OREGON HEALTH AND SAFETY
RESOURCE
June, July, August 2000

June is National Safety Month

Redesign a worksite to protect a valuable resource — workers

OR-OSHA worksite redesign grants can go a long way toward changing the way work is accomplished throughout an industry to make it safer for workers. Two successful examples are Kaiser Permanente Northwest's blood-draw workstations and Shangri-La's automated nailing machine.

Blood-drawings caused headaches for KPNW

In 1998, Kaiser Permanente Northwest (KPNW)got a worksite redesign grant of about $103,000 from Oregon OSHA to research and redesign blood-draw stations. Despite many well-intentioned tries in the past, KPNW had not come up with a blood-draw station that satisfied needs for less-awkward working positions, variations in staff and patient size, sharps disposal, and supply storage. Furthermore, there were concerns about privacy and patients fainting.

With a consultant offering assistance, KPNW set out to design a phlebotomy workstation that would do the following:

- reduce risk of muculoskeletal injury
- reduce risk of needlestick injury
- accommodate a range of body sizes
- improve comfort, efficiency, and customer service

KPNW began with a team consisting of representatives from its employee health and safety, regional and national facilities, and regional laboratories, along with a consultant.

KPNW has researched, designed, and engineered its phlebotomy workstation over the past year. It expects to have the final design of the workstation available to the public in July. The project has generated a lot of interest in the medical community.

The research included Web and library literature and phlebotomy instruction manuals that documented medically correct blood draws. The team contacted several health-care institutions to learn about their phlebotomy workstations.

*See **"Redesign successes,"** page 12*

New rules take effect for agricultural labor housing

Issues raised by OR-OSHA stakeholders during the 1999 growing season precipitated changes to the agricultural labor housing rules. Committee members representing labor, the agricultural community, elected officials, and affected state agencies revised OAR 437-004-1120, Agricultural Labor Housing and Related Facilities, in Division 4/J, Agriculture/ Work Environment. The new rule became effective June 1.

Some subjects were regrouped into more logical categories and wording was changed to make the rule easier to follow and enforce. Several definitions were changed to reflect current practices and to match definitions used by other state regulators, such as the Building Codes Division.

*See **"Labor housing,"** page 2*

What's inside . . .

"Labor housing," from page 1

A few of the changes

- One-room living areas no longer need a second emergency exit
- Owners will not be cited for housekeeping practices of housing occupants
- Recyclable materials that are returnable for a refund are not considered garbage or refuse
- Operators must post street numbers so that responding emergency vehicles can see them from the street
- Requirements for toilets, handwashing, and bathing facilities according to the number of occupants must be posted on the unit

Effective Oct. 1, 2000: Housing operators will be required to provide a mattress or pad for any bed or bunk and the bed or bunk must keep the mattress at least six inches off the floor. Each unit will be required to have a working smoke detector at the time of initial occupancy. Tents must be made of, or treated with, flame-retardant materials.

A copy of the rule is available on our Web site, www.orosha.org, or from the Resource Center, (503) 947-7447.

Operators must register labor housing

Agricultural labor housing must be registered with OR-OSHA before it is occupied and must be re-registered each year.

Agricultural labor housing that has not been registered before or for which registration has lapsed, must have a pre-occupancy consultation by OR-OSHA in order to receive a registration certificate. There is no cost for registering housing and no cost for pre-occupancy consultation; however, if OR-OSHA's consultation report calls for changes, the owner of the housing is responsible for making the changes. Owners should call OR-OSHA prior to occupancy to arrange for a consultation.

OR-OSHA began inspecting agricultural labor housing May 1 and will fine owners whose occupied agricultural labor housing is not registered. Registration is required under OAR 437-004-1120(5)(b). The operator of an unregistered camp can be fined up to $7,000.

Registration certificates must be displayed where housing occupants and OR-OSHA can read them.

A checklist that will help prepare housing owners for a pre-occupancy consultation is available. Call the OR-OSHA office nearest you.

Agricultural labor housing registration materials will be mailed to those who request them by phone from OR-OSHA, (503) 378-3274, and they may be picked up at all OR-OSHA field offices, weekdays between 8 a.m. and 5 p.m. ■

What's next for JEP

By Penny Wolf-McCormick, Health Enforcement Manager, Oregon OSHA

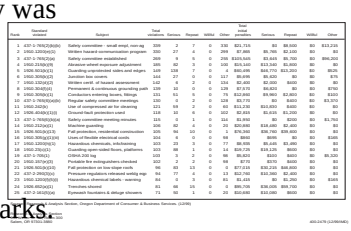
The idea

In the spring of 1998, Oregon OSHA administrator Peter De Luca, attended a Construction Safety Summit meeting in Portland and presented an idea: Bring together industry, labor, and government to jointly solve safety and health problems in the construction industry. The idea was well-received and the Joint Emphasis Program (JEP) was born.

It was Karen Barnack, northern regional manager for Oregon OSHA, who got the assignment to make it happen.

"We didn't need to make many calls," said Barnack. "The idea really caught on with the Construction Safety Summit people, and the group's enthusiasm got JEP up and running right away."

The group decided JEP would design and implement focused joint-training sessions. Ladder safety was chosen as the first training subject. Leslie Anderson, OR-OSHA trainer, and Frank Upham, safety director for SD Deacon, developed a training program with input from the group. The ladder safety program was well-attended and received high marks.



"Leslie and Frank did an outstanding job, under a very tight time line. They pulled together an excellent training program," said Barnack.

Where do we go from here?

After the success of the ladder safety training classes, JEP attracted some new partners. Associated General Contractors, represented by Ken Greenhill, was one of those partners.

"I thought it was an excellent format for developing training, since it involved all the key players," he said. "I felt strongly that JEP was something AGC should be involved in."

The next subject chosen by the group was respiratory protection, a challenging topic to make attractive for the classroom setting.

