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RESOURCE

Health and Safety RESOURCE | August 2008 |

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Inside:

2009 GOSH Conference announces call for award nominations

Oregon GOSH CONFERENCE

You can nominate employers, safety committees, associations, or individuals for the 2009 Oregon Governor's Occupational Safety and Health Conference awards. Applications must be received by Oct. 17, 2008. Nominees will compete with like-sized companies and every employer, regardless of size, is encouraged to apply. The awards will be presented during a ceremony on March 11, 2009, at the GOSH Conference in Portland. For details on submitting nominations for these prestigious awards go to www.assecwc.org or www.orosha.org/conferences.

Resource gets new look, new features

You may have noticed some changes in this month's Resource. We have added some new features and updated our look. What do you think? If you have suggestions or comments, please send them to Resource editor Melanie Mesaros, Melanie.I.Mesaros@state.or.us.

RESOURCE

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For general information, technical answers, or information about Oregon OSHA services, please call 503-378-3272 or toll-free within Oregon, 800-922-2689.

If you want to continue to receive the Resource newsletter, sign up for future issues at www.orosha.org

Administrator's message:
Making sense of the hierarchy of controls

One of the most important tools in occupational health and safety is the hierarchy of controls. Unfortunately, it also is one of the least understood by the people who must make it work – employers and their employees. If you read texts on safety engineering, industrial hygiene, or similar topics, you will find a discussion of the hierarchy. But the details vary. For most, "engineering controls" represent the preferred solution to safety or health hazards. For others, particularly those dealing with chemical exposures, "substitution" of a less hazardous chemical is the highest control; others treat substitution as a form of engineering control.

Many chemical exposure rules reflect a hierarchy that places "administrative" or "work practice" controls on the same level as "engineering controls," above "personal protective equipment" (PPE), the least preferred alternative.

This language can be confusing. I have heard safety professionals describe fall protection systems as "engineering controls" because they have to be "engineered." But fall arrest and fall restraint are personal protective equipment, with all of PPE's limitations.

And rules that equate "work practice" or "administrative" controls with engineering controls often lead people to mistakenly believe that training in safe *individual* work practices (however difficult those practices may be to follow) somehow eliminates the hazard.

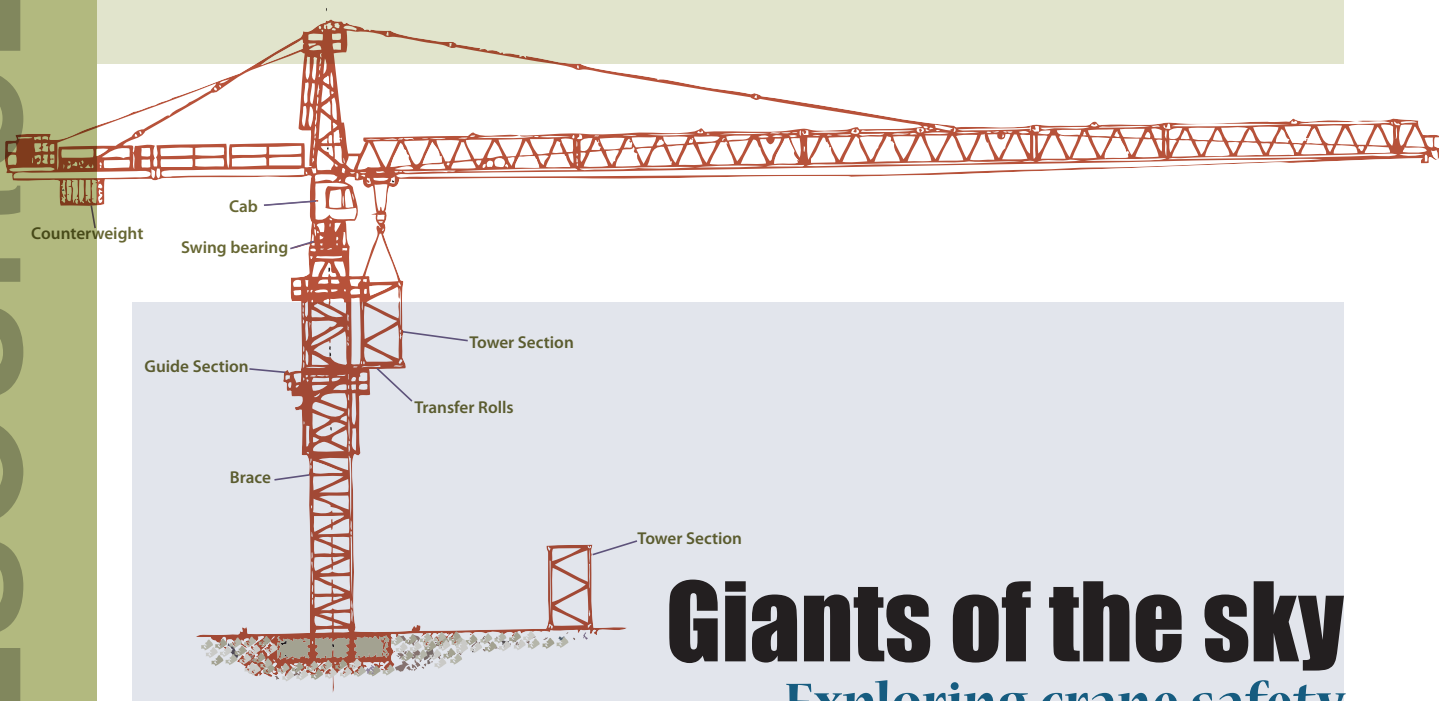
With this confusion even among safety and health professionals, there is little wonder that many employers misunderstand the hierarchy and its value. They at times seem to believe that we prefer engineering controls simply because they cost more (which is often not true).


