Health and Safety

RESOURCE

Oregon OSHA August–September 2018 Volume 60 – online

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Celebrating the "Best of the Best" with the Voluntary Protection Program

by Michael Wood

ike all workplace health and safety programs around the country, Oregon OSHA operates a Voluntary Protection Program (VPP) to recognize worksites that exhibit the best in worker protection from the hazards that can cause injury, illness, and death.

Very few sites qualify to become VPP "Star" sites – and even fewer are able to sustain the level of performance and commitment required to stay in VPP year after year. So, it was a special treat for me during the last week of July to visit two such sites to celebrate their renewed Star status. In many respects, the two sites – Portland's Coca-Cola plant and the Klamath Energy power generation plant in Klamath Falls – are very different from one another. The industries in which they operate are very different, as are the operational demands they face.

But they share a lot in common, as well. First of all, of course, they are among an elite group of worksites (21 at the current count) that can claim VPP status in Oregon. And that number has remained relatively steady over the past decade or so, with roughly as many sites leaving the program for one reason or another as have gained VPP status. Oregon OSHA has always prided itself on being a "tough grader" when it comes to VPP – we value the integrity of the program too much to allow sites that don't really pass muster to fly the VPP flag. While we actively promote the program, particularly through the hard work of Mark Hurliman, our goal is not primarily to enroll more sites; instead, it is to encourage more sites to be worthy of VPP participation.

And the sites in the program understand those realities. They have learned that the only way to continue to succeed in promoting workplace health and safety is to keep driving your efforts forward – you can never simply rest on your past achievements, no matter how considerable they may be. And those sites understand that safety leadership is everyone's job – an effective safety culture must truly permeate the organization, and it is those sites that achieve that level of integration that are able to continue to excel, even if they lose key personnel in one or more positions.

VPP is about setting a model for excellence, but it is also about sharing that success with other employers throughout the broader Oregon community, and our VPP employers take that responsibility seriously, supporting conferences and other educational efforts – as well as providing advice and mentorship to other employers throughout the state.

Make no mistake: VPP involves a lot of hard work and effort on the part of Oregon OSHA staff as well. But the investment we make in VPP is intended to provide leverage beyond each particular workplace Oregon OSHA Administrator



that we review. And, ultimately, we believe that the success of VPP leads to fewer workers who will face serious injury, illness, or death on the job site. And that, after all, is the test of everything we do!





Don't miss...

Education: August-September workshops

August 15, 2018 • Wilsonville 8 a.m. Forklift Safety 1 p.m. Hazard Identification and Control

August 30, 2018 • Salem 8 a.m. Confined Space Safety 1 p.m. Forklift Safety

September 12, 2018 • Medford

8 a.m. Lockout/Tagout and Machine Safeguarding1 p.m. Confined Space Safety

September 13, 2018 • Bend 8 a.m. Safety Meetings and Committees 1 p.m. Accident Investigation

> For more information: osha.oregon.gov/edu

For the most recent public education schedule updates: osha.oregon.gov/edu/workshops



Riverhouse on the Deschutes • Bend, Oregon

This event helps your organization improve workplace safety and health performance. Topics include information for all experience levels.

> **Register now!** Cost to attend: \$55-\$210

More information available at: safetyseries.cvent.com/central18

This conference is a joint effort of the Central Oregon Safety & Health Association (COSHA), and Oregon OSHA.



October 16–18, 2018 Ashland Hills Hotel • Ashland

Exhibits • Awards • Workshops

Professional Development and Keynote Speaker Bob Edwards, The H.O.P. Coach - Founder

October16: Human and Organizational Performance Fundamentals

October 17: Failure and Success, They aren't that Different!

Registration opens in mid-August

www.soassp.org • osha.oregon.gov/conferences

This conference is a joint effort of the American Society of Safety Professionals (ASSP), Southern Oregon Chapter, and Oregon OSHA.