"Industrial hygiene issues are not easily recognized," said Penny Wolf-McCormick, health enforcement manager for OR-OSHA. "People easily recognize unprotected falls or dangerous ladders but rarely think about the potential for silica exposure in the dust cloud they're working in."

See "What's next for JEP," page 3

Administrator's Message

Peter De Luca

Summer is upon us! It is a busy time of year. We are building at a record pace. We go on vacation, clogging roadways. We plant and harvest crops. We process and package the bounty of our fields, forests, and ocean. Unfortunately, summer is also the time of year when we have the most accidents.

No matter who you are, no matter what you do, you are at risk. The good news is that while you cannot eliminate all risks, you can certainly do a lot to minimize them. When you are on the highway, drive defensively. Remember that more workers are killed by vehicle crashes than any other single cause. When you are on the job, take a little extra time to observe safe practices.

Right now is an excellent time to review what it takes to be safe at work. This is also an excellent time for a refresher class in defensive driving. Employees should work safely — even if it means taking a little extra time. Managers and safety professionals should assess how to make workplaces and workers more safe. What better time to do this than during June — National Safety Month.

"Slow down and live" are good words for the highway. But they apply at work as well. When we get busy, there is a natural tendency to hurry. Get that building up! Raise that steel structure! Pave that road! Harvest that timber! Two things can happen when we hurry — we get sloppy and we cut corners. This can have disastrous consequences.

During National Safety Month, take time to examine your workplace. Is it safe? Are all the right systems in place? Has your safety committee met? Has all the necessary training taken place? All the money saved by cutting corners can be lost as the result of one serious accident or incident. So, does it really make sense to hurry?

Slow down and live! Have a good summer. Have a productive summer. But be sure you have a safe summer. Please, BE CAREFUL OUT THERE! ■

"What's next for JEP," from page 2

Using insights gained from the ladder safety classes, the group designed and teams, made up of industry representatives and OR-OSHA staff, delivered a respiratory protection training program at several locations around the state.

JEP to focus on scaffold safety

JEP has selected scaffold safety as its next subject. A training course is being designed. Watch *Resource* and other construction trade publications for dates and locations of the classes.

"I had high hopes for JEP," said De Luca. "I saw it as a means to improve communication and understanding between the construction industry and one of its regulators. I'm happy to say that my hopes have been realized. It has been a very worthwhile undertaking."

If you are interested in being a JEP participant or want more information about the program, contact Penny Wolf-McCormick in the Portland field office, (503) 229-5910. ■

RESOURCE

DEPARTMENT OF CONSUMER & BUSINESS SERVICES
Oregon Occupational Safety & Health Division

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NIOSH issues SCBA cylinder alert

The National Institute for Occupational Safety and Health (NIOSH) recently notified users of self-contained breathing apparatus that certain aluminum-alloy SCBA cylinders could rupture, especially during filling; however this is not a recall.

The SCBA cylinders in question are high-pressure aluminum seamless and aluminum composite hoop-wrapped cylinders made of aluminum alloy 6351-T6. Sustained load cracking in the neck and shoulder areas has caused ruptures in a small percentage of these cylinders, and their rupture could cause injury, death, or property damage.

The DOT specification for the suspect cylinders is DOT-3AL. Check the labels of all aluminum-alloy 6351-T6 cylinders for these exemption numbers:

- Seamless aluminum: DOT-E 6498, 7042, 8107, 8364, and 8422.
- Aluminum-lined composite (hoop-wrapped): DOT-E E 7235, 8023, and 8115.

If you find any aluminum alloy 6351-T6 cylinders with these numbers, contact the Compressed Gas Association, (703) 412-0900, x799, or go to the association's Web site, www.cganet.com. You may also contact Luxfer Gas Cylinders, (909) 684-5110, or go to the company's Web site, www.luxfercylinders.com. Both the association and Luxfer can provide you with a list of precautions to take if you find any of the suspect cylinders.

NIOSH and the U.S. Department of Transportation have found 12 ruptures of these tanks in the United States. Six of the ruptures involved SCBA tanks made before 1989 by Luxfer Gas Cylinders. Luxfer cylinders manufactured in the U.S. after 1988 are not subject to this notice, as Luxfer quit using aluminum alloy 6351-T6 in 1988. ■

Bloodborne pathogens standard policy updated

by Chris Ottoson, Health Analyst, OR-OSHA

Federal OSHA estimates that nearly 600,000 needlestick injuries occur annually. This number takes into account unreported exposure incidents in the range of 40 percent. Safer medical devices are available commercially, making it possible for new technology to play a role in reducing injury rates.

In November 1999, federal OSHA released an updated version of its policy directive for enforcement of the bloodborne pathogens standard, 1910.1030. Oregon OSHA is using this enforcement policy update.

The bloodborne pathogens (BBP) rule has not been changed; federal OSHA is simply emphasizing provisions that employers must address for compliance.

"Bloodborne pathogen" includes any microorganism present in human blood or other potentially infectious material, that can cause disease in persons exposed to blood containing the pathogen. Among the updated appendices to the directive are the Center for Disease Control guidelines specific to the human immunodeficiency virus (HIV), hepatitis C, and immunization of healthcare workers.

Within the healthcare industry are a variety of work relationships that create multi-employer worksites: employment agencies, personnel services, home health services, independent contractors and physicians in independent practice. The directive describes specific responsibilities for each of these groups.

The BBP rule is performance-based, which means that the requirements outlined in the regulatory text can be complied with in various ways among employers. The test of a program's success is in the performance of responsible employees and managers. It's not a one-way-fits-all-situations rule.

For example, the BBP rule requires each employer to establish an exposure-control plan for their employees who have occupational exposure to bloodborne pathogens. A key provision in the BBP rule puts it like this:

"The exposure-control plan shall be reviewed and updated at least annually and whenever necessary to reflect new or modified tasks and procedures."

