



U.S. COAST GUARD



**Homeland
Security**

FY05 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.

Creation of the EH Division serves to compartmentalize 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) monitoring. 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
Katrina/Rita OMSEP tracking tool
Human Factors Analysis Classification
Ergonomics
HIPO – Small Boat Surf and Heavy Weather
Newly revised Instructions
CG Firing Range Management Work Group

Crew Endurance Management (CEM)

Just as a ship's endurance can be described by how long it can support operations at sea without replenishing supplies or requiring in-port maintenance, human endurance can be described as a function of physiological and psychological factors that support the ability of crewmembers to perform their jobs safely and effectively. The CEM program identifies and controls those physiological and psychological factors that compromise human endurance. A state-of-the-art tool is available on the CG safety web site (<http://www.uscg.mil/safety/cem.htm>) to identify and manage endurance risk. This tool, the crew endurance management system (CEMS), uses interactive tutorials and presentations to lead users step-by-step through the CEM process and tools. The use of CEMS is voluntary at the moment, but a COMDTINST will be release this year that mandates the use of CEMS to control endurance risk.

The CEM program has been recognized nationally and internationally for its efforts to improve human endurance and reduce this operational risk. The National Sleep Foundation, a not for profit organization who promotes public awareness and research for sleep and sleep disorders, awarded the CG with it's prestigious Healthy Sleep Community Award 2005 for our efforts on CEM.

For additional information on this program or assistance using CEMS please contact CG Headquarters Office of Safety and Environmental Health (CG-113).

Coast Guard Katrina Response: Exposures and Health Effects:

The Occupational Medical Surveillance and Evaluation Program (OMSEP) is designed to identify and prevent work related disease and injury. As recent responses to Hurricanes Katrina and Rita unfolded, it became evident there were multiple, unknown potential exposures necessitating

the development of an incident specific exposure tracking tool for those involved in the responses.

In an effort to protect our Coast Guard responders, the Significant Event/Acute Exposure Tracking Tool was created. This intranet accessible, SQL-based tool serves as a registry for personnel to permanently document their exposures, experiences and health effects. It provides a mechanism for access to required occupational surveillance or health care. This tool facilitates epidemiological analysis of who (by mission), where (by site location), when (by duration or point in time), and what risk factors (by exposures or assigned unit) may have potential occupational implications for both acute and chronic disease patterns. If there are any identified abnormalities within a specific group(s) of responders, this database will allow our medical community to follow-up with responders of similar exposure groups potentially identifying abnormalities earlier than would normally be the case thus allowing for medical intervention to prevent disease progression.

Human Factors Analysis Classification System (HFACS)

Human factors continue to be the most commonly cited (80%-90%) cause of mishaps. To substantially reduce the incidence and severity of mishaps, more attention and innovative approaches are needed to better understand and document the role human factors in the mishap chain. Through the Joint Services Safety Chiefs (JSSC) a Memorandum of Agreement (MOA) was signed by all the services to develop and implement a standard approach to collect, store and analyze human factors data. While all the services currently collect human factors data during mishap investigations, all use different approaches which makes it difficult to share data and explore opportunities to mitigate human factors deficiencies. The MOA stipulates that services will use a modified version of the Human Factors Analysis Classification

System (HFACS) to investigate all Class A, B and POV mishaps. While HFACS was originally created by the Navy to analyze human factors in aviation mishaps, the new version can be used for any type of mishap (aviation, afloat and ground). It is recommended that anyone who may be involved in a Class A, B, or POV mishap investigation become familiar with the HFACS process. A HFACS guide can be downloaded by going to <http://safetycenter.navy.mil/hfacs>). Training on how to use HFACS during mishap investigations will be available later this year and integrated into safety course curricula.

Ergonomics

Many CG environments place personnel at risk for musculoskeletal injury (MSI). Jobs that are high risk for MSI generally have one or more of the following characteristics: excessive use of *force* against an object, *repetitive* in nature, *awkward postures* or positions, *contact stress* between the body and physical environment, and conducted for extended periods of time (*duration*). Some of the signs and symptoms of MSI include swelling, redness, reduce mobility, numbness, tingling, and pain. Anyone experiencing these signs and symptoms should inform their supervisor and seek medical assistance. Additional information MSI or musculoskeletal disorders (MSD) can be found the CG Safety web site by going to <http://www.uscg.mil/safety>.

High Potential (HIPO)

One CG operational environment with high potential for MSI is the small boat surf and heavy weather response community. This work environment contains all the MSI risk factors identified above. A recent analysis of injuries for this operational community revealed that in excess of 60% of operators experience pain and discomfort in the following bodily regions: back, knees, and shoulders. Forty percent reported pain and discomfort in the neck, hand/wrist, and ankle/foot regions. Alarmingly, 12%

reported being in a “lost workday” or “restricted duty” status due to these injuries. The 12% rate is 10 times the rate for the general CG population. Injury control options are being explored and include ergonomic changes to the boat, underway limits, medical screening, conditioning and exercise, and personal protective equipment (PPE).

It is recommended that work environments be evaluated for the MSI risk factors, as well as, the signs and symptoms identified above. Tools and information for conducting these evaluations are available on the CG safety web site (<http://www.uscg.mil/safety>), or by calling the CG Headquarters’ Office of Safety and Environmental Health (CG-113).

Coast Guard Firing Range Management Working Group

In response to Environmental, Legal, Operational, and Health/Safety concerns regarding CG operated ranges, the CG Firing Range Management WG has been formed in September 2005. The working group has already established design criteria guidelines for the creation of new firing ranges. In addition, key headquarters directorates communicated issues related to firing range operations, and management.

COMDTINST REVISIONS

Coast Guard Heat Stress Instruction

COMDTINST XYZ, CG Cutter Heat Stress Program and COMDTPUB 6200.12, Preventing Heat Injuries have been combined to form the new Coast Guard Heat Stress Instruction for vessel and shore units. Combining these two references into a comprehensive heat stress program is seen as a positive step towards streamlining how the Coast Guard will address this hazard across all platforms and work conditions. This Instruction is currently in draft form, ready to be sent through the Concurrent Clearance process.

Coast Guard Occupational Medical Surveillance and Evaluation Program (OMSEP)

Recent updates to the OMSEP program include the aforementioned Katrina/Rita. We have also made changes to ensure that both civilians and Auxiliary personnel performing potentially hazardous duties are also entitled to physical examinations if they meet the enrollment criteria set forth in chapter 12. In addition, we have clarified who is responsible for entering completed physical dates in the online OMSEP database. Clinic personnel are now responsible for ensuring that, upon completion of an OMSEP physical, the appropriate date is entered.

COMDTINST 6260.25, Implementation of the Benzene Occupational Exposure

The Coast Guard's Benzene instruction has been cancelled. Coast Guard units are directed to comply with the lowest recognized exposure standard set by the American Conference of Governmental Industrial Hygienists (ACGIH) of 0.5 parts per million (half of the established TLV of 1.0 ppm) over an 8-hour work day.