

THE NAVY CORPORATE ERGONOMICS PROGRAM IN SPAIN

Ergonomics is the science of designing workplace tools and tasks to accommodate the person assigned the task instead of the customary approach of forcing workers, regardless of shape and size, to adapt to the job. The Chief of Naval Operations (CNO) recognizes ergonomics as a top occupational safety and health concern as well as a *quality of life* issue for the Navy's work force. He therefore encouraged the Navy's occupational safety and health (NAVOSH) professionals to develop a team approach to resolving ergonomics problems at Navy installations and on ships. The result was the CNO's *Corporate Ergonomics Program*.



Aerial view of Naval Station Rota

During 1998, Andrew Rahaman CIH, CSP, Occupational Safety and Health Manager for the Commander-in-Chief U.S. Naval Forces in Europe (CINCUSNAVEUR), jump-started "*putting ergonomics into action*" at each major CINCUSNAVEUR base by funding week-long *Ergo-Team training*. An ergonomics expert sponsored by the CNO's Safety and Occupational Health Division instructed the *Ergo-Team* sessions.

Ergo-Team training is based on the concept that, with management support, workers can be successfully trained to recognize and minimize ergonomic risk factors in their own work areas. Training topics include basic ergonomic theory, some human anatomy, recognition of risk factors associated with work-related ergonomic injuries and disorders, and prevention of these injuries and disorders. The goal of *Ergo-Team training* is to provide trainees with the skills to recognize ergonomic stress factors in their work areas and to identify tools, equipment, and work practices to reduce the risk of harm to workers while maintaining worker acceptance and productivity.

As a result of this CINCUSNAVEUR initiative, NAVOSH personnel and supervisors at US Naval Activities Spain were able to attend the CNO *Ergo-Team training* course at no cost to their commands. At the Naval Security Group Activity, Rota, Spain, one graduate of the training course, OSH Manager Donna S. Pass-Otteni, conducted ergonomic evaluations and developed recommendations to modify the layout of the command's operations watch floor for ergonomic comfort. Members of the command worked at personal computer (PC) screens during 12-hour shifts, resulting in increased risk of chronic discomfort and repetitive stress injury (RSI). Ms. Pass-Otteni has continued to conduct ergonomic evaluations in conjunction with routine safety inspections. Ergonomic risk factors among the command's bulk mail handlers were also identified and significantly reduced. Anti-fatigue matting was installed at the customer service window and in the *mail pitching* section; ergonomic cutting tools were provided to replace scissors for opening large mail pouches; and material-handling equipment

was provided to facilitate moving mail pouches and boxes. These measures have resulted in an improved mail handling process and significantly reduced ergonomic risk factors. In addition, command-specific ergonomic training was developed by Mrs. Pass-Otteni, and posted on the local area network (LAN) for round-the-clock availability to all command members. This training is now included as part of the command indoctrination to increase the ergonomic awareness level of all newly arriving personnel.

U.S. Naval Hospital Rota, Spain *Ergo-Team* members who graduated from the *Ergo-Team* course include staff from the physical therapy, safety, occupational medicine, industrial hygiene and facilities maintenance departments. This team proposed an *Ergo-Team* quality improvement initiative that was immediately approved by the hospital's executive steering committee. The *Ergo-Team* charter statement is: "the ultimate quality of life commitment to be offered by the command is that no one here should have to work in an environment where he/she experiences chronic discomfort, or is at risk of repetitive stress injury (RSI) or work related musculoskeletal disorders."

With these marching orders, the hospital's *Ergo-Team* conducted a discomfort survey of hospital employees using the Navy Occupational Safety and Health Program Manual, OPNAV Instruction 5100.23E, Ergonomics Questionnaire (located in Appendix 23-A of the Instruction). The survey asks workers to indicate on a diagram of the human body their perceived level of comfort, discomfort, or pain, on a scale of zero to ten, comfort ratings of zero being the least comfortable and a score of ten representing no discomfort. The overall response rate was 64% of employees. Survey responses revealed a need to improve the design of PC workstations for employees who use them four or more hours a day.

More than 500 non-adjustable chairs at PC workstations throughout the base were phased out after they were found to be ergonomically deficient in industrial hygiene surveys. The chairs were replaced with ergonomically adjustable models that meet the Department of Defense's Ergonomic Working Group guidelines. Other computer workstation accessories that were recommended as the result of industrial hygiene survey findings included:



Corner PC Workstation as Designed by the Ergo-Team at U.S. Naval Hospital Rota, Spain

- Height-adjustable articulating keyboard trays with wrist supports;
- Split, or *natural*, keyboards that allow the user to keep wrists in a more neutral position;
- Document holders that eliminate awkward head and neck postures and eyestrain;
- Corner desk units that allow placement of monitors directly in front of computer users, as shown in the above photograph;
- Scrolling mouse and trackball pointing devices to minimize wrist movements;
- Foot rests; and
- Placement of working materials within the workers' reaching ranges.

The hospital's *Ergo-Team* also designed a standing microscope and computer workstation to accommodate a physician who was unable to work in a seated position. This modification has already saved the Navy well over \$10,000.00 by allowing the physician to continue to work and avoiding the expense of hiring a replacement or sending patients requiring his specialty to other military medical treatment facilities in Europe or to the United States.



Standing PC work station

At the Naval European Meteorology and Oceanography Center, Rota, *Ergo-Team* graduate, Senior Chief Deborah Doney, added ergonomic evaluations to her regular command safety inspections. One benefit of her evaluations was a design change to the layout of the command's operations watch floor similar to the one described above at Naval Security Group Activity, Rota. Senior Chief Doney also tailored many of the concepts she learned in *Ergo-Team training* to an in-house ergonomics awareness training course that was provided to all command members.

Food preparation workers at the Naval Station Rota galley reported chronic upper shoulder, back, and neck pain during an industrial hygiene survey. It was noted that galley workers who complained of discomfort were taller than their coworkers who reported no problems. Discomfort was found to result from long periods spent in an awkward, uncomfortable position at a workstation that was too low for taller workers. Industrial hygiene *Ergo-Team* members Miguel Garcia and Dave Hiipakka immediately recognized an ergonomic solution only a few feet away, a high table that was used for storage. Relocating food preparation tasks to the higher surface greatly increased comfort and productivity for tall workers. Said one, "*Thank goodness there's someone on this station looking out for tall people!*"



Food preparation worker in an awkward posture, at a workstation that is too low for him



The same worker preparing food at a workstation that is at an appropriate height for him

Naval Station Rota's Human Resources Office sponsors monthly PC Ergonomics courses. The courses were developed and are led by the hospital's Certified Industrial Hygienists, Dave Hiipakka and Kevin Dyrdaahl.

Future objectives for achieving Rota's ultimate goal of empowering workers at all levels to identify and help resolve ergonomic problems include:

-- A chapter dedicated specifically to ergonomics in the activity's occupational safety and health manual;

-- Comprehensive ergonomic surveys of potentially hazardous work tasks such as small, heavy containers that must be lifted and carried without mechanical assistance;

--Development of a comprehensive ergonomics curriculum tailored to meet the needs of workers at all levels of the organization, including non-English speaking workers;

--Return visits by the CNO Ergonomics consultant/contractor to provide periodic basic/refresher ergonomics training, evaluate progress of the program's objectives, bring *Ergo-Team* members up to date on new ideas and advances in ergonomics, and qualify replacement members for the *Ergo-Team*.

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