Michael Wood, Administrator

The basic principles behind the hierarchy are simple: A control that fully eliminates the hazard is better than one that does not, and controls that do not depend on individual employee behavior to work are better than controls that work only if precisely implemented by an employee.

The hierarchy reflects a recognition that human error *will* occur. If a control relies upon error-free performance, it *will* fail. Noise and respiratory hazards exist even when effective PPE is used. And interlocks on guards are better than the guard alone – even though they do not make the guard stronger or more effective when in place and properly used. Instead, they increase the likelihood that it *will* be in place and properly used.

The hierarchy does not really address the control's effectiveness if everything works properly. Instead, the hierarchy improves the control's reliability – by reducing the consequences of individual human error. Should an employee who fails to seal check his respirator suffer lung disease? Should an employee who doesn't reinstall a guard lose her fingers? Or should employees who don't put in earplugs lose their hearing? The hierarchy of controls recognizes that perfection in human performance cannot be attained. But it also recognizes that the price of failure should not be serious injury, illness, or death.



Giants of the sky

Exploring crane safety

By Melanie Mesaros

They soar high above the pavement, standing several stories above the busy Portland landscape. Tower cranes, the multi-tasking workhorses of large construction projects, have also become a symbol of disaster in recent months.

In March, a crane collapse in Florida left two workers dead and five others injured. Earlier the same month, a crane collapsed on the east side of Manhattan in New York, killing seven people and damaging several buildings. In May, another crane collapse killed two workers in New York.

Another massive crane collapse left four workers dead and seven more injured in Houston. The July accident happened when the 30-story crane went down at an oil refinery.

Oregon has avoided a catastrophic crane collapse in recent years – the last one, which occurred in December 1980, left two dead during the construction of the Glenn L. Jackson Bridge on Interstate 205.

"We have fewer towers here compared to places on the East Coast so it's more manageable to oversee," said Sam Drill, Oregon OSHA's safety manager.

Tower cranes dotting the Portland landscape are primarily rentals, owned by manufacturers and operated by private contractors. Engineers work with construction companies and, often times, a safety expert for the crane manufacturer to assemble the crane on site.

M. Mesaros

Crane at work in northwest Portland

Oregon has stricter rules than the federal government when it comes to who can operate a crane. Crane operators in Oregon must have extensive training and renew their certification card every three years. Those who come to Oregon from another state must verify that they've had at least 1,500 hours of experience before being allowed to run a crane. Only 15 states, including Oregon, and seven cities have certification rules. Although some states and cities either already have or are putting such inspection requirements in place, they are not typical.

Drill says the employer has a tremendous responsibility when it comes to training and crane maintenance.

"If a person tells their employer they are trained, the employer has to make sure that's accurate," he said.

> **"A crane is a big responsibility. You work with your stomach in your throat more from rigging than the possibility of crane failure. I've had a lot of close calls."**
>
> *– Jeff Weaver, Oregon OSHA Safety Compliance Officer*

Oregon OSHA conducts inspections after an accident, if a worker safety complaint has been filed, or if a company operating a tower crane is scheduled for an unannounced inspection.

