>
<th>Inter or Cont.</th>
<th># Workers</th>
<th>Exposure &gt; MSAL?</th>
<th>Controls in Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ergonomics, heavy lifting</td>
<td>Daily</td>
<td>1</td>
<td>No</td>
<td>None</td>
</tr>
<tr>
<td>* Reproductive hazard (See I. H. assessment)</td>
<td>½ hour</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*If no exposure > MSAL, provide rationale:* Not applicable.

**Signature/Title:**  
S.E. Thurston,  
Industrial Hygienist  
**Date:** 18 April 2003

**MONITORING PLAN**

<table>
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*Engineering Controls in Use*

<p>| | | | | | |</p>
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<td>source zone</td>
</tr>
<tr>
<td>OT</td>
<td>other (specify)</td>
</tr>
</tbody>
</table>
WORKPLACE INFORMATION

Activity: NPS Monterey  Supervisor: Patricia Shearon  Phone: (831) 375-5958

Bldg#: 303  Shop: Retail Store

Total Personnel: Varies, generally Male: ~15-20  Female: ~50-60

65-70

Shop Operation:

The retail store department consists of the main retail store building, receiving area, customer service, warehouse, book/shoe warehouse, personalized services (gift shop), mini mart, and liquor store. Since the previous survey, the garden shop has been eliminated and the personalized services (gift) shop has been merged into the customer service shop. Employees conduct retail sales of goods. The warehouse performs lifting of heavy containers, where hydraulic pallet jacks and assistance from other workers are used. Some items in the warehouse are also moved using an electric forklift. One person in the receiving office uses a desktop computer to track inventory.

<table>
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<tr>
<th>Potential Hazard</th>
<th>Inter or Cont.</th>
<th># Workers Exposed</th>
<th>Exposure &gt; MSAL?</th>
<th>Controls in Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ergonomics, heavy lifting, warehouse personnel</td>
<td>Daily, up to 8 hours</td>
<td>4</td>
<td>No</td>
<td>Hydraulic jacks, team lifting</td>
</tr>
<tr>
<td>Ergonomics, computer use, receiving area</td>
<td>Daily, 1 hour</td>
<td>1</td>
<td>No</td>
<td>None</td>
</tr>
<tr>
<td>* Reproductive hazard (See I. H. assessment)</td>
<td></td>
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If no exposure > MSAL, provide rationale:

No injuries have occurred from lifting or computer use. Personnel are not exposed to chemical or physical hazard agents.

Signature/Title: S.E. Thurston, Industrial Hygienist  
Date: 14 April 2003
### MONITORING PLAN

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APPENDIX B

CHANGE OF OPERATION NOTIFICATION

Please use this form to notify the industrial hygienist of any changes to operations conducted by your department. The notification form may be copied as needed. The completed forms can be returned to:

NAVAL POSTGRADUATE SCHOOL, MONTEREY
CODE 223, SAFETY OFFICE (ATTN: INDUSTRIAL HYGIENIST)
1870 MORSE DRIVE
MONTEREY CA 93943

CHANGE-OF-OPERATION NOTIFICATION

FOREMAN/SUPERVISOR:                                            EXT:
BLDG:          COMMAND/SHOP: Naval Postgraduate WORK AREA:
                School, Monterey, Exchange Department

SURVEY REPORT:  ET-0233

INSTRUCTIONS TO FOREMAN/SUPERVISOR:

The industrial hygiene survey evaluated the potential hazards to your employees based on the operations existing at the time. When your operations change, the potential hazards can also change, and these new conditions must be evaluated. Please contact the industrial hygienist if any of the following occur:

a. Exposure times have changed.

b. New operations are performed.

c. New types of equipment are used.

d. An increase in major chemical usage.

e. New chemicals or chemical products are used.

f. A change in existing exhaust ventilation.

List any changes below.

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

Date Forwarded: ________________