Other examples of the flexibility of the updated directive include engineering and work-practice controls: these must be used to eliminate or reduce employee exposure. Engineering controls must also be "examined and maintained or replaced on a regular schedule to ensure their

*See **"Bloodborne pathogens,"** page 5*

2000 Central Oregon Safety and Health Conference

Eagle Crest Resort, Redmond, Oregon September 6-8

Helping businesses manage safety programs to improve their bottom line is one of the goals of a safety and health conference scheduled for Redmond's Eagle Crest Resort, September 6-8.

The Central Oregon Safety and Health Conference, sponsored by Oregon OSHA and the Central Oregon Safety and Health Association, will offer seminars to help businesses manage their safety and health programs along with classes that will fulfill OR-OSHA required training.

"There are so many indirect costs associated with workplace injuries and illnesses," said Cory Stengel, an OR-OSHA consultant in Bend and a member of the conference planning committee, "that we want to show managers and CEOs that a managed safety and health program can save their companies money and increase production."

Classes will include "Value-Based Safety" and "Integrated Disability Case Management," along with anger management, dealing withviolence in the workplace, and a host of ergonomic and safety and health topics.

Robert Pater, director of Strategic Safety Associates in Portland, will deliver the keynote address, "Management Involvement and Commitment."

Cost for the three-day conference is $125, with price breaks for more than three attendees from one company and attendance for one day. Opportunities for exhibiting safety and health equipment and programs are also available.

For more information and to be added to the mailing list to receive a registration packet and program, contact the OR-OSHA Conference Section, (503) 378-3272 (V/TTY), send e-mail to oregon.conferences@state.or.us, or visit OR-OSHA's Web site, www.orosha.org. ■

"Bloodborne pathogens," from page 4

effectiveness." In Appendix B of the directive, there are forms that help users evaluate engineering controls. With respect to housekeeping, the employer must "determine and implement an appropriate written schedule for cleaning and decontamination."

OR-OSHA evaluates compliance with performance-based rules by reviewing how each employer has addressed such requirements based on the employer's facilities and circumstances. We interview employees to find out what training they have received. We want to know if there have been any exposure incidents and how these have been handled. If there were exposure incidents, what changes have been made in work practices to prevent a similar incident? Could a new medical device prove effective in reducing or eliminating exposure? What methods has the employer used to evaluate medical devices, select safer ones, and update equipment?

To learn more about bloodborne pathogens, contact Standards and Technical Resources Section or Consultative Services, or attend an OR-OSHA workshop. Find Oregon OSHA at www.orosha.org on the Internet, or call us, (800) 922-2689. Private consultants and workers' compensation insurance carriers also provide useful information and resources.

Use the updated directive to assist you in complying with the bloodborne pathogens rule. It's a valuable resource to you. It's very useful to us as well! ■

Gary Beck, Safety Analyst, Oregon OSHA Enforcement

by Cheryl Mushaney, Oregon OSHA Administrative Assistant

As the manager of enforcement, Barry Jones has put together a solid team in the central office to assist all enforcement and agency staff. Sharon Schaberg, administrative assistant, supports the team, which includes: Tracy Weeks, enforcement analyst, Chris Ottoson, health enforcement analyst, and Gary Beck, safety enforcement analyst.

Gary Beck writes enforcement policies and program directives to be used by Oregon OSHA safety compliance officers. Gary reviews the reports from the field to ensure consistency throughout the state. He answers questions from compliance officers, support staff, and the public.

Gary is involved with the development of short- and long-range goals for the agency through the performance agreement between Oregon OSHA and federal OSHA. He tracks statistical data on all areas of enforcement and provides information to Oregon OSHA managers in the field and at the central office. Gary has been working with federal OSHA on the development of a new system for entering and tracking OSHA activities.

While working as an appeals specialist, Gary provided feedback to compliance officers and their supervisors on appealed-case issues. He worked with the Information Management Division of DCBS on the development of tracking systems and programs to evaluate the work of the section.

Gary began his career with Oregon OSHA as a compliance officer in the Portland field office. But throughout all this, Gary has maintained a second career. You may also refer to him as Major Gary Beck of the United States Army Reserves.

You might say Gary's military career began very early: His family moved every three years. His father, retired Lt. Col. John A. Beck, was "career army," and followed orders that took him around the country - and out of it - from Fort Lewis, Wash., to Italy.

When he reached college age, Gary left the family in Panama to attend Oregon State University. He worked summers on a ranch in Eastern Oregon. His senior year was disrupted when he met his bride, Beverly Busby. After graduating, the couple married in Hawaii in September 1980. Gary found career opportunities at a premium and, as ranch work was not his chosen career path, he joined the Army in 1982.

Gary Beck

Bev continued her education wherever Gary was stationed. In nine years of regular Army, Gary and Bev traveled around Europe from their base in Germany. When their son Bryan was born, they decided the nomadic life was not for them. They came back to Oregon, where Gary joined the Army Reserve.

The Becks now live in Monmouth, where Bev works at Western Oregon University. Bryan attends Talmadge Middle School and is active in sports. Gary has coached Little League for four years; last year Bryan was on the Little League All-Star team. This year Gary and Bryan are taking some time off from baseball to relax. The family is planning a trip through Oregon this summer, to revisit some of their favorite places. Gary usually keeps his golf clubs nearby "just in case" and keeps the family dogs around to get him moving. Long-range goals include traveling across the western United States.