To receive registration materials, exhibitor information, or sponsorship information for the 2018 events, contact the Conference Section: oregon.conferences@oregon.gov | 503-947-7411





Most forklift-related incidents in Oregon involve pedestrians. That's why it's important to establish clear, separate pathways for pedestrians and forklifts. High-visibility apparel should be worn when walking outside of designated walkways.

Minimize blind spots and highlight intersections and restricted areas.

If there is a right-of-way, ensure that everyone is aware of it. Otherwise, require the operator to make eye contact with the pedestrian – and get acknowledgment – before moving the forklift.

Look in the direction of travel and look to the rear when backing up. Drive in reverse if the load obstructs the forward view.

When making turns, slow down and turn in a smooth, sweeping motion. Ensure that pedestrians or other obstacles are clear of the backswing.

Quotable

"A mistake is not something to be determined after the fact, but in light of the information available until that point."

- Nassim Nicholas Taleb, risk analyst, statistician, and author.

Datapoints

Forklift operators must be re-evaluated **at least once every three** years and receive refresher training:

- > When the operator is observed operating the forklift unsafely
- > After a forklift accident or near-miss incident
- > When the operator is assigned to operate another type of forklift
- When there is a change in the workplace that could affect the safe operation of the forklift

When traveling with a load, make sure the load is tilted back and raised only as high as necessary to clear the ground; loads must face upgrade on **slopes greater than 10 percent.**

The forklift must be marked to identify the attachment and the capacity of the forklift with the attachment (at maximum elevation and load centered). Each fork extension should be stamped on the side with the individual load rating. Fork extensions should not be longer than **150 percent of the supporting fork's length**.



Protecting forklift operators: Seatbelts are a matter of life and death

By Aaron Corvin

It's no secret that seatbelts significantly reduce the risk of death and serious injury for drivers and passengers navigating the nation's roadways.

Perhaps less well known, however, is the role they play in keeping operators of forklifts safe from serious harm or death at worksites across the U.S.

It seems like a no-brainer: Seatbelts and other restraint systems should be used when they are provided because they keep the operator in the forklift's cab during a tip over and prevent the operator from being thrown from the seat.

And the instructions and requirements are as clear as a cloudless summer sky: Manufacturers' operating manuals warn operators to use seatbelts, and operators must be trained in the manual's directions, warnings, and precautions.

Yet, recent forklift operator deaths – one each in Oregon and California – call into question the awareness of employers in making sure those warnings and requirements are not just jotted on paper, but also put into practice.

In each of those fatalities, neither operator was wearing a seatbelt when they were thrown from the cab of the forklift. The incidents offer lessons in what happens when employers fail to focus on prevention by enforcing seatbelt and other safety measures. And they give pause to remember that training and other resources are available to help employers and workers improve the safety of their forklift operations.

DRIVE SAFELY AND: STOP: at all blind spots LOOK: for people working around you LISTEN: for horns and sirens. An estimated serious injuries and non serious injuries

IMUM LOAD

involving forklifts occur annually in the U.S.

Paying attention

Also known as powered industrial trucks, forklifts have been used for decades in many work settings, primarily to move materials.

They're also a regular source of worker injury.

An estimated 35,000 serious injuries and 62,000 non serious injuries involving forklifts occur annually in the U.S., according to federal OSHA. In 2015, 96 workers were killed in incidents involving forklifts, according to the federal Bureau of Labor Statistics.

In Oregon, from 2013 to 2016, the workers' compensation system accepted a total of 485 disabling claims involving forklifts. From 2012 to 2016, the state saw a total of 147 compensable work-related fatalities; three of them involved forklifts.

Most forklift-related incidents in Oregon involve pedestrians, not operators. And, to be sure, forklift operator deaths are unusual. However, that doesn't mean they're ignorable.

610 KINW

In the early 2000s, for example, forklift operator safety caught the attention of the National Institute for Occupational Safety and Health (NIOSH) as part of a larger examination of forklift safety issues in the U.S.

