The Problem:
Working with your arms above your shoulders

Anyone who has worked with tools knows that working with your arms above your shoulders will tire you out. If you've taken a COHP ergonomics training you can also use the technical term for this hazard: holding your arms up is an **awkward posture.** Workers who work overhead have more injuries to their shoulders than those who don't.

Ironworkers on a Boston construction site were inserting 10 foot and 14 foot lengths of #11 rebar into holes in a slurry wall. The slurry wall was seven feet above the rebar mat they were standing on.

These workers were handling heavy rebar with arms over their heads for hours at a time, and they were hurting.

Awkward posture constructing concrete reinforcement

The Process:

Mike Huxley, Steward from Ironworkers Local 7, thought of a simple solution. If his crew could stand on a stable surface a foot or two above the ground, they would be able to handle the rebar at a height between their waists and chests.

Mike got help from other stewards and foremen who met with researchers in a COHP Health Trak committee. Bob Marshall, Acting Carpenters' Steward, thought workers could use a box about two feet tall, with one step. He suggested it should rest on plywood so workers can easily slide it along as they insert the rebar.

Other ironworkers helped with the design. Yrvens Pauyo shared his ideas on dimensions, so "I could hold the dowel on my shoulder instead of up here" (above his head).

Ironworker Foreman Jeff Mayotte, Local 57, tried out a box with three of his crew members, who gave feedback.

The solution: The Ironworkers' Box

Laborers in Photo: Jim Munroe, Patrick Mulkerrin, Bartley O'Malley from Local 223

The Ironworkers' Box is a wooden box, dimensions: 20" x 20" x 11". It has a rope handle for carrying or sliding over rebar.

Carpenters constructed the Box in their carpenter mill.

The Ironworkers' Box raises footing for ironworkers who insert rebar into slurry walls seven feet above the lower rebar mat.

Other workers besides ironworkers can use the Box. The Laborers in the photo at left used it when they had to work with their elbows over their shoulders.

Bartley O'Malley, member of Laborers Local 223, appreciated the Box. "That's a handy thing. We could use some more."

Bright Ideas©

January 2002

#7 Ironworkers' Box

Construction workers' health and safety innovations on the job

Use your brain, not your back. Fix the job, not the worker.

Construction Occupational Health Program
Work Environment Department
University of Massachusetts Lowell
One University Avenue
Lowell, MA 01854
USA

Using this bright idea...

The dimensions of this box were determined for the job that needed to be done. You can change the dimensions to suit your needs. Minimum time and effort were needed to build the box, with immediate payoff on comfort, ability to get the job done, and reduction of risk for injury.

This box is too heavy for one person to carry safely. A crane should lift it to the rebar mat, or two people can carry it. Once it's there, one person can set it up so it's comfortable for the worker.

Date: March, 2002

This research was supported by a grant from the National Institute for Occupational Safety and Health, through the Center to Protect Workers' Rights.

If workers need to handle materials that are long and heavy, like rebar, they can use two boxes next to each other. For example, one ironworker can hold up the end of the rebar dowel behind another ironworker who is inserting the dowel into the wall.

Small supports like this box might have unlimited uses for uneven or unstable surfaces on your construction site. But if you want your handy boxes to stick around, don't let them be mistaken for useless scrap. Label them to be saved!

For more information, or to comment on this Bright Idea...

Phone: (978) 934-3351, E-mail: Scott_Fulmer@uml.edu