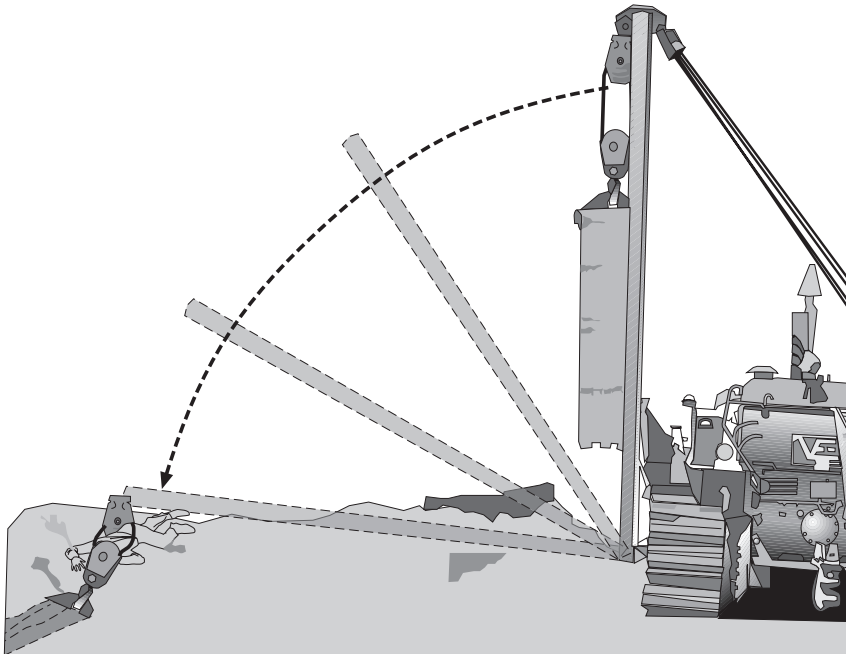
People are one of Oregon OSHA's best resources, and Gary Beck is an outstanding example. ■

SAFETY NOTES

Department of Consumer & Business Services
Oregon Occupational Safety & Health Division
Salem, OR 97310

Fatality Report

Accident type ..... Crushing
Industry ..... Pipeline construction
Employee job title ..... Laborer



Description of accident

A crew was laying natural gas pipeline on a summer morning. Work had been halted as the boom operator and another equipment operator adjusted the boom brakes on a Caterpillar Side Boom by turning the adjuster bolt. When they finished, the operator called out a "stand clear" warning and began lowering the boom over the excavation area to pick up pipe connectors.

A laborer jumped beneath the boom to grab the boom sling and guide it so that it didn't damage the pipe below it. The operator pulled back on the boom's brake lever, but the brakes failed, and the downward motion of the boom was not slowed. The laborer was crushed beneath the boom.

The operator was able to raise the boom off the victim, but he was already dead. A fire/rescue station, the sheriff's department, and OR-OSHA were notified.

Investigation findings

Investigators found that the brakes had been applied, but had failed because the Side Boom's brake-adjuster rod was broken. The operator had made requests to have a qualified mechanic make brake adjustments on the equipment, but no action had been taken. The employees who adjusted the brakes were not qualified to do so.

In addition, means of egress from the excavation was not provided. The excavation, which was more than four feet deep, had only a dirt ramp for employee egress, and the ramp was more than 25 feet from where the employees were working.

Applicable standards

The employer was cited and fined for a serious violation of the following:

- CFR 1926.651(c)(2) - The employer did not ensure that employees working in an excavation more than four feet deep be provided a safe means of egress.

To prevent similar accidents

Ensure that equipment is maintained by qualified personnel.

Heed employee advice about necessary equipment maintenance.

If you are an employee operating dangerous equipment, make oral and written requests for repairs that are necessary to protect those who work around the equipment. Take responsibility for the equipment you operate and refuse to operate unsafe equipment.

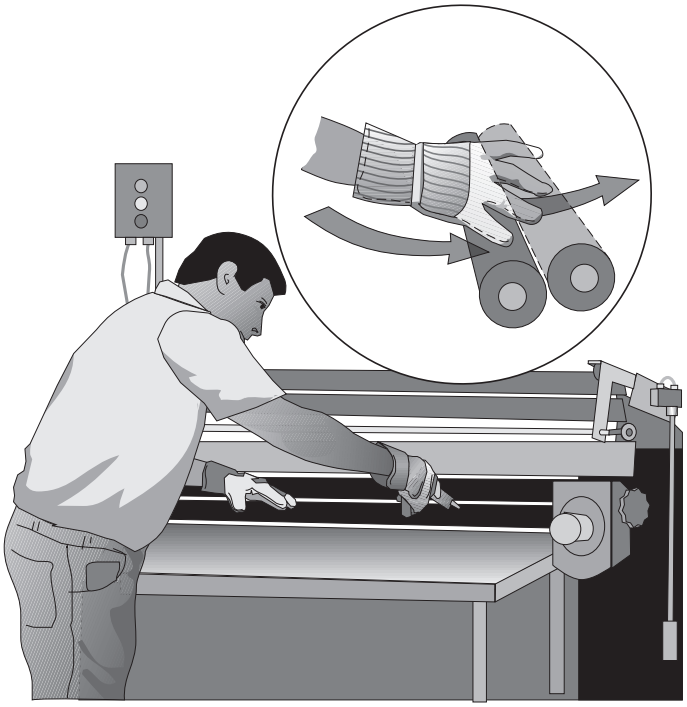
Test repaired equipment before you allow employees to do tasks that could harm or kill them if the equipment fails to work properly.

SAFETY NOTES

Department of Consumer & Business Services
Oregon Occupational Safety & Health Division
Salem, OR 97310

Serious Disabling Injury Report

Accident type ..... Crushing
Industry ..... Plywood manufacturing
Employee job title ..... Laborer



Description of accident

A worker was applying grease to spreader rollers with his gloved hands. He had turned on the machine to grease the moving parts. The spreader rollers, which are about a quarter-inch apart, caught his righthand glove and pulled his hand into the rollers up to his wrist. The worker was able to stop the rollers by striking the emergency bar above the rollers, but his right hand remained caught between the rollers. He yelled for nearby workers, who called rescue personnel.

The victim's hand was not extricated from the rollers for 40 minutes. The maintenance supervisor assisted fire department responders by cutting loose the rollers that held the victim. He was taken to a hospital for treatment, which included surgery.