The agency published an alert document on preventing injuries and deaths of workers who operate or work near forklifts. The document included case studies of seven fatal forklift accidents. Three of them involved operators. In each of those cases, the forklift tipped over and crushed the operator under the overhead guard. And in each case, NIOSH noted, "the forklift was not equipped with a seatbelt."

But even the availability of a seatbelt doesn't guarantee it will be used, as illustrated by the recent Oregon and California deaths.

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A lack of hazard recognition

On the morning of July 3, 2017, Ron Schulty, an employee of JB Instant Lawn Inc., was attempting to attach a Spyder forklift to the back of a 40-foot flatbed truck.

He'd just finished using the forklift to deliver a load of sod to the Eugene Country Club.

He was ready to leave the site.

As he tried to attach the forklift to the trailer, Schulty unintentionally pushed the Spyder's joystick into the reverse position. The forklift jumped wildly. Schulty was not wearing his seatbelt. The force threw Schulty forward, his head hitting the upper part of the overhead guard. He was ejected from the forklift to the parking lot, where he landed on his head.

Oregon OSHA's investigation of Schulty's death found that his employer failed to enforce the forklift manufacturer's requirement – and the employer's own training policy – to wear the seatbelt and run the machine only from the operator's seat.

In July 2017, Ron Schulty, an employee of JB Instant Lawn Inc., was trying to attach a Spyder forklift to the back of a truck when he unintentionally pushed the forklift's joystick into reverse. The forklift jumped wildly, throwing him from the machine. An Oregon OSHA investigation of Schulty's death found his employer failed to enforce seatbelt requirements. "The employer," according to Oregon OSHA's investigation, "did not recognize the lack of seatbelt usage as a hazard."

Oregon OSHA fined JB Instant Lawn \$2,100 for a serious violation: failing to take all reasonable means to require employees to work and act in a safe and healthful manner.

In California, Cal/OSHA announced last month it had issued citations to marine cargo handler SSA Pacific Inc. for willful and serious violations. The citations followed an investigation of a forklift accident that killed a longshoreman at the Port of San Diego.

The longshoreman, Phillip Vargas, was driving a forklift into a transit shed when he collided with a concrete support column. He suffered fatal injuries after being thrown from the machine.

Cal/OSHA's investigation found Vargas was not wearing a seatbelt. What's more, the forklift had multiple safety devices disabled, including a seatbelt warning buzzer and mast interlock system designed to disconnect power from the hydraulic lift when the operator is unseated.



Training and other resources

The deaths of Schulty and Vargas offer grim reminders that employers must take forklift safety and training and seatbelt use seriously. And if Oregon OSHA's top 25 violations of 2017 are any indication, there's plenty of room for improvement.

Training for operators of forklifts was the 11th most cited standard last year, with 96 violations – 44 of them serious, two of them repeat – and initial penalties totaling \$9,205.

Truth is, employers and workers don't have to go it alone in improving forklift training and building awareness of best practices, including the use of seatbelts.

For example, Oregon OSHA is offering classes in Wilsonville and Salem this month about complying with forklift safety rules and developing a forklift training program. It's part of the agency's ongoing education and training efforts.

Oregon OSHA also offers technical and no-cost consultation services. And if you're not sure where to start, then consider the agency's online information about forklift safety.

That information includes a two-page fact sheet that covers the essentials, including training and evaluation; qualifications for trainers; pedestrian safety; use of seatbelts; forklift stability; and other guidelines.



Tracking workplace injuries in Oregon K-12 schools

By Ellis Brasch

Historically, Oregon's K-12 schools and other educational facilities were not required to keep injury and illness records because they were considered low-hazard establishments under Oregon OSHA's recordkeeping rules.

