

COMPUTER ERGONOMICS: A LITTLE AWARENESS GOES A LONG WAY AT NADEP JAX

In the late 1950's, the government offices at Naval Aviation Depot, Jacksonville, Florida (NADEP JAX) were outfitted with sturdy steel desks and chairs that had been built to last. Almost 40 years later, some of those desks and chairs were still being used in offices and workshops by employees who now used personal computers (PCs) on a regular basis.



Old desks and new computer equipment brought ergonomic challenges

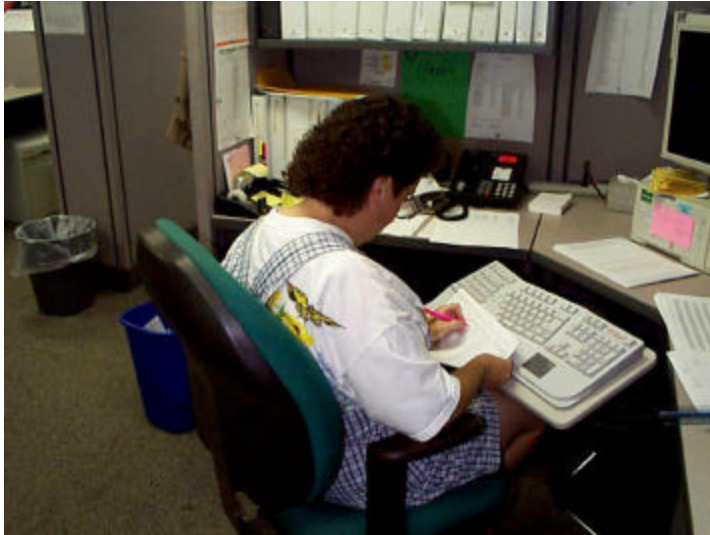
Workers incorporated the new PCs into their workspaces, with keyboards atop the desk and monitors on top of the computer's central processing unit (CPU). Those old style desks were not configured for PC use, nor did anyone consider the comfort of PC users in those days. This ergonomically unsound combination was an important factor in employee complaints ranging from headaches to back, arm, wrist, and shoulder discomfort and pain. The situation improved, however, when NADEP JAX established an Ergonomics Program and NADEP JAX Process Engineers received basic ergonomics training in 1995. New office furniture purchased since then is both ergonomic and modular to allow for comfortable rearrangement and relocation with workers' changing needs.

Ergonomics is the science of fitting the workplace to the worker instead of requiring the worker to adapt to existing working conditions. Work tasks that require using one group of muscles for long periods each day tend to fatigue those muscles. This overburdening may lead to a cumulative trauma disorder, or CTD, a disability that usually involves weakness and discomfort. Work-related CTDs for computer users commonly involve the wrists, arms, shoulders, neck, legs, or back. The discomfort often improves after discontinuing the work tasks or activities that weaken the affected muscles.

The NADEP JAX Ergonomics Program succeeded in reducing the frequency and severity of CTDs by introducing ergonomically designed workstations. The workstations minimize the risk of CTDs by allowing PC users to avoid awkward and unnatural postures. Desk units feature user-friendly keyboard drops, rounded edges and allowance for sufficient work surfaces to hold computer equipment and paperwork. In addition, sound partitions screen out distracting noise and desktop bookshelves are within easy reach, so that workers avoid

stretching and overhead lifting. Planned ergonomics made a huge difference in eliminating the occupational hazard of CTDs from poor workstation design, but even with the *best* equipment things aren't always perfect.

With all that had been accomplished, members of the recently formed



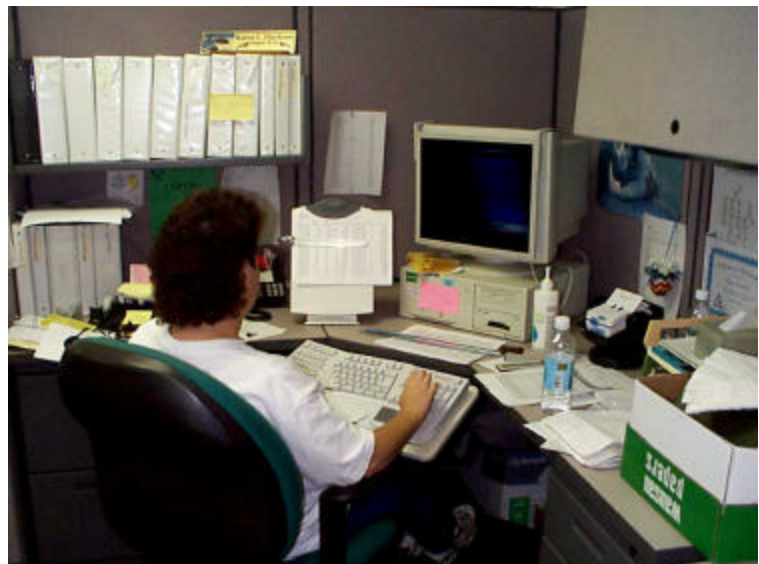
Technician worked at her PC for long periods with paperwork in her lap, leading to neck, shoulder, and back strain

Ergonomics Team were understandably surprised to learn that one supply technician, who was working at a modern ergonomic workstation, reported progressive neck, shoulder, and lower back pain. Her condition was worsening despite the best equipment available, and she was receiving physical therapy for the pain.

Supply technicians routinely scrutinize, verify, and enter computer data on thousands of items purchased each day for NADEP's numerous operations. Technicians also research this

data from both computer files and paper copies to track and verify information. The supervisor of the technician reporting work-related pain and discomfort was baffled by his employee's continued debilitation given her ergonomically designed workstation. The supervisor requested that the NADEP JAX Ergonomics Team evaluate the computer station and work practices of the technician.

Ergonomics Team members observed that, in spite of workstation ergonomic improvements, this technician continued to mark and input information into the computer from paper copies that she held in her lap. This work practice kept her in an awkward posture for many hours a day. During an interview with her, Ergonomics Team Leader, Barbara Wright, learned that the worker was also distracted by noise from a large printer in a nearby cubicle and noise from people cutting



A copyholder at eye level helps to eliminate tension and pain, and a headset masks background noise.

through her cubicle to get to an adjacent meeting room. The combination of a sustained awkward posture and irritating background noise intensified the technician's tension and discomfort.

Two fairly easy and inexpensive ergonomic solutions finally eliminated the technician's pain and discomfort. The NADEP JAX Ergonomics Team provided the technician with a *copyholder* for the paper copies of supply data. The technician simply adjusts the copyholder to the same height and distance as her computer monitor, thus eliminating the need for her to crane her neck when looking back and forth between the copy and the monitor. The Ergonomics Team also provided the technician with a *computer headset* so she could listen to music to screen out background noise and improve her concentration. The combined cost of both items was less than \$50.00. The Ergonomics Team followed up with the technician 30 days after she received her *copyholder* and *headset*. She was pleased with her new set up and reported relief from earlier pain and discomfort. In fact, her condition had improved so much that she no longer required inconvenient and expensive physical therapy sessions!

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