Investigation findings

The victim, whose primary language is Spanish, had not been adequately trained for the job of cleaning and greasing the spreader rollers, as he was unfamiliar with the company's lockout/tagout procedures. When the company's safety director had made lockout/tagout training presentations at safety meetings, he had done so in English, relying on the unofficial translation services of other Latino crew members, with the assumption that at least one was bilingual.

The safety director relied on the maintenance staff to monitor employees on the job. About a month before the accident, when a maintenance worker saw the victim cleaning and greasing a spreader without locking it out, he showed the victim the lockout box. However, he did not provide instruction on lockout procedures, and no follow-up was done. In addition, electrical switches installed in wet locations were not enclosed in waterproof enclosures.

Applicable standards

The following serious violations occurred:

- OAR 437-001-0760(1)(a) — The employer must provide adequate instruction and supervision to employees.
- CFR 1910.147(c)(4)(I) — The employer must develop, document, and utilize procedures for the control of potentially hazardous.
- CFR 1910.305(e)(2) — Switches, circuit breakers, and switchboards installed in wet locations shall be enclosed in weatherproof enclosures.

To avoid similar accidents

Provide employee orientation and all training in the primary language of the employee.

Ensure that proper lockout/tagout procedures are followed.

SAFETY NOTES

Department of Consumer & Business Services
Oregon Occupational Safety & Health Division
Salem, OR 97310

Fatality Report

Accident type ..... Fall
Industry ..... Roofing
Employee job title ..... Roofer

Description of accident

Five employees of a roofing company had been removing cedar shingles and replacing them with plywood sheeting and composition roofing at a two-story home on an afternoon in mid-January. The crew had stopped work for lunch and returned to work about 1:30 p.m. While four of the crew went up on the roof, the victim remained on the ground to "push plywood," which means the victim pushed and slid sheets of plywood up an extension ladder into the hands of the crew members on the roof. When enough sheets of plywood had been moved to the roof of the house, the victim also ascended the ladder to the roof. Another crew member saw the victim on the roof, bent down near the top of the extension ladder, as if adjusting it. Shortly after the other crew member turned around, he heard a loud noise, and upon facing the ladder again, he found that the victim had fallen about 17 feet to the ground.

The roofing crew climbed down to assist the victim and the crew leader called 911 on his cell phone. The crew administered first aid, immobilizing the victim's neck and ensuring that breathing passageways were clear. Emergency medical personnel arrived and took over, transporting the victim to a hospital where he died later that day of traumatic head injuries.

Investigation findings

The victim had been hired over the telephone on the day of the accident and had received no new-employee orientation. He had worked for the company about a year previously and had been fired for absenteeism. The victim had not received adequate instruction or supervision in ladder use. Employees at the site had some fall-protection equipment, but it was not being used according to the manufacturer's instructions, and the victim was not using fall protection at the time of the accident, although the roof edge was more than 17 feet high. The ladder was not tied off at the time of the accident. The company's written safety policies were not followed, and safety-committee meeting minutes had not been provided to employees.

Applicable standards

The employer was cited for the following serious violations:

- CFR 1926.1060(a) - The employer must provide training for each employee using ladders.
- OAR 437-001-0760(1)(a) - The employer must provide adequate instruction and supervision for all the employees.
- OAR 437-001-0765(6)(b)(A) - The employer must make safety committee meeting minutes available to all employees.

To prevent similar accidents

Ensure that every employee who works with ladders has adequate and documented safety training.

Ensure that ladders are tied off securely, that employees have fall-protection equipment, and that the employees know how to use that equipment.

Department of Consumer & Business Services
Oregon Occupational Safety & Health Division
Salem, OR 97310

How well would you measure up?

Here's a list of the top 25 most-frequently-violated Oregon OSHA standards cited during inspections opened in 1998. Why not use this as a checklist to see how your operation would stack up if you were inspected today? Similar lists specific to construction, agriculture, and logging are available from the Research & Analysis Section, Oregon Department of Consumer & Business Services, (503) 378-8254, or on the Web, www.cbs.state.or.us.

Top 25 most-frequently-violated Oregon OSHA standards cited during inspections opened in calendar year 1998.

Rank	Standard violated	Subject	Total violations	Serious	Repeat	Willful	Other	Total initial penalties	Serious	Repeat	Willful	Other
1	437-1-765(2)(b)(b)	Safety committee - small empl, non-ag	339	2	7	0	330	$21,715	$0	$8,500	$0	$13,215
2	1910.1200(e)(1)	Written hazard-communication program	330	27	4	0	299	$7,865	$5,765	$2,100	$0	$0
3	437-1-765(2)(a)	Safety committee established	269	9	5	0	255	$105,545	$3,645	$5,700	$0	$96,200
4	1910.215(b)(9)	Abrasive wheel exposure adjustment	185	82	3	0	100	$15,140	$13,340	$1,800	$0	$0
5	1926.501(b)(1)	Guarding unprotected sides and edges	149	138	7	0	4	$60,495	$46,770	$13,200	$0	$525
6	1910.305(b)(2)	Junction box covers	144	27	0	0	117	$5,695	$5,620	$0	$0	$75
7	1910.132(d)(2)	Written certif. of hazard assessment	142	6	2	0	134	$2,400	$2,000	$400	$0	$0
8	1910.304(f)(4)	Permanent & continuous grounding path	139	10	0	0	129	$7,570	$6,820	$0	$0	$750
9	1910.305(b)(1)	Conductors entering boxes, fittings	131	51	5	0	75	$12,860	$9,960	$2,800	$0	$100
10	437-1-765(6)(a)(b)	Regular safety committee meetings	130	0	2	0	128	$3,770	$0	$400	$0	$3,370
11	1910.242(b)	Use of compressed air for cleaning	121	59	2	0	60	$11,230	$10,830	$400	$0	$0
12	1926.404(b)(1)(i)	Ground-fault protection used	118	10	6	0	102	$2,815	$1,615	$1,200	$0	$0
13	437-1-765(6)(b)(a)	Safety committee meeting minutes	115	0	1	0	114	$1,950	$0	$200	$0	$1,750
14	1910.212(a)(1)	Machine guarding	106	82	4	0	20	$20,880	$18,480	$2,400	$0	$0
15	1926.501(b)(13)	Fall protection, residential construction	105	94	10	0	1	$76,360	$36,760	$39,600	$0	$0
16	1910.305(g)(1)(iii)	Uses of flexible electrical cords	104	6	0	0	98	$860	$695	$0	$0	$165
17	1910.1200(h)(1)	Hazardous chemicals, info/training	103	23	3	0	77	$8,935	$5,445	$3,490	$0	$0
18	1910.23(c)(1)	Guarding open-sided floors, platforms	103	88	1	0	14	$19,725	$19,125	$600	$0	$0
19	437-1-705(1)	OSHA 200 log	103	3	2	0	98	$5,820	$100	$400	$0	$5,320
20	1910.157(e)(3)	Portable fire extinguishers checked	102	2	2	0	98	$770	$370	$400	$0	$0
21	1926.501(b)(10)	Fall protection on low slope roofs	96	83	13	0	0	$77,015	$30,215	$46,800	$0	$0
22	437-2-290(3)(c)	Pressure regulators released weldg eqp	94	77	4	0	13	$12,760	$10,360	$2,400	$0	$0
23	1910.1200(f)(5)(i)	Hazardous chemical labels - warning	84	0	3	0	81	$1,415	$0	$1,250	$0	$165
24	1926.652(a)(1)	Trenches shored	81	66	15	0	0	$95,705	$36,005	$59,700	$0	$0
25	437-2-161(5)(a)	Eyewash fountains & deluge showers	71	50	1	0	20	$10,680	$10,080	$600	$0	$0