However, the notion of schools as low-hazard workplaces has never been fully supported by the facts. Violent threats and incidents are, in fact, a frequent occurrence in many schools across the country. The National Center for Education Statistics' Indicators of School Crime and Safety: 2017, reports that students ages 12 to 18 years old experienced 749,400 theft and nonfatal violent victimizations at school in 2016, and 6 percent of public school teachers reported that they had been physically attacked by a student from their school in 2015-16.

The Oregon Legislature created a law in 2013 that required schools to keep records of workplace injuries and illnesses, but it wasn't enforceable. Seeing a need to make recordkeeping mandatory, the Oregon School Employees Association asked Oregon OSHA in 2017 to remove elementary schools, secondary schools, and "other schools of instruction" from the list of "exempt industries" in OAR 437-001-0700, Recording Workplace Injuries and Illnesses.

Essentially, removing schools from the list of exempt industries – known as Table 1 – would makes Oregon OSHA responsible for enforcing the recordkeeping requirements that the legislature established in 2013.

Oregon OSHA proposed making the change and held public hearings in Tigard and Roseburg in 2017 that received enthusiastic support from teachers throughout the state. As a result, Oregon OSHA adopted the changes, which removed schools and educational support services from Table 1, and made injury and illness recordkeeping mandatory. The requirement became effective Jan. 1, 2018.

Although Oregon K-12 schools must now record workplace injuries and illnesses, the requirements are the same as they are for other organizations. What are those requirements? Here is a recap: If your organization had more than 10 employees at any time during the previous calendar year, and it is not in an industry listed in Table 1, then you must keep the following injury and illness records for five years:

- The OSHA 300 Log: The OSHA 300 Log describes each recordable workplace injury or illness at your workplace and must be recorded within seven calendar days after you know that it occurred.
- The OSHA 300A Summary: The OSHA 300A summarizes the information in the OSHA 300 Log at the end of each calendar year. Post the OSHA 300A where employees can see it, no later than Feb. 1 every year.
- DCBS Form 801: The DCBS Form 801 takes the place of OSHA Form 301; it is required for reporting injuries and illnesses to insurers and to the Oregon Workers' Compensation Division.

For more information about recordkeeping, see Oregon OSHA's Recordkeeping and reporting webpage.



Hold that shovel and call before you dig!

By Ellis Brasch

What is first thing you should do before you dig a hole in the ground? Call 811 to make sure that you won't be digging into a buried natural gas, electric, telecommunication, water, or sewer line.

Remember: If you dig a hole in the ground, you have made an excavation. It doesn't matter if you are a contractor doing a major dig, a real-estate agent putting up a "For sale" sign, or digging a hole for a shrub – you must call 811 before you dig. (There is one exemption for private property owners and tenants. You do not have to request a locate if you own or live on the property, the excavation is less than 12 inches deep, *and* is not in an established easement.) Do not rely on old drawings or maps to locate buried utility lines, either. They may not be reliable. In 2017, the Oregon Public Utility Commission reported 600 utility strikes throughout the state. That's an average of almost two strikes per day.

The Oregon Utility Notification Center (OUNC) is the state agency that administers the statewide notification system. When you call the 811 number, your call will be routed to the OUNC.

How the 811 notification system works:

- 1. Call 811 at least two business days before you plan to dig.
- Tell the operator where you are planning to dig and what type of work you will be doing. The OUNC will notify the affected local utility companies about your intent to dig.
- 3. Within two business days, the utility will send a locator to mark the approximate location of the underground lines, pipes, and cables with color-coded paint so you will know where they are.

The color-coded paint indicates what is buried below. The colors are:

RED	Electrical
ORANGE	Communications, telephone, and cable TV
BLUE	Potable water
GREEN	Sewer and drainage
YELLOW	Gas and petroleum pipe line
PURPLE	Reclaimed water
WHITE	Indicates the site of your intended excavation

Locating natural gas pipelines

Permanent pipeline markers, which are located along roads, railways, and other public rights-of-way, show the approximate location of the buried pipelines. However, the depth and location of the pipelines vary within the right-of-way and the markers are not located precisely over a line, nor do they indicate the depth of the line. Never guess about the location of an underground utility. Call 811 and ask for locates.

