



FY04 Environmental Health Report

The purpose of our annual Safety Report, is to raise the awareness of the CG community regarding the Coast Guard Headquarters' Environmental Health Division at CG HQ. The Division of Environmental Health (EH) exists to provide guidance regarding Environmental Health topics of concern. Our assistance is provided to the field via our MLC (kse) personnel and their Detached Safety and Environmental Health personnel located at each ISC.

The EH Division compartmentalizes a number of disciplines which include not only what would be considered 'classic EH' such as food, water, and good sanitation practices, but also includes the disciplines of industrial hygiene (IH), human factors (HF), and occupational health (OH). Together, these disciplines address those aspects of human health, including quality of life, that are determined by physical, chemical, and biological factors in the environment. It also refers to the theory and practice of assessing, correcting, controlling and preventing those factors in the environment that can potentially affect adversely the health of present and future generations.

The EH program in the CG provides the following assistance to the field in the form of consultation, training/information packages, and on site assistance. Our MLC (kse) personnel provide the following services on an established frequency based upon perceived risk or by special request:

- Occupational medical surveillance coordination
- Workplace Health Risk Assessments

- Crew Endurance Management (CEM)
- Food sanitation evaluations
- Food borne illness investigations
- Potable water and waste water concerns
- Disaster response support
- Overseas EH threat information
- Housing EH risk assessment
- Respiratory protection assistance
- Sound surveys in the work environment
- Vessel De-ratting exemption certificates
- Pest control guidance
- Human System Integration (HSI)
- Workplace ergonomics evaluations
- Impact shock and vibration evaluations
- Human Factors assessments in mishaps
- Sanitation inspections
- Potable water evaluation and testing
- Confined space identification
- Risk identification
- Risk management
- Training and education
- Investigate unusual occurrences of occupational disease or communicable disease
- Health and safety assistance for AMIO

Table of contents:

- Crew Endurance Management
- OMSEP updates
- DOEHRS-IH
- COMDTINST Revisions
- HMIRS
- Mold growth in homes



Crew Endurance Management

The Crew Endurance Management (CEM) program continues to gain visibility and popularity within our operational community and other federal agencies. The focus of the CEM program is to educate and train personnel to identify and control factors, be they individual, organizational or environmental, which can compromise crew endurance, increase safety, health and operational risk, and reduce mission readiness.

While studies of Coast Guard operations revealed the 70% of the CG personnel studied exhibited signs of compromised endurance, the good news is that endurance risk can be managed. We currently have various tools to identify and control endurance risk and are working on certifying individuals in the field to provide CEM implementation support to units. To date, we have 50 CG personnel (safety and environmental health officers, corpsmen, and wellness coordinators) throughout the country who have attained the certification of CEM Practitioner.

Program Status - While we continue to develop and refine our tools to identify and control endurance risk, most of our efforts are directed at integrating CEM principles and information into operational doctrine and guidelines, and certifying CEM Practitioners. We have successfully integrated CEM into the Air Operations Manual (M3710.1E), the Boat Operations and Training Manual (COMDTINST M16114.30), and currently are working with G-OCU (Office of Cutter Forces) to include CEM in their Cutter Tactical Manuals. These efforts should institutionalize CEM into the organization, and the release of the CEM COMDTINST this year will require units to integrate CEM into their operational risk management program and conduct periodic endurance risk assessments.

The education and training component of the program is progressing extremely well. We continue to introduce the CEM program and principles at the Command and Operations School at the Leadership Development Center at the Coast Guard Academy. Approximately 500 students who ultimately occupy command, executive, or operations positions are sensitized to endurance risk and opportunities to control this operational risk. In addition, we are expanding our CEM Practitioner population with the addition of Independent Duty Corpsmen (IDT). The Operational and Clinical Medicine Division (G-WKH-1) is integrating CEM training into the IDT course at Training Center Petaluma. We anticipate certifying approximately 80 members per year to augment our CEM Practitioner community.

Finally, we will be co-writing a newsletter with a sister program in G-M that delivers CEM to the commercial maritime, to make CEM resources and information available online (<http://www.uscg.mil/hq/g-m/cems/>). Please visit this site and let us know what you think of the resource and additional features that would be useful.

High Potential (HIPO) Events – This section of the report highlights some endurance risks factors that may have contributed to mishaps this past year. Endurance risk factors are presented and potential control strategies are discussed. Our aim is for you to use these lessons-learned to minimize your exposure to endurance risk and hopefully prevent similar mishaps from occurring at you unit..

