

## **NAS SIGONELLA'S CUSTOMS OFFICE REDUCES RISK OF INJURIES AND MUSCULOSKELETAL DISORDERS**

The U. S. Naval Air Station (NAS) Sigonella, Italy operates a customs office in the nearby port city of Catania. The NAS Customs Office prepares documents to request permission from the Italian government to ship cargo from Catania and other Italian ports to U. S. Navy ships in the Mediterranean.



**Lack of file cabinets meant bending and lifting to access files.**

A non-operational window air conditioner wasted space, blocked light, and let in drafts. Interior office doors, which did not close properly, and an uninsulated glass entrance door subjected the office to unpredictable and unwelcome temperature variations.

The undersized furniture that came with the office was also not adaptable to the Customs Office computers. Employees using them would have been forced to work in awkward, cramped postures. There were also no file cabinets or other suitable storage for office files in the new Navy's Customs Office; files had to be stacked in boxes on the floor or on a shelf. That meant that the staff would have to do a lot of repetitive bending and lifting to access their files.



**Safety Technician, Kurt Davis, took anthropometric measurements of Customs Office staff.**

When the Navy first moved into its new Customs Office, they found that the lighting in the office was not sufficient for the office staff's needs and that there were not enough electrical outlets to power their computers and other equipment. In addition, the electrical outlets were not grounded, creating a potential electric shock hazard.



**Non-operational window air conditioner and uninsulated glass door let in drafts.**

Wanda Walters, NAS Sigonella's Ergonomic Program Manager, and Safety Technician, Kurt Davis, initiated a preliminary ergonomic assessment after an initial safety survey of the building and work processes confirmed the need for improvement. The Customs Office ergonomic assessment included extensive observations and *anthropometric* measurements of the employees, using charts and photography to document their work practices, and assistance in completing the *Job Requirement-Physical Demands* survey.

Ergonomics is the science of fitting the work to the worker, instead of requiring the worker to adapt to existing working conditions. Working in awkward or cramped postures tends to fatigue muscles, tendons, and ligaments of the wrists, arms, shoulders, neck, legs, or back. This overburdening may lead to a musculoskeletal disorder, or MSD, a group of disabilities that usually involve



**Working in cramped spaces can lead to WMSDs.**

weakness and discomfort. Work-related MSDs are called WMSDs. The discomfort of an MSD or WMSD often improves after discontinuing activities that led to the disability and getting medical treatment.

The goal of an ergonomics program is to reduce the frequency and severity of WMSDs by redesigning work tasks or workstations using procedures and tools that minimize the risk of WMSDs. Tasks, equipment, and tools that are ergonomically designed help to reduce the risk of work-related injuries and WMSDs by allowing the worker to

avoid harmful repetitive motions, awkward positions, and unnatural postures. Applying ergonomic principals in the workplace also increases productivity and efficiency, reduces errors and waste, increases worker satisfaction, and ultimately improves overall productivity.



**Ergonomically designed work stations take into account height, reach limits, and clearance.**

Anthropometry is a systematic approach to measuring various segments of a person's body and integrating those measurements to determine a beneficial interface between that individual and his or her work requirements. Ergonomists use anthropometric measurements extensively to match workers with



**New shelving eliminates awkward storage of files on floors.**

appropriate, ergonomically safe tools, equipment, and fixtures to minimize the risk of injuries and WMSDs. Anthropometric measurements are proportional and vary from person to person. They may include sitting height; *reach limits*; wrist to elbow distance; knee to hip distance; eye height with reference to the seat or floor; and determining the clearance an individual needs to work comfortably and efficiently.

Implementation of the U. S. Navy's Process Review & Measurement System (PR&MS) at NAS Sigonella called for incorporation of the comprehensive ergonomic assessment of the new Customs Office. The ergonomic assessment was included in the PR&MS supervisor's safety notebooks and debriefs. PR&MS is a management tool that was developed in 1998 under the Chief of Naval Operations (CNO) Occupational Safety and Health (NAVOSH) Branch to identify key

NAVOSH processes to improve Navy Readiness and reduce costs by promoting risk management decisions that protect Navy workers and property that might otherwise be harmed. It also enables the Navy to measure accurately the effectiveness of a commanding officer's commitment to protecting sailors and civilian employees under his command.



**Grounded electric outlets improved office equipment safety.**

Captain Virgil Twigg, Commanding Officer of the U. S. Navy's Supply Department at NAS Sigonella, and Lieutenant William Clarke, NAS Sigonella's Material, Customs, and Transportation Officer, agreed with the findings of the ergonomic assessment and authorized modifications to resolve the Customs Office's ergonomic and safety deficiencies. Captain Twigg directed the NAS Sigonella Safety Department to take the lead in overseeing the upgrading of the Customs Office to meet the Navy's occupational safety and health and ergonomic program requirements as well as the Navy's obligations under Italian law.

Lieutenant Clarke worked with NAS Sigonella's Public Works Department (PWD) to implement necessary safety and ergonomic improvements to the Customs Office. PWD installed grounded electric outlets and telephones and provided computer hook-ups at each workstation to minimize the need for extension cords. They upgraded general lighting and installed task lighting to prevent eyestrain. PWD also installed double-insulated interior doors and windows to prevent drafts and undesirable temperature variations. Public Works even replaced the defunct window air conditioner with a functioning air conditioning system. The glass entrance door was replaced with a solid-core wooden door that improved temperature variations and enhanced building security.



**Upgraded lighting prevents eyestrain.**



**Workstations are ergonomically configured for workers' comfort.**

Shelves were installed to accommodate the telephone and computer equipment, getting them off the floor, and freeing up valuable workspace.

The NAS Sigonella Safety Department contracted with the Milan, Italy office of a company that is approved by the U. S. government to provide ergonomically safe furniture to the Navy. That supplier provided ergonomic workstations and a consultant who helped organize the new workstations in the most ergonomically beneficial configurations. The furniture supplier's ergonomics consultant also helped

Lieutenant Clarke and his staff to maximize the benefits of selecting the right chair for each employee along with making best use of their workspace and available storage.

As a result, the Customs Office acquired three workstations with computer and monitor mounts. That arrangement provided triple the desktop workspace and storage space as well as ergonomic computer chairs for employees. The chairs have multiple adjustments so that each user can adjust his or her chair to fit individual needs. The Customs Office also acquired two large wall units specifically designed to accommodate filing systems in small offices.

NAS Sigonella's Customs Office employees are very pleased with the ergonomic and safety improvements to their refurbished office. The Customs Office staff works in comfort at their ergonomic stations with easy access to their computers, files, and phones. Their work environment is healthier and safer due to the greatly reduced risk of work-related injuries or disabilities along with the resolution of electric shock, insulation, and lighting problems. The NAS Sigonella Supply Department praised the Safety Department for its foresight and guidance in helping the NAS Sigonella Customs Office transform a substandard office environment into an ergonomically safe work environment.

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