Source: Research & Analysis Section, Oregon Department of Consumer & Business Services. (12/99)

The heat equation

Heat stroke, heat exhaustion, heat cramps, and heat rash are illnesses suffered by many during the summer or while working in hot environments. Put your health first in order to be productive and enjoy the summer.

High Temperature + High Humidity + Physical Work = Heat Illness

When the body is unable to cool itself through sweating, serious heat illnesses may occur. The most severe heat-induced illnesses are heat exhaustion and heat stroke. If actions are not taken to treat heat exhaustion, the illness could progress to heat stroke and death.

Heat exhaustion

What happens to the body:

Headaches, dizziness, or light-headedness, weakness, mood changes, irritability or confusion, feeling sick to your stomach, vomiting, fainting, decreased and dark-colored urine, and pale, clammy skin.

What should be done:

- Move the person to a cool shaded area. Don't leave the person alone. If the person is dizzy or light-headed, lay him on his back and raise his legs about 6-8 inches. If the person is sick to his stomach, lay him on his side.
- Loosen and remove heavy clothing.
- Have the person drink some cool water (a small cup every 15 minutes) if he is not feeling sick to his stomach.
- Try to cool the person by fanning him. Cool the skin with a cool spray mist of water or wet cloth.
- If the person does not feel better in a few minutes call for emergency help (ambulance or call 911).

  (If heat exhaustion is not treated, the illness may advance to heat stroke.)

Heat stroke — a medical emergency

What happens to the body:

Dry, pale skin (no sweating); hot red skin (looks like a sunburn); mood changes; irritability, confusion, and not making any sense; seizures or fits, and collapse (will not respond).

What should be done:

- Call for emergency help (i.e., ambulance or 911).
- Move the person to a cool, shaded area. Don't leave the person alone. Lay him on his back and if the person is having seizures, remove objects close to him so he won't hit them. If the person is sick to his stomach, lay him on his side.
- Remove heavy and outer clothing.
- Have the person drink some cool water (a small cup every 15 minutes) if he is alert enough to drink anything and not feeling sick to his stomach.
- Try to cool the person by fanning him or her. Cool the skin with a cool spray mist of water, wet cloth, or wet sheet.
- If ice is available, place ice packs in armpits and groin area.

How to protect workers

- Learn the signs and symptoms of heat-induced illnesses and what to do to help the worker.
- Train workers about heat-induced illnesses.
- Perform the heaviest work during the coolest part of the day.
- Slowly build up tolerance to the heat and the work activity (usually takes up to 2 weeks).
- Use the buddy system (work in pairs).
- Drink plenty of cool water (one small cup every 15-20 minutes).
- Wear light, loose-fitting, breathable (like cotton) clothing.
- Take frequent short breaks in cool, shaded areas (allow your body to cool down).
- Avoid eating large meals before working in hot environments.
- Avoid caffeine and alcoholic beverages (these beverages make the body lose water and increase the risk of heat illnesses).

Workers are at increased risk when…

- They take certain medications. Check with your doctor, nurse, or pharmacy to see if medicines you take affect you when working in hot environments.
- They have had a heat-induced illness in the past.
- They wear personal protective equipment. ■

Information in this article is available on a pocket-size laminated card. To receive one free copy, call the OR-OSHA Resource Center and ask for publication number 440-3333. It is also available in Spanish, publication number 440-3333(s).

"Redesign successes," from page 1

The team collected information from phlebotomy-workstation vendors and ordered some of the equipment for testing. It reviewed medical and safety records for phlebotomy and work-related injuries. It visited 12 laboratories, taking videotapes, photographs, and measurements. It interviewed phlebotomists, managers, and patients. It conducted ergonomic and biomechanical analyses of phlebotomy tasks to identify and quantify muculoskeletal injury risk factors and human-error analyses of tasks to identify accident scenarios.

The team also studied staff-satisfaction surveys from three representative laboratories and conducted phlebotomist-input sessions to understand phlebotomist and patient needs and to better define effective blood-draw procedures and positions.

