Sound Work Practices Can Promote Health, Safety and Productivity

By Michael J. Major

If a worker falls from a building, is hit by a falling object or is electrocuted, you know you have a major problem. But if a worker has stiff joints or a sore back from doing the same type of work for 10, 20 or more years, you have something much less dramatic. These aches and pains are called cumulative trauma disorders, which are distinguished from acute traumas such as broken bones, cuts and sprains. With an acute trauma, you have immediate pain. A CTD can take weeks, months or years to manifest itself for it results not from a sudden occurrence but from repetitions of the same standard work movements.

The study of this process, how routine work habits can result in ultimately very painful and even debilitating injuries, is called ergonomics. The name sounds a bit stuffy, not to mention complicated and boring. This is unfortunate because CTDs are a serious problem, one that is not yet getting the attention it deserves.

Here are some statistics drawn from the booklet, *Ergonomics for Carpenters*, a project sponsored by the United Brotherhood of Carpenters and Joiners Health and Safety Fund and the National Institute for Occupational Safety and Health, a source for much of the information in this article: Nationally, almost 60 percent of all work-related illnesses are CTDs. More than $16 billion is spent each year on compensa-
tion for and treatment of CTDs. Eight out of every 10 people in the United States will have a painful back problem sometime during their life.

**Researching for Answers**

Unfortunately, both the awareness of and implementation of sound ergonomic practices in the workplace are still in an embryonic state. Dick Mettler, safety/loss control consultant, Northwest Wall and Ceiling Industry Trust Fund, Seattle, reports that Europe has been very active in this arena, resulting in a notable reduction in CTDs. Mettler acknowledges that the construction industry in the United States lags not only behind Europe, but is also not up to speed with domestic manufacturing and other industries.

Mettler reports that research is still going on, and “we’re still formulating what to do with it.” He adds that contractors are still not actively involved in the process. One problem in the wall and ceiling industry, Mettler says, is that a worker’s tasks are not limited to one or a few repetitive motions such as those of a computer typist or slaughterhouse butcher. On the one hand, the variety of tasks help break up repetitive-motion syndromes; on the other hand, this same variety also makes problem areas harder to pin down.

For this reason, explains Mark Stuart, Ph.D., research ergonomist for the Safety and Health Assessment and Research for Prevention for the Washington Department of Labor and Industries, Olympia, his agency is conducting an experiment at one of the local technical colleges, in operation for several months, with workers involved in drywall applications. They are being studied for their typical movements, as well the tools they use and how they use them.

Workers are the best source of information as to what is the best, least stressful way to accomplish tasks, Stuart says, and employers are well advised to listen to their employees and utilize their suggestions in evolving safe practices. “The most important point is that improved methods of doing work can result in less physical stress on the human body, with fewer injuries over time, allowing employees to work longer, with fewer workers’ compensation claims, as well as increased productivity,” Stuart explains. “Work methods that place less physical and mental stress on the workers is ultimately more productive.”

**Ergonomic Equipment**

Although more research can be done to find out what the ergonomic needs of wall and ceiling workers are, there are clearly many obvious sources of strain. “What’s stressful is hanging overhead large sheets of drywall, which typically weigh 100 to 150 pounds,” Stuart says. “This has resulted in a lot of back, shoulder and neck problems.”

What are manufacturers doing about this situation in terms of creating more-ergonomic equipment? Unfortunately, not much at this time. “From what I’ve seen, manufacturers generally are not addressing the problem,” says Ron Burke, president, Newmatic Innovators, Revelstoke, British Columbia, Canada. “And convincing the workers themselves is also a major obstacle. Most guys think of their work in macho terms. If you’re 18 years old, you don’t look forward 20 years and anticipate back problems. For there to be...
change there will have to be a lot of effort from the industry as well as the powers that be, like compensation boards. But, as time goes on, change will become more inevitable.”

Yet, even though most manufacturers are not addressing the problem, some are. Newmatic Innovators is one of them. Burke reports he has invented an aluminum drywaller that is easy to assemble and disassemble and weighs less than 50 pounds. It allows one person, rather than two, to easily put rockboard up on a ceiling without the usual heaving, lifting and back-twisting involved.

John Price, who does marketing for Okanagan Plastic Injection Inc., Vernon, British Columbia, Canada, says his company has two products designed to reduce lifting injuries for increasingly bigger and awkward drywall panels. One is a panel handle that allows the lifting of one or more sheets in a manner designed to reduce muscle strain. Another is a plastic foot attachment, weighing less than a pound, which allows your foot to lift a panel. When not in use, the attachment can be flipped out of the way.

Stuart points out that, although ergonomics awareness is currently low and much yet remains to be done in terms of research and awareness, the main ergonomic principles are already known. The Ergonomics for Carpenters booklet, referred to at the beginning of this article, is the first effort from that
union, but it nevertheless contains a comprehensive compendium of ergonomic principles and tips. And, of course, there is a great deal of similarity between the movements of carpenters and of contractors in the wall and ceiling business.

The following is an assortment of suggestions on how to prevent CTDs, drawn from the Ergonomics for Carpenters booklet.

**Getting the Most Out of Your Muscles**

- Muscles become fatigued when they don’t get enough recovery time.
- During static activity, muscles remain contracted. Static activity is more tiring than dynamic activity. (Muscles contract and relax during dynamic activity.)
- The muscles used, the weight of the object you are lifting or holding, the posture of your body and frequency and duration of the activity all affect the amount of energy you need to do the work.
- Recovery is faster if you work in short exertions with many “micro breaks” than if you work in long exertions with fewer but longer breaks.
- Prolonged mistreatment of your muscles and joints can result in permanent damage.
- Working smart can save both your body and your job.

**Major Risks for Upper-Extremity CTDs**

- Amount of force or muscle effort needed.
- External contact stress (sharp objects or tools that dig into the palm).
- Awkward posture (for example, overhead work, bent wrists).
- Repetitive work (for example, nailing a deck) with insufficient rest breaks.
- Vibration from power tools.
- Insufficient recovery time for muscles.

**Back Risk Factors**

- Workplace conditions (temperature...
extremes, slippery surfaces, poor housekeeping).
- Lifting and forceful movements (pushing/pulling).
- Bending and twisting.
- Static work postures.
- Repetitive work.

**Use Your Head to Save Your Back**

- Use lifting devices (cranes, hoists, etc.) to lift heavy objects, or get help. Don’t lift heavy objects by yourself.
- Change your position/posture often.
- Take micro-breaks or change activities.
- Use a squat lift unless the object is too big and bulky to hold next to your body.
- Don’t lift and twist at the same time. Lift, then turn your entire body.
- Objects that will be manually lifted should be stored at waist height.
- Keep walking surfaces free of trip and slip obstacles.

**Control the Risk Factor in Lifting**

- Let machines do the lifting. Whenever possible, use forklifts, come-alongs, jacks and cranes to lift or move heavy loads.
- Use platforms or stands for storing objects to be lifted. Try to keep lifts between knuckle and shoulder height.
- Materials that will be manually lifted should be stored at waist heights, not on the ground.
- Lift lighter loads (make more trips). Lift with a buddy.
- Reduce the weight and size of materials. For example, in Europe drywall is no bigger than 3-feet by 6-feet. This change would need to be made by the construction industry and drywall manufacturers. It could prevent many injuries.
- During heavy physical work, use frequent “micro” breaks.

**About the Author**

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