Jeff Weaver spent 15 years working as a tower crane operator in the private sector before coming to work at Oregon OSHA as a safety compliance officer. He says he never worried about the crane tipping over while he was moving loads.

"You know how it's been taken care of and how it was put together," Weaver said. "You have to know the details if you are an operator."

Weaver says he could spend up to 14 hours in a cab, often a tight space with a seat made out of plywood, calculating weights and limits as he executed each lift. He says not all cabs are plush. The plywood seats are found in older, self-erecting cranes.

"A crane is a big responsibility," he explained. "You work with your stomach in your throat more from rigging than the possibility of crane failure. I've had a lot of close calls."

Weaver's expertise is now being put to use on Oregon OSHA inspections. A few of the things he looks for include the engineering of a crane's concrete base, the serial numbers on parts, and a check of bolts, pins, and wire ropes.

"I want to look over the operator's dailies and weeklies," said Weaver. "When I climb the tower, I don't want to hinder the process so I try to do it in the off time."

Limits on wind speed can also force crane work to stop. Oregon OSHA rules require cranes to have a wind velocity device that sounds an alarm if winds exceed safe operating limits. These rules are more stringent than what most states require.

"When it's windy, you feel everything up there," Weaver said. "I had a reputation for shutting down jobs because it wasn't safe."

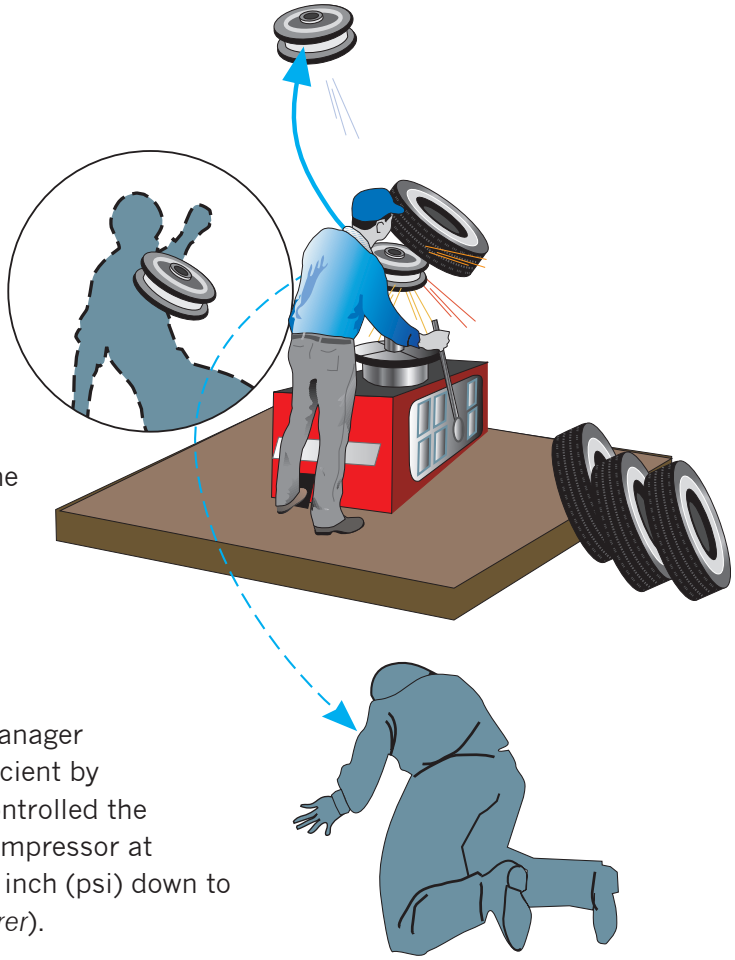
"We haven't had a lot of tower crane mishaps and much of the credit goes to employers," said Drill. "But that doesn't mean we shouldn't raise the overall awareness level and continue to double check ourselves."

Accident Report

Accident type | Head trauma
Industry | Automotive – Tire shop
Employee job title | Mechanic

Description of accident

The employee arrived at a tire store in Clackamas and was given the task of inflating and mounting four antique tires on single-rim wheels that were specially built. He started to inflate one of the inner tubes inside the tire, which was mounted on a machine built for that purpose. However, the tire exploded, struck the employee in the chest and face as it took off, and hit the ceiling under great pressure. The employee suffered a traumatic head injury, lost an eye, punctured a lung, and had fractures to his upper torso.