KPNW emphasized the effectiveness of both its planning process and its extensive research in the apparent success of the outcome (although the project is not yet complete). The project continued with design meetings, models, refinement, and more models, followed by a second phlebotomist input session. Taking the models to hospitals allowed for further phlebotomist input. The designs were again fine-tuned and more-sophisticated models were built and reviewed. Then aluminum prototypes were built and tested, and training was conducted for phlebotomists who would be using the new workstations.

So far, KPNW reports that feedback has been "overwhelmingly enthusiastic," and many laboratories have requested that this design be used for retrofits and for new labs. Plans are being made to incorporate the design into a Kaiser Permanente national standard.

Business sought solutions to worksite problems

Shangri-La Corporation is one of about 60 organizations in the state that operates a secondary wood products shop employing workers with cognitive disabilities. Shangri-La applied to OR-OSHA in 1997 for a worksite redesign grant to help workers at its Cherry City WoodShop in Salem, and in similar shops around the state, to avoid injuries caused by nailing, product assembly, feeding, and offloading operations.

Cherry City WoodShop, as part of Shangri-La, had some special requirements: For one thing, many of its employees are of smaller stature, with less-stable gaits, more secondary medical conditions, and less range of motion than the general workforce. (Employees work as assemblers, machine feeders, offbearers, and nailers.)

Shangri-La didn't want a redesign that would require fewer employees, because Shangri-La's mission is to train, employ, and support as many people as possible. Also, because Shangri-La is a social-service provider, not a profit-based company, funds for research and redesign were not readily available.

Data showed that nailing and assembly-area injuries occurred the most frequently and had the highest claim costs. Workers at Cherry City WoodShop suffered repetitive-motion, offbearing, and pneumatic nail-gun operation injuries. Originally, it was the goal of Shangri-La Corporation to have a replicable worksite design and a prototype nailing gun within a year that would address these types of injuries and that could be shared with interested parties through reports and plans for a prototype nailing gun. After discussion with the program staff, the time frame for the project was extended to three years.

A design team assessed needs, reviewed evaluations and worked with the engineer to redesign the worksite process and nail-gun design. The team included the manager of Cherry City WoodShop, Shangri-La's safety manager, the project director, a manufacturing consultant, a design engineer and representatives of Shangri-La's workers' compensation carrier and the potential manufacturer of the nailing gun.

The redesign of work processes is expected to increase production capacity. The nailing gun prototype is being used, and as OR-OSHA grant coordinator Alice Dryden says, "They are fine-tuning the system and working on a new grant application for another work area. Product grants on both the blood-draw workstation and the automated nailing machine will be available to industry soon."

Grant applications have increased

Dryden said that the number of applications for worksite redesign grants has increased in the two years she has been grant coordinator.

Worksite redesign grants, funded by the Worker Benefit Fund and awarded by committee, may be as much as $150,000 for research and development. The grants may address problems common to an industry as well as problems within a particular company. Solutions with broad applications are encouraged.

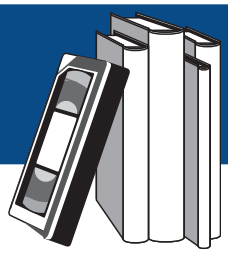
Dryden offered advice to those considering applying for a grant: Be certain that the human resources needed to conduct research or development (or both) will be available to the grantee.

"It's usually best to look for outside resources for research and development," she said, "and save employees for prototype testing. Companies sometimes think they have staff with the time and then it turns out that everybody's plate is full."

Another potential difficulty for grantees is finding the consultants, engineers, and project managers to do what needs to be done.

"We have some resources now," said Dryden, "and networking with other grantees can be helpful, too."

Worksite Redesign consultants are available to help you through the application and grant process. For more information, call OR-OSHA, (503) 378-3272; toll-free, (800) 922-2689; or visit the Web site: www.orosha.org. ■



Small business finds a resource in Oregon OSHA

by Don Harris, AV Librarian, Oregon OSHA

Providing quality safety training videos is a challenge for any business, but for small businesses in Oregon, the challenge may seem insurmountable.

Finding someone who sells safety videos isn't the problem. There are hundreds of vendors throughout the United States, willing and eager to sell safety training videos. A new business is usually contacted by several of these within its first year of operation.

The real difficulty begins when the potential buyer asks, "Will this safety program work for my company?" and "How much does it cost?"

The fact is that many safety training programs will not work for your company. For most of its history, Oregon has been a recognized leader in the field of workplace safety and health. Oregon's safety regulations are not "just like everybody else's," and entrusting your safety training to "just any video" may in itself be an unsafe work practice.

Then, there's the cost. People accustomed to paying $19.95 for a major studio release are often dismayed to learn that the average training program carries a list price of around $500. For many small businesses in Oregon, this is well beyond what the budget will allow.

Many Oregon businesses, both large and small, have found an effective solution by contacting the audiovisual lending library maintained by OR-OSHA. The AV library offers several hundred safety training videos for loan to Oregon employers and workers, at no charge (apart from the cost of return shipping). All library materials have been reviewed by OR-OSHA's technical staff to ensure compliance with current federal and state standards. A free catalog is available on request.

For more information, call the AV librarian, (800) 922-2689 or (503) 947-7453 (V/TTY), or log on to the OR-OSHA Web site, www.orosha.org and click on "Services" or "Publicatons." ■

*To receive a free copy of the **2000 AV Catalog** call (503) 947-7453, or send e-mail to don.j.harris@state.or.us. You can view or download the catalog on the Web: www.orosha.org.*

Talk to a SHARP employer

Following is a list of Oregon companies that have been recognized by OR-OSHA as SHARP companies. SHARP employers are those that have received OR-OSHA comprehensive consultations, corrected all safety and health hazards, and incorporated key elements of an effective safety and health program in their business operations.

This list is provided in an effort to encourage networking between companies interested in improving occupational safety and health. Would you like to learn more about SHARP? Would you like to talk to a SHARP company representative about a safety and health problem? Call Oregon OSHA Consultative Services or see our Web page, www.orosha.org/consult/sharppar.htm, for the name of a contact, an address, and a phone number for each company on the list. All are willing to share experiences and information about SHARP.

