

Better Ergonomics Boost Profit/Quality

The auto industry spends as much on worker's compensation per vehicle as it does on steel. Improving plant and design ergonomics promises **more bang for the buck than anything else automakers can do.**

■ by Gerry Kobe

When a new vehicle program is negotiated for funding, the deciding factor on its approval comes down to whether or not it's going to make money. In the history of automaking, no program ever received approval simply because it was the right thing to do, and in all likelihood none ever will. It's ironic then, that for decades spending money to improve worker ergonomics has been argued from the "right thing to do" perspective. History has shown that ethics seldom win arguments — dollars do.

Nobody knows that better than David Foreman and John Boyle, associates and ergonomics specialists at Troy, Mich.-based consultancy Munro & Associates. "When you consider both the direct and indirect costs of poor ergonomics, the average cost of one injury is \$27,000 a day," Foreman says. Indirect costs include worker rehabilitation, replacement worker training, increased scrap, lawsuits and fines, cost of poor quality, poor employee

morale and the actual cost of fixing the station that caused the injury.

Boyle adds that one of the weaknesses in the auto industry is that everyone looks at machinery and tooling and

talks about process capability, but they fail to equate it with the human side of things. "Anybody will tell you good process capability equals quality," he says. "So if you have poor ergonomics, you have poor human process capability and you're going to have poor quality."

Too often, the problem is that engineers that design the product and/or the workstation don't have any hands-on experience actually performing the function they are designing for. Getting an engineer on the line goes a long way toward education, according to Boyle. "Bring a guy out there and hurt him for a while and he really starts to understand ergonomics," he says.

Another common problem is the difference in how a line actually operates versus how it was designed to operate. As an industrial engineer, Foreman stresses the importance of good line balance so everybody has the same energy expenditure. When you get a bottleneck, people upstream work at a normal rate, but the guy at the bottleneck overexerts himself to keep up. That's going to lead to injury.

Although many companies feel they have the bases covered with ergonomists on staff, bringing in outside experts provides cross-pollination of cultures. "We are good at what we do

partly because we are not on staff," Boyle says. We look at things differently than people doing it everyday and because we work in many different industries we can bring new solutions back with us." In addition, Foreman's background lets him focus on plant layout, while Boyle attacks from the standpoint of design and design for assembly — an effective two-pronged approach.

Use Munro's ergonomic checklist to see if your operation has potential to unlock profits and quality gains. If you need additional information, contact Munro & Associates at 248-362-5110. ■

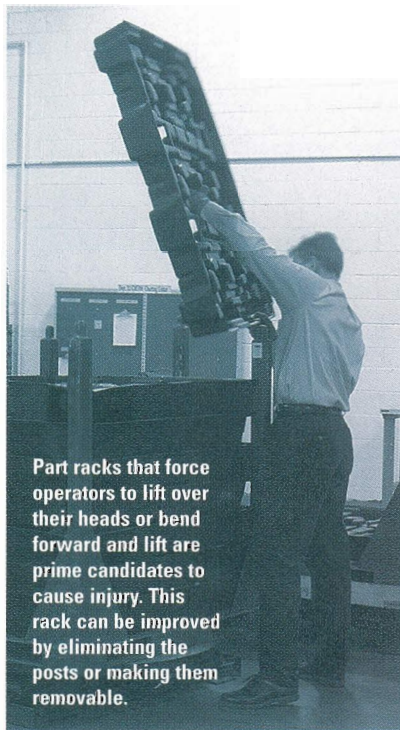
AN ERGONOMIC CHECKLIST

Things To Avoid

- Job activities with many repetitions.
- Putting body in extreme positions.
- Work that stresses one muscle group or maintains posture for long periods.
- Work that requires operator to maintain static posture.
- Pressures from tools or equipment on tissues, nerves or blood vessels.
- Tools which vibrate the body.
- Exposure to temperature extremes.

Things That Help

- Provide chair with back support and armrests.
- Round, curve or pad all edges to eliminate point-pressure sources.
- Use containers that minimize operator flexing/extension, pivoting, twisting.
- Design products that are assembled with gravity instead of against it.
- Use balanced tools, designed for the job and that fit operators' hands.
- Use lift/turn/tilt tables to maintain optimal work height and reaches.
- Use over/under conveyors to avoid lifting. Use carts to transport parts.
- Automate where poor ergonomics cannot be fixed.
- Design workstations and part chutes so reach distances are within 18 inches.
- Rotate operators to avoid prolonged exposure to repetitive jobs.
- Train the organization on ergonomics and listen to operators.



Part racks that force operators to lift over their heads or bend forward and lift are prime candidates to cause injury. This rack can be improved by eliminating the posts or making them removable.

Munro & Associates, Inc.
900 Wilshire Drive, Suite 301
Troy, MI 48084
Phone: (248) 362-5110
Fax: (248) 362-5117
www.munroassoc.com