Use hand tools to expose precise locations of natural gas pipelines

Use only hand tools within 24 inches of each marked line to carefully expose the exact location before using power equipment. If you damage a pipe, immediately call the pipeline owner. Gouges, scrapes, or dents to a pipeline can lead to future problems.

Rules and other requirements

Oregon OSHA rules

Subdivision 3/P: Excavations

- 1926.651(b)(1): The estimated location of underground installations, such as sewer, telephone, fuel, electric, and water lines must be determined before opening an excavation.
- 1926.651(b)(3): When excavation operations approach the estimated location of underground installations, the exact location of the installations must be determined.
- 1926.651(b)(4): While the excavation is open, underground installations must be protected, supported, or removed to safeguard employees.

Having problems getting a locate within two business days?

Call the Oregon Public Utility Commission's toll-free customer service number: 1-800-522-2404 (in Oregon) or 503-378-6600.





How much space is needed around exits? We are moving things in our warehouse and don't want to violate any safety rules. Ask Technical

Exit doors and exit routes must be permanent and at least 28 inches wide and six feet, eight inches high; objects that project into the exit route must not reduce its minimum width and height. You must also ensure that employees have unobstructed access to all exit routes.

Are you aware of Oregon OSHA's other requirements for exits and exit routes? Here is a summary (all the requirements are in 437-002-0041, Exits and exit routes, Division 2, Subdivision E):

General

There must be two or more exit routes depending on the size and layout of the work area and the number of people involved. A single exit route is acceptable only if all employees can get out through it safely during an emergency. Locate multiple exit routes apart from each other.

Design

- The exit route must be at least six feet, eight inches high at all points.
- An exit route must be at least 28 inches wide at all points between handrails and wider if needed to handle the occupant load.
- Objects that project into the exit route must not reduce the minimum height and width of the exit route.

Access

- There must be unobstructed access to exit routes.
- Exit routes must not pass through or into lockable rooms or dead ends.
- Exit routes must be mostly level or have stairs or ramps.

Condition of exit routes and exits

- Exit routes must minimize danger to employees during emergencies.
- Exit routes must be free of highly flammable furnishings and decorations.

- An exit route must not require employees to travel toward materials that burn quickly, emit poisonous fumes, or are explosive, unless those materials are effectively shielded from the exit route.
- Exit routes must have adequate lighting.
- Each exit must be clearly visible and must have a distinctive sign reading "Exit." Install additional directional signs to exits where necessary.
- Exit doors must have no signs or decorations that obscure their visibility.
- The line-of-sight to an exit sign must be clear.
- If employees could mistake a "non-exit" for an exit, mark the non-exit, "Not an Exit" or mark it to indicate its real use.
- There must be enough reliable light on or from exit signs to allow them to be effective during emergencies.
- All safeguards to protect employees during an emergency (such as sprinkler systems, alarm systems, fire doors, and exit lighting) must work properly.

Short take

Oregon OSHA adds protections against risk of pesticide drift

Oregon OSHA has adopted rules that increase protections against the risk of pesticides drifting off their mark when spraying occurs outdoors. The rules, which exceed federal requirements, will take effect Jan. 1, 2019.

The rules expand a protective zone; extend the evacuation period; require doors, windows, and air intakes to be closed during pesticide applications; and require storage for shoes and boots to prevent tracking of pesticides into worker housing.

Pesticide drift outside a treated area is already illegal. However, Oregon OSHA's rules further address the risk by adding safeguards for workers and their families who rely on farm housing. The rules are part of a broader and ongoing effort to reduce incidents of unsafe pesticide exposure among agricultural workers and pesticide handlers.

Oregon OSHA expects to update and provide education and training materials ahead of the rule's effective date.