First-Year Recipients

Astoria Golf and Country Club
AVI BioPharma
Bear Creek Valley Sanitary Authority
Blachly Lane Electrical Cooperative
Georgia-Pacific West, Inc.
Southern Oregon Goodwill Industries
Graphic Arts Center, Inc.
Hermiston Generating Plant, PG&E Generating
Kerry Clark Company
L'Arche Nehalem
Lebanon Community Hospital
Oregon Department of Transportation, La Grande Equipment Shop
Orkot Incorporated
Papé Brothers, Inc.
Pendleton Woolen Mills
Salem Electric
Schrock Cabinet Company
Selectemp
Sprague Controls
Wacker Siltronic Corporation
Western Pulp Products Company
Weyerhaeuser, Beaverton Recycling Center
Weyerhaeuser, Cottage Grove Sawmill and Planer
Weyerhaeuser, Eugene Distribution Center
White City Plywood Division, Timber Products Company

Second-Year Recipients

Barrett Business Services, Bend,
Barrett Business Services, Macadam
Barrett Business Services, Kelly
Barrett Business Services, Eugene
Bay Area Enterprises
Douglas Electric Cooperative
Elwood's Tree Service Company
Lane Electric Cooperative, Inc.
Louisiana-Pacific, Hines Oregon Facility
Marvin Wood Products
Oregon Department of Transportation, Salem Repair Facility
Oregon Institute of Technology, Food Services
Pioneer Cut Stock
Precision Interconnect
Quest Diagnostics Incorporated
Timber Products, Medford Particleboard Division
Timber Products, Spectrum Division
Yorke & Curtis, Inc., General Contractors

Third-Year Recipients

Co-Gen
Core*Mark International, Inc.
ODOT - Bend Equipment Shop
Prairie Wood Products
R&H Construction
Spirit Communications, Inc.
Weyerhaeuser Company, Coos Bay Timberlands

Ask OR-OSHA

Applying OR-OSHA standards to "real-life" situations may not always be "standard" procedure. Sometimes, answers and solutions to problems can be tricky. ***Ask OR-OSHA*** is a regular feature of *Resource* so that your questions concerning OR-OSHA standards and your business may be answered by experts. So please, ***Ask OR-OSHA*** by calling the Standards and Technical Section, (503) 378-3272 or e-mailing your question to tech.web@state.or.us. We'll answer your question(s) as quickly as possible. We'll also print selected questions and answers in this newsletter so that the answer to your questions may help others.

Q Are automatic safety devices required to be installed on compressors when using hoses exceeding ½-inch inside diameter, in order to reduce pressure in the event of hose failure?

A You may use a manually operated device, capable of reducing air pressure, or a quick-disconnect fitting. Although not required, an automatic safety device complies with the standard and is recommended by both OR-OSHA and at least two compressor manufacturers. The automatic safety device recommended by both Sullivan and Ingersoll-Rand is triggered when air velocity exceeds the maximum CFM of the compressor.

1926.302(b)(7) requires all hoses exceeding ½-inch inside diameter to have a safety device at the source of supply or branch line to reduce pressure in case of hose failure. Nothing in the standard requires an automatic safety device at the compressed-air supply source.

Q Do Oregon regulations regarding asbestos abatement currently require third-party environmental and worker air monitoring?

A Oregon OSHA does not require third-party environmental or worker monitoring. However, the Department of Environmental Quality (DEQ) does require third-party monitoring of an abatement job if the removal exceeds 160 square feet or 260 linear feet of asbestos-containing material.

Q Can I use a mechanical roof cutter or a mechanical felt layer while using a safety monitoring system during roofing?

A 1926.502(h)(2) states that mechanical equipment shall not be used or stored in areas where safety-monitoring systems are being used to monitor employees engaged in roofing operations on low-sloped roofs.

The hazard that 1926.502(h)(2) addresses is the potential for workers to be pulled or forced off an

*See **"Ask OR-OSHA,"** page 16*

RESOURCE

SUBSCRIPTION FORM

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Return to: Oregon OSHA Resource Center, 350 Winter St. NE, Salem, OR 97301-3882

"Ask OR-OSHA," *from page 15*

unprotected open-sided roof by mechanically propelled equipment. If neither the roof cutter nor the felt layer is mechanically propelled, the potential hazard is eliminated. So long as there is absolutely no chance that a blade or chain could catch the roof surface or something else could cause the equipment to move on its own, then compliance with the standard is met and the equipment may be used with a safety-monitoring system. ■

Questions?

OR-OSHA has field offices across Oregon. If you have questions or need information, call us, toll-free, (800) 922-2689, or phone one of the offices listed below. (All phone numbers are V/TTY.)

Portland
1750 N.W. Naito Parkway,
Ste. 112,
Portland, OR 97209-2533
(503) 229-5910
Consultations:
(503) 229-6193

Eugene
1140 Willagillespie,
Ste. 42
Eugene, OR 97401-2101
(541) 686-7562
Consultations:
(541) 686-7913

Pendleton
721 SE Third St., Ste. 306
Pendleton, OR 97801-3056
(541) 276-9175
Consultations:
(541) 276-2353

Medford
1840 Barnett Rd., Ste. D
Medford, OR 97504-8250
(541) 776-6030
Consultations:
(541) 776-6016

Salem
DAS Bldg. 1st. Floor
1225 Ferry St. SE
Salem, OR 97310-1330
(503) 378-3274
Consultations:
(503) 373-7819

Bend
Red Oaks Square
1230 NE Third St.,
Ste. A-115
Bend, OR 97701-4374
(541) 388-6066
Consultations:
(541) 388-6068

Salem Central
350 Winter St. NE, Rm. 430
Salem, OR 97301-3882
(503) 378-3272
Fax: (503) 947-7461

Visit us on the Internet World Wide Web:
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