Long workdays: There were a number of mishaps involving bodily injuries that were associated with long workdays. Workdays greater than 12 hours increase exposure to endurance risk. Research shows that individuals who have been awake for 15 hours perform at levels similar to someone with a blood alcohol concentration (BAC) of .05. After 24 to 25 hours of being awake, individuals perform like someone with a BAC of .10. Given these findings it is not surprising to see many of our personnel injuries late in the day or early night.

Strategies to control this risk include shortening the workday, scheduling physical and cognitive demanding tasks for earlier in the day, increase supervision and support for long tasks especially as they extend into the night or early morning hours.

Night or early morning work: a number of mishaps occurred either during work at night or in the morning hours after a night duty. It is well documented that humans are not designed to work at night. Our physiology does not provide the same alertness and performance maintaining resources at night as it does during the day hours. Most individuals struggle through the night work only to be alerted by the morning light and subsequently unable to sleep during the day hours. As vicious cycle continues, the individual develops chronic sleep debt and sleepiness, alertness decreases, and performance degrades. The operational consequences as seen in mishaps are, collisions, grounding and allisions, personnel falling in the water, hitting submerged items, etc. The risk does not end at the conclusion of the work period. This year, one of our colleagues ended their 12 hour COMCEN watch at 0700 and proceeded to drive home. During her 1 hour commute home she fell asleep and collided with another car. Fortunately, the injuries were not life threatening but the incident was a wake-up call for this unit to review their work schedule practices, consider ways to reduce endurance risk, and integrate proper risk assessment before, during and after work.

Strategies to control the night and early morning endurance risk factor include, stabilizing work schedules so that physiology can adjust to the night, exposing night workers to light to change their biological clock, developing different work schedules that are less disruptive to the biological clock, and educating members on what happened to physiology when working at night so they could adjust their personal lifestyle and sleep behavior to better endure night work. These approaches, and tools to identify endurance risks, are available through the CEM program.

Personal Operated Vehicles (POV): POV's remain our highest risk for Class A mishaps. The endurance risk factors of long workdays and operating vehicles at night or early morning hours are often contributing factors to these mishaps. Quite often members get on the road for long commutes or trips after working all day, and attempt to drive through the night to reach their destination as quickly as possible. Compounding the risk is drinking 1 or 2 beers prior to the drive. The low amount of alcohol by itself may not degrade alertness and performance, but in conjunction with a long workday (we presented earlier that after being awake for 15 hours we perform like some with a BAC of .05), and the reduced physiological functioning at night, results in an all too often deadly scenario.

Strategies to control this risk are educating the member on the physiological realities if long workdays and performing at night, requiring the member to conduct risk assessments prior to long drives, and limiting the length of time a member can drive as a function of length of workday, amount of rest, and the time of day the drive will occur.

We hope that by presenting these brief synopses of mishaps that contain endurance risk factors we can prevent the occurrence of similar mishaps at your unit. We encourage you to visit our website to learn more about CEM and use the tools to identify and control endurance risk at your unit. If you need assistance with CEM please call your SEHO or wellness coordinator, or G-WKS representative.

Occupational Medical Surveillance and Evaluation Program (OMSEP)

The working environment for CG active duty and civilian personnel can expose individuals to health hazards with the potential to cause disease or injury. OMSEP is designed to identify work related diseases or conditions, through baseline and periodic examinations, at a stage when modifying the exposure or providing medical intervention could potentially arrest disease progression or prevent recurrences. The fundamental purpose of this program is to

identify pre-existing health conditions, provide risk specific periodic screenings, and monitor clinical laboratory tests and biologic functions suggestive of work related environmental exposures. All OMSEP enrollees receive periodic physical examinations, in accordance with OSHA requirements, for the duration of their health hazard exposure or end of their employment. In accordance with OSHA regulations, the OMSEP personnel-tracking database containing the name, social security number, billet or occupation code, applicable examination protocols, and next physical examination due date remains active for an additional 30 years.

OMSEP training modules for CME credit

Our office maintains 24 instructional modules covering the topic of the Coast Guard's Occupational Medical Surveillance and Evaluation Program. Each module consists of a text and/or power point presentation along with posttest questions. Internet Explorer 5.0 or higher is necessary to view the online series. The lecture material should take approximately 60 minutes to complete. Expect to take about 15 minutes to complete the posttest questions. You must achieve a 70% on the posttest score in order to obtain continuing education (CE) credit. Your answers will remain confidential.