At issue is the U.S. Environmental Protection Agency's Application Exclusion Zone (AEZ). The zone is adjacent to – but outside of – the pesticide-treated area. It provides an added level of protection beyond the safeguards enforced with respect to the treated area itself. The AEZ surrounds and moves with spray equipment and must be free of all people other than appropriately trained and equipped pesticide handlers.

The EPA's rule requires people to move 100 feet away from an area being treated with pesticides. However, it was designed for workers in the field. It did not account for the interaction of the AEZ with worker housing and other agricultural structures. The EPA rule also allows people to return to the zone immediately after the spray equipment has passed by.

By contrast, Oregon OSHA's rules require a 100-foot AEZ when the pesticide applicator is not required to use a respirator. Moreover, people must stay out of the zone for an additional 15 minutes, either by staying indoors or remaining evacuated. This recognizes that illegal drift may occur and allows any pesticide drift to settle.

Oregon OSHA's rules exceed those of the EPA in other ways, including:

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- For pesticides that require applicators to use respirators, the AEZ expands to 150 feet – 50 feet more than the EPA rule. People must stay out of the zone for an additional 15 minutes. There is no option to stay indoors.
- For all pesticide applications, doors and windows must be shut, and air intakes must be turned off before people evacuate or remain inside an enclosed agricultural structure. During evacuation, the EPA rule does not include such requirements.
- Closeable storage areas for shoes or boots must be provided to prevent tracking of pesticides into worker housing. The EPA rule includes no such requirements.
- Employers must adhere to notification and instruction requirements, including informing people of the start and stop times of pesticide spray, and providing them with instructions to close windows, doors, and air intakes. The EPA rule includes no such provisions.

Short take

Workplace safety, health training grants available

Oregon OSHA is accepting grant applications for the development of innovative workplace safety and health training programs. Applications are due Friday, Oct. 5.

The agency encourages unique projects such as mobile apps, videos, or online educational games to engage workers.

The training grants will focus on programs that target a high-hazard Oregon industry, such as construction or agriculture, or a specific work process to reduce or eliminate hazards. Any employer, labor group, school affiliated with a labor group, or nonprofit organization may apply. Applicants may request up to \$40,000 per grant project.

Employers are not allowed to use grants to pay for training for their employees. Materials produced by grant recipients become the property of Oregon OSHA. Many of the materials are housed in the Oregon OSHA Resource Center and are available for use by the public. Some materials are available electronically.

Some examples of past grant projects include:

- Spanish-language flip charts designed to help prevent heat-related illness among forest workers
- Safe design guidelines for anchoring systems used as part of logging operations
- An educational program for nurses to prevent ergonomic-related injuries

The Oregon Legislature launched the Occupational Safety and Health Education and Training Grant Program in 1990. Award recommendations are made by Oregon OSHA's Safe Employment Education and Training Advisory Committee, a group with members from business, labor, and government.



For more information, contact Teri Watson at 503-947-7406 or teri.a.watson@oregon.gov.

SAFE+ SOUND



SHOW YOUR COMMITMENT TO SAFETY

August 13 - 19, 2018

Short take

Celebrate Safe + Sound Week, Aug. 13-19

In 1976, Oregon OSHA's predecessor – the Accident Prevention Division – adopted rule 1-2-13.1, which required employers to "take all reasonable means" to ensure that their employees work in a safe manner. "All reasonable means" implied that employers needed to examine how they were managing safety at their workplaces. Preventing workplace injuries would not happen simply by finding and fixing hazards because the root causes of those injuries went deeper. Making workplaces truly safer required a systematic approach to safety.