Investigation findings

The investigator found the assistant manager wanted to make the machine more efficient by removing the safety relief valve that controlled the direct air pressure coming from the compressor at approximately 100 pounds per square inch (psi) down to 40 psi (*recommended by the manufacturer*).

In this case, the employees were unaware of the machine's safety device being removed.

"The employer has to know that the machine is in correct working order and that no employee, even a manager, should touch any piece of machinery unless they have consulted with the machine manufacturer for recommendations," said Oregon OSHA investigator John Murphy. "At that time, they need to contact the service representative to fix the problem. They shouldn't try to repair it themselves."

Applicable standards

OAR 437-001-0760 (1)(b)(D)

Employers' responsibilities are to make sure workers are properly instructed and supervised. The employer must also take all reasonable means to require employees not to remove, displace, damage, destroy or carry off any safety device, guard, notice or warning provided for use.

Oregon employers alerted to combustible dust hazard

Imperial Sugar plant explosion, Port Wentworth, Ga., February 2008

Earlier this summer, Oregon OSHA mailed a letter to 2,400 employers warning of the potential danger of dust explosions. In February, a fire and explosion at a sugar plant in Georgia left 13 dead and others critically injured.

Dust explosions are also to blame for several deaths in Oregon in the last decade. At Commercial Furniture in Roseburg, an employee suffered second- and third-degree burns on his hands and arms from a dust fire. Two workers were changing a bag filter on a powder coating line for office furniture when it happened in 2006.

A worker at Ace International in Albany died in 2003 after suffering burns and inhaling toxic, superheated air. A defective piece of electrical equipment created a spark that ignited wood flour and dust.

Dust build-up from flour, feed, wood, rubber, plastic, coal, metal, and more can burn in air and may exist in a variety of industries. Any substance that burns in air as a solid can also catch fire in dust form, provided there is an ignition source and oxygen.

Oregon OSHA encourages employers to call Consultation Services for help in identifying combustible dust hazards (see Consultation Services on the Web for the phone number of the Oregon OSHA office in your area). The agency will also be adopting an inspection emphasis program to allow trained inspectors to focus on the dust hazard. The risks are outlined in Oregon OSHA's Hazard Alert, which was also included in the employer mailing and can be found on-line, www.orosha.org/pdf/hazards/2993_05-2008_combustdust.pdf.

New pamphlet provides safety tips for nail salon workers

On a typical visit to a nail salon, you might spend two hours exposed to the strong smell of chemicals while getting a manicure or pedicure. But thousands of Oregon women, many of them immigrants from Vietnam, tolerate the fumes day after day.

Oregon OSHA is now offering a pamphlet, both in English and in Vietnamese, to guide workers on the safe handling of chemicals. It features advice about ventilation and protective equipment such as gloves and masks. You can find the brochure online at www.orosha.org.

News Briefs – continued

Oregon OSHA to offer new safety cultural awareness workshop

A new Oregon OSHA workshop titled "Safety Training and Your Multicultural Workforce" aims to educate employers and workers on practical ways of overcoming language and cultural barriers. It will also provide an understanding of how to form an effective training team to achieve safe work practices.

According to the Center for Disease Control, Hispanics are among the fastest-growing segments of the U.S. workforce. The proportion of on-the-job deaths among foreign-born Hispanic workers has also increased over time.

Daily requests from business owners and the growing number of Hispanics in the workforce led to the class inception, said Tomás Schwabe, a senior safety and health instructor with Oregon OSHA. He says one of the concepts of the four-hour class, scheduled to be taught in Beaverton on Aug. 12, and Eugene on Sept. 17, will deal with hierarchy. In American culture, the hierarchy is relatively flat, but in Latino and Asian cultures, it's very steep.

PESO
Programa en Español de Seguridad e Higiene en el Trabajo de OR-OSHA
OR-OSHA Occupational Safety and Health Program in Spanish

See the list of new PESO classes in the *Oregon OSHA Public Education Workshop Schedule*, which comes out in August 2008. Four of the five PESO classes will be taught in Spanish.

"In the U.S., you are often asked your thoughts from the higher ups," Schwabe explained. "When that happens here, it's total culture shock. You would be feeling really strange, weird, when you are 'nobody.' The workers may not provide their opinion when asked because it's culturally inappropriate for workers to provide that kind of information to those that are higher up."