The Indian Health Service (IHS) Clinical Support Center is accredited by the Accreditation Council for Continuing Medical Education to sponsor continuing medical education for physicians. The IHS Clinical Support Center designates each module in this continuing education series for 1 hour of Category 1 credit toward the Physician's Recognition Award of the American Medical Association. This Category 1 credit is accepted by the American Academy of Physician Assistants. The Indian Health Service Clinical Support Center is accredited as a Provider of continuing education in nursing by the American Nurses Credentialing Center Commission on Accreditation, and designates this activity for 1.2 contact hours for nurses. This lecture series and the accompanying materials were produced in accordance with the Essentials and Standards

of the Accreditation Council for Continuing Medical Education. This program is a web-based continuing CE education product, designed to be self-paced.

You can access the site by visiting the Coast Guard Health and Safety Directorate homepage. Please e-mail your posttest answers to: wmccconnell@comdt.uscg.mil. You may also elect to send answers by mail to the following address: Commandant (CG-113-3), Room 5308, 2100 Second St SW, Washington, DC 20593.

DOEHRS-IH

The Coast Guard continues to maintain involvement in the development of the Defense Occupational and Environmental Readiness System-Industrial Hygiene (DOEHRS-IH). DOEHRS-IH is a computer program developed for use by DoD agencies and the CG. The CG has been involved in the development to ensure CG can reap the benefits of this powerful workplace-monitoring tool. The data repository for DOEHRS-IH will link with the medical software utilized by DOD and CG medical providers. DOEHRS-IH will allow the Coast Guard to track occupational exposures and allow medical officers to view those exposures during physical examinations of Coast Guard members, both active duty and civilian. It will also have a variety of timesaving functions that will help the Safety and Environmental health officers track their surveys and equipment.

COMDTINST REVISIONS

Respiratory Protection Manual

COMDTINST 6260.2D, Technical Guide: Practices for Respiratory Protection was signed on 05 May 2004. This was a complete rewrite of the manual to bring the Coast Guard up to date with current OSHA requirements. The primary changes to the manual relate to the new requirement for cartridge change-out schedules, use of the medical questionnaire, and the prohibiting of irritant smoke as a quantitative fit test method.

Asbestos, Lead and Radon in Coast Housing

COMDTINST 6260.1A, Asbestos, Lead, and Radon in CG Owned Housing: The updated Instruction was published in October 2004. The updated version established responsibilities for the identification, evaluation and management of asbestos-containing materials, lead (includes lead in water, lead in soil and lead-based paint) and radon in Coast Guard controlled housing and Child development Centers. It also incorporated changes in the federal lead standards.

Polyurethane Coatings Exposure Control

COMDINST 6260.30, Polyurethane coatings exposure control has been updated and has gone through the concurrent clearance process. Recommended changes are being incorporated in the Instruction. The updated Instruction differentiates between the use of two-part isocyanate-containing products such as polyurethane paints and one-part isocyanate-containing products used as sealants and adhesives; expanded the safe work practices to include preparation and cleanup procedures and spill control requirements. It also allows for the use of one-part coating systems. Our estimated timeframe for the completion is July 2005.

Hazard Communications For Workplace Materials.

The updates to COMDTINST 6260.21B have been completed and will be distributed for concurrent clearance. The updated Instruction expands the training requirements, provides for the labeling of portable containers and expands the responsibilities of an onsite contractor.

HMIRS

The Hazardous Materials Information Resource System (HMIRS) is a Department of Defense Automated system developed and maintained by defense logistics agency (DLA). HMIRS is the central repository for Material Safety Data Sheets (MSDS) for all U.S. Government military services and federal agencies. It also contains value added information entered by the service/agency administrators. This value-added

data includes HAZCOM warning labels and transportation information. HMIRS provides this data for hazardous materials purchased by the federal government through the DOD and Federal agencies.

HMIRS is available on the World-Wide-Web for CG personnel who handle, store, transport, use, or dispose of hazardous materials and contains over 300,000 hazardous materials. This site is password protected.

Mold Growth In CG Housing

Mold spores are everywhere, both indoors and outdoors. Mold spores deposited in locations with sufficient moisture, organic material, and temperatures will result in a bloom of new mold growth. Eliminating excess moisture will prevent the growth of mold. If mold growth is already present, identify the source(s) of moisture and repair prior to cleanup. This document should be used in conjunction with the mold flowchart. The flowchart is intended to give a sequence of events following the receipt of a mold complaint.