It was a new concept and, over the next six years, APD explored how Oregon business owners might make that happen. What evolved from that effort was a set of seven interrelated core elements. If business owners could manage those seven core elements just as they managed other aspects of their business, workplace injury and illness rates *would* drop. Business owners just needed to take the time and make the effort to implement them, set safety goals, monitor performance, and evaluate outcomes. That systematic approach to managing workplace safety became known as a safety and health program and the original seven core elements* included:

- 1. Management commitment
- 2. Accountability and supervision
- 3. Employee participation
- 4. Employee training
- 5. Hazard identification
- 6. Hazard prevention
- 7. Planning and evaluation

Today, an effective workplace safety and health program is still considered the best way to make workplaces safer and healthier – and those original core elements are still key to making an effective program.

The basic elements of a safety and health program apply to any business, small or large. How you develop your program is entirely up to you. It is an investment in the safety and health of your employees with a high rate of return. That's the message of Safe + Sound Week, which kicks off Aug. 13. Safe + Sound Week is a nationwide event to raise awareness of the value of safety and health programs and the systems approach to finding and fixing hazards in workplaces. Any business can participate. Here is how to get involved:

- Register your event to show your commitment to safety.
- Schedule and activity. Whether it's an hour, a half day, or a full day, there's a Safe + Sound Week activity that combines core elements of an effective safety and health program.
- Check out the Safe + Sound Week website for more information on how to participate.

* Although they are now 36 years old, you'll recognize most of the original seven core elements in this updated list from OSHA's Recommended Practices for Safety and Health Programs webpage.

- 1. Management leadership
- 2. Worker participation
- 3. Hazard identification and assessment
- 4. Hazard prevention and control
- 5. Education and training
- 6. Program evaluation
- 7. Communication with host employers, contractors, and staffing agencies

Oregon Safe + Sound Week participants (as of July 24)

- Bergelectric Portland
- Oregon Department of Transportation Bend
- PBS Engineering and Environmental Portland
- Facebook Prineville
- Attach-it Cort Inc White City
- Hyster-Yale Group Fairview
- MHA Resource Company Portland
- City of Central Point Central Point
- North Bend Medical Center North Bend

SAVE THE DATE







SHOW YOUR COMMITMENT TO SAFETY





What happened?

One worker was injured and a second worker died when their work truck was struck from behind by another vehicle that ran through a construction zone.

How did it happen?

A foreman and his three-person crew had been removing metal plates from the expansion joints on a bridge in preparation for a road resurfacing project. His crew had also been assigned the task of opening and closing traffic lanes in accordance with the company's Oregon Department of Transportation-approved traffic control plan.

The plan called for closing two traffic lanes with barrels and allowing traffic to flow freely at posted speed limits in the third (fast) lane. The lane closures and the work were done at night to minimize traffic congestion and then opened in the morning. The plan required the middle lane to open by 4 a.m. and the slow lane to open one hour later.

The crew met briefly at 3:15 a.m. to discuss how to open the middle lane; the foreman decided to open it while the slow lane was still open to traffic. The crew would use a "barrel mover" attached to front of an F-250 pickup to move the barrels to the fast lane, which would be followed by a "crash truck" that served as a barrier between the traffic and the workers; the crash truck also had a reader board with an arrow that directed traffic to the slow lane. The meeting adjourned just before 3:20 a.m. and everyone left for their assigned vehicles.

Accident Report

Incident: Struck by vehicle Industry: Highway construction Worker: A construction foreman and a laborer

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As the F-250 moved into position, two other crew members heard what they described as barrels being hit by a vehicle in rapid succession. The crash truck driver looked in his truck's left sideview mirror and saw a white Peterbilt box truck approaching at a high rate of speed. When he realized what was happening, he tried to move his crash truck out in front, but he missed the gas pedal in the heat of the moment.

The F-250 pickup truck after the crash.

This photo shows a different view of the *F*-250 pickup truck's bed after the crash.





The box truck passed him at high speed, just missing the truck-mounted direction arrow by inches and striking the F-250 without slowing. The F-250 rolled across the slow traffic lane toward oncoming southbound traffic and then stopped in the median.