For more information about the course and how to sign up, go to the "Education" section at www.orosha.org.

Congratulations to these new Oregon SHARP employers:

- Corvallis Tool Company of Philomath
- Alliant Systems of Beaverton
- Slayden Construction of Stayton
- City of Portland's Bureau of Environmental Services Construction Field Operations
- Deschutes County Road Department

Going the distance

Meet a leading Oregon safety professional

***Ron Richardson,* plant personnel manager and safety director for *Dillard Plywood at Roseburg Forest Products*. The company employs 400 workers at its Dillard plywood operation.**

Ron Richardson adjusts a lockout/tagout system.

What type of hazards do employees at your plant work with?

Machine guarding, confined space issues, lockout/tagout, and fall protection. Plus, we have more than 30 forklifts operating in and around the plant.

How long have you been with the company and what has changed in that time?

I started with the company 30 years ago in the Quality Control department and then moved onto a supervisor position. About nine years ago, I took over as plant personnel manager and three years after that, I had the safety director position added to my duties.

Our safety program has changed significantly over the past six years. It is now driven by the employees on the floor, not from the top down. Our employees own their safety program. It's their program and when they come to me with concerns, I will always tell them that I will check into the problem; and if they have not heard back from me in five days, they are to come and see me again. If I have not returned to the employee with an answer by the end of the fifth day, the employee comes back to me and holds me accountable. I also try to form a partnership with the employee in finding a solution to different problems by asking them what they would like to see happen or how they would like to see the problem fixed. I feel that no one understands how the equipment works better than the employee operating it. This gives the employee ownership in the safety of their equipment.

As I walk through our two plants at Dillard Plywood, I could be stopped a number of times by employees who bring up issues or ask me to look at something. By using this method, I'm able to close the loop with the employees and their concerns.

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How long did it take for you to become a Safety and Health Achievement Recognition Program (SHARP) employer and how has it changed the way you operate?

It took us four to five years. We used to have a plant full of what I call "CAVE" people – Citizens Against Virtually Everything. We used to have safety committee meetings that lasted three to four hours and they were non-productive. We were also very poor about providing safety training for our safety committee and the employees on the plant floor. Now, our safety committee meetings last about 40 to 50 minutes and they are highly productive. We were able to send our safety committee to training on how to run an effective meeting. We now have employees who are concerned about safety on the work floor and how we can improve our methods of our operations. We also have our own in-house trainers in most areas, such as fork lifts, fall protection, man lifts, confined space, respiratory, accident investigation, and hazard identification. We take advantage of the training the SHARP Alliance puts on. The Sharp Alliance, we have found, provides an excellent network of other companies to give you support when problems come up.

Richardson has daily contact with employees on the plant floor like Jimmy Roberts, a spreader tech.

At this point, I feel we have one of the best operating safety committees in the state. Our safety committee has been asked to put on classes on how to run an effective committee and others have contacted us for mentoring.

Do you have any safety incentive programs?

We used to have a program where employees received a $500 bonus in November if they went the entire year without an incident, but we discontinued that about five years ago. There was a lot of controversy over ending that program. We were concerned that by ending it, our incident rate would go up, but our incident rate has continued to fall. We have had plant-wide barbecues to thank employees for the efforts they put forward to make our safety program a success. We started having safety raids after the program was dropped, where all of our upper management team would show up at a plant site and perform a safety audit of the plant. In this audit, we cover everything from guarding equipment to record keeping. When you have 40 people show up, safety directors all the way up to VPs of the company, and they start doing safety inspections, what does that tell the employees on the floor? The company cares about safety and its employees. After an audit, we would hold a debriefing with the plant manager on what we had found. This was not used as a disciplinary tool but allowed us to take a critical look at the safety programs in our plants.

Richardson, who manages the plant's safety program, says the program is driven by employees, not top down.

What advice do you have for other safety managers hoping to make a difference?

Communication is so important. Listen to your employees and listen to the people that run the equipment. Take action on what you hear. At least get back to them and have your door open. You have to be willing to take criticism yourself. If I cut a corner in a marked walkway, they tell me. Unless we are as vulnerable as the employees working on the floor of our plants, we are never going to move forward. Safety has to become as important to your management team as it is to the employee working on the floor. We have to practice what we preach. We also need to understand that a safety committee is a team with both management and the employees who run the equipment working together. There are no secrets when it comes to safety.