Response: what to do when called

Perform visual inspection looking for signs of mold growth or visible moisture damage. Sampling to identify the type(s) of mold can be performed, but is not recommended. In most cases identifying the type of mold will not alter the plan of action. In all cases, the actions will include fixing the source of water intrusion, repairing any building materials damaged, and cleaning the affected area. Housing occupant should contact local or unit housing officer.

Sources of water intrusion can include:

- **Overflowing Drip pans from AC units: Air conditioning units typically have drip pans** directly under an air-mixing chamber to capture condensation. Ensuring these drip pans are clean, and the drain is not clogged, will prevent moisture damage. Many AC units found in homes utilize two drains for moisture from their AC unit. Only one will typically drain moisture, the other is an emergency overflow drain. If the

emergency overflow is draining water the unit should be serviced immediately.

- **Leaking roof and** Repair the roofing system dry the areas affected as soon as possible.

- **Leaking pipes:** Repair the leaking pipes and dry the areas affected as soon as.

- **High humidity:** Ensuring proper operation of air conditioning units. Install dehumidifiers if necessary.

- **Sweating Pipes:** Installing insulation on cold water pipes will eliminate moisture damage potential.

- **Moisture in bathroom:** Mold growth can be expected in some areas such as bathrooms where excessive levels of moisture may exist. An appropriate measure to control moisture in bathrooms is to increase the level of air circulation. Exhaust fans in bathrooms should be vented directly outdoors, not re-circulated.

- **Water damage from disasters:** Moisture damage in a post-disaster scenario will not necessarily result in mold growth if addressed immediately. Moisture laden materials must be dried within 48 hours. Building materials such as drywall and porous ceiling tiles may be difficult to dry if completely saturated; these building materials might need to be replaced.

- **Water intrusion from the basement:** Moisture found in basements could be entering through the foundation. Installing a sump pump or “French Drain” may resolve the problem.

- **Unvented appliances such as gas fireplaces:** Unvented or ventless fireplaces and other appliances may add to the moisture present in the home. Improving air circulation or installing dehumidifiers are options to rectify the problem.

“Hidden mold”

Growth of mold can occur in voids between walls, behind wallpaper, or other areas not clearly visible. Individuals may suspect they have a hidden mold problem if the air smells “musty” or if occupants are experiencing health problems commonly associated with mold. The When large areas are contaminated with mold resulting from water intrusion or high humidity the same principle applies. The source of water intrusion must be fixed and the mold must be removed. In the case of large mold removal projects it is imperative that a qualified contractor perform the work. Improperly

destruction of building materials may be necessary for a thorough evaluation. Investigations of this type are best left to personnel with training and experience.

Cleanup

All species of mold have the potential to cause health problems, particularly for individuals with allergies. Personnel can remove small quantities of mold (such as mold growth in the shower stall) safely but should not attempt to clean up large quantities of mold. Cleaning with common household cleaners is recommended; a solution of soap and water on most surfaces will be adequate. Utilizing a solution of bleach and water or biocides is not advised. Sanitizing the area with bleach will not prevent the re-introduction of mold spores. If conditions favorable for growth remain, mold growth will recur. You may consider consulting a specialist if you are unsure how to properly clean an item or if the item is expensive and/or has sentimental value.

Cleanup crews should avoid exposing themselves and others to mold-laden dusts as they conduct their activities. Caution should be used to prevent mold and mold spores from being dispersed throughout the air where they can be inhaled by building occupants. Cleanup crews should wear respiratory protection (N-95 filter), eye protection, and gloves (if harsh chemicals are utilized for the cleanup).

When small areas are contaminated with mold resulting from water intrusion the project should include both repairing of water source and clean up of work area. The project should include an evaluation of substrate to determine if replacement is necessary. An example of this scenario: a leaking kitchen sink results in mold growth confined to under sink cabinet. Leaking pipe should be repaired and mold growth cleaned up by contractor.

performed cleanup of excessive contamination could result in significantly worsening the situation. In addition, a qualified professional should make the determination whether to salvage or discard building materials damaged by water intrusion and/or mold.

In situations where mold problems cannot be resolved at the local level, the Local or Unit Housing officer should call their Area Housing officer. Area Housing Officers have additional resources at their disposal including their MLC Detached Duty Safety and Environmental Health Officer (SEHO).