The crash truck driver worried that the F-250 would be struck again and quickly positioned the direction arrow to close the slow lane. After the slow-lane traffic was closed, he called 911 and then tried to open the driver's door on the F-250, but it was jammed shut. The foreman and his passenger were still wearing seatbelts, but the backs of their seats had collapsed because of the impact.

The box truck driver continued north on the freeway, but Oregon state troopers found him a short time later and charged him with assault, reckless driving, reckless endangering, and failure to perform the duties of a driver.

While Oregon state troopers were closing off the crash scene, another vehicle approached and tried to pass emergency vehicles on the shoulder. The driver was quickly arrested and charged with reckless driving.

Emergency responders took the injured workers to a nearby hospital; the passenger recovered from his injuries, but the foreman died a week later.

No violations were issued to the employer in the incident.

The impact from the collision left the seat backs in this position. Both workers had concussions and similar contusions on the backs of their heads.



Going the Distance

Company: D2000 Safety Inc.

CEO and owner: Jim Johnson

Operations/services/workforce:

Founded in 1993, D2000 Safety is a Eugene-based company that provides safety and rescue training for workers in high-hazard environments. Its areas of specialty include confined spaces, fall protection/towers, and excavations. It employs about 12 people depending on the projects being undertaken at any given time.

Responsibilities:

Aside from running the company with my wife, Mary Johnson, I develop all of the curriculum and do a fair amount of the safety training.

- - - - This photo shows Jim Johnson, CEO of D2000 Safety in Eugene, during a fall protection survey his
 - company conducted for a client in Roseburg.



Johnson delivers a presentation during the 2016 Southern Oregon Occupational Safety & Health Conference.



When it comes to safety in high-hazard environments, what's your sense of how much progress has been made?

Let's start with our definition of a 'high-hazard' environment. We believe that it's one in which the work hazards cannot be eliminated, so workers must rely on administrative controls and personal protective equipment to stay safe. This means that you are on the lower levels of the hierarchy of controls, which requires higher levels of worker participation and training. It also means these systems can be defeated if the workers do not follow procedures.

So, from a technology standpoint, there has been a lot of progress, particularly in confined space, fall protection, and rescue equipment. It amazes me how many technical solutions there are today.

Progress on the human front is tougher to measure since we don't work with a cross-section of Oregon industries. Like all the other safety companies, we only get to work with organizations that "get it." That is, they take safety and emergency planning seriously. It's ironic that safety companies don't get to train the people who could benefit the most from our expertise.

Among your clients, what are some of the more effective ways they are managing the challenges of high-hazard environments?

It varies depending on the type of industry, but one thing most of these organizations do is to practice risk-based safety. This means that everyone is trained to recognize hazards and has the authority to stop an unsafe job or correct an unsafe condition. In essence, they make everyone a competent person. Decisions are geared towards following best practices more so than merely following OSHA regulations which are only minimal.

This strategy also recognizes and relies upon the expertise of affected workers. As Ray Illingsworth, safety coordinator of Marvin Wood Products, mentioned in your last issue, they are the ones who are closest to the work and, therefore, they are in an excellent position to help ensure that safety measures 1) allow the work to be done in an efficient manner (which can also reduce exposure), and 2) that the safety measures do, in fact, eliminate or control the hazards encountered or created by the work activities.

Another tactic, as Mr. Illingsworth also pointed out, is tracking near misses and sharing them with the workforce. This is effective because accidents are the result of a chain of events and people learn through stories. By knowing these stories, workers are better equipped to recognize and break the chain of events that can lead to tragedy. An example would be dropping a tool into a permit-required confined space and simply jumping in to retrieve it instead of following entry procedures. Not a smart move.

When it comes to your line of work, how do you measure success?

I'm not sure you can. You can never prove the existence of the accident that didn't happen or the rescue that didn't need to be made. I think all the safety training companies would agree that in our line of work, no news really is good news.



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