7. Everything you need to know about Oregon OSHA’s lighting rules

11. Get tips on staying safe amid winter darkness

15. Learn to protect against the hazards of carbon monoxide
Don’t Miss...

3 Sign up for virtual workshops and mark your calendar for upcoming safety conferences

Did You Know?

4 Oregon OSHA offers a free online course on accident investigations in English and Spanish

Datapoints

5 Review the top job safety and health violations of 2021

Features

7 Everything you need to know about Oregon OSHA’s lighting rules

11 Get tips on staying safe amid winter darkness

Ask Oregon OSHA

13 Does Oregon OSHA have any requirements covering when we must update safety data sheets?

Short Takes

14 Oregon OSHA hosts second Spanish-language conference

15 Winter brings an increased risk of carbon monoxide poisoning at home and work

17 Contest promoting young worker safety in Oregon is open to high school students; submissions due Feb. 17, 2023

18 Oregon OSHA’s Micah Ashby: Forever a Hero Scholarship winner

Incident Alert!

19 Recycled rubber products manufacturer pinch point
Don’t miss

Education:
Workshop classes will be held virtually until further notice.
A minimum of five registrants is needed to hold a virtual workshop.
Registered participants will receive an email if a cancellation is necessary.

Register and attend
Using the secure online registration portal, you can find classes. The workshop schedule changes every three months.
For more information, visit the classroom workshops page.
Find more information about education resources by visiting Oregon OSHA’s education and training page.

To receive conference registration materials, exhibitor information, or sponsorship information, contact the Conference Section:
oregon.conferences@dcbs.oregon.gov | 503-947-7411 | osha.oregon.gov/conferences

Mark your calendar for these workplace safety and health conferences:
Mid-Oregon Construction Safety Summit
Jan. 30-31, 2023 • Bend
Oregon GOSH Conference
March 6-9, 2023 • Portland
Northwest Safety & Health Summit
May 16-18, 2023 • Kennewick, WA
Blue Mountain Occupational Safety & Health Conference
June 5-6, 2023 • Pendleton
Central Oregon Occupational Safety & Health Conference
Sept. 25-26, 2023 • Bend
Southern Oregon Occupational Safety & Health Conference
Oct. 17-19, 2023 • Ashland
Western Pulp, Paper, & Forest Products Safety & Health Conference
Nov. 28-Dec. 1, 2023 • Portland
Cascade Occupational Safety & Health Conference
March 2024 • Eugene
Oregon OSHA offers a free online course on accident investigations in English and Spanish. The course is designed to provide training in the principles of investigating workplace accidents. It fulfills a training requirement for safety committee members.

The Accident Investigation online course is part of the Safety Committee Suite, which also includes Safety Committees and Hazard Identification online courses.

The Accident Investigation course covers several topics, including gathering information, analyzing event facts, and implementing solutions.

Check out the course now. For more information about other online courses, visit Oregon OSHA’s online learning webpage.

One of the greatest lessons many companies and individuals have learned over the past three years is that we need to change before we have to, not because we have to.

— Joe Estey,
senior performance improvement specialist for Lucas Engineering and Management Services, who delivered the keynote presentation during the Nov. 29-Dec. 2, 2022, Western Pulp, Paper, & Forest Products Safety & Health Conference in Portland.
# Datapoints

## 2021 – Safety violations

### Top 10

<table>
<thead>
<tr>
<th>Rank</th>
<th>Rule violated</th>
<th>Rule Name</th>
<th>Total violations</th>
<th>Total initial penalties</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>OAR 437-003-1501(1)</td>
<td>Fall protection: General requirements</td>
<td>237</td>
<td>$770,745</td>
</tr>
<tr>
<td>2</td>
<td>OAR 437-001-0765(1)</td>
<td>Rules about safety committees or safety meetings</td>
<td>110</td>
<td>$9,765</td>
</tr>
<tr>
<td>3</td>
<td>29 CFR 1926.1053(b)</td>
<td>Requirements for use of ladders</td>
<td>96</td>
<td>$72,355</td>
</tr>
<tr>
<td>4</td>
<td>OAR 437-003-0503(2)</td>
<td>Certification of fall-protection training</td>
<td>95</td>
<td>$5,470</td>
</tr>
<tr>
<td>5</td>
<td>OAR 437-001-0765(13)</td>
<td>Documentation of safety committee meetings</td>
<td>88</td>
<td>$3,850</td>
</tr>
<tr>
<td>6</td>
<td>29 CFR 1910.178(l)</td>
<td>Training for operators of powered industrial trucks</td>
<td>51</td>
<td>$8,910</td>
</tr>
<tr>
<td>7</td>
<td>OAR 437-002-0221(4)</td>
<td>Rules for handling materials: Storage of material, location</td>
<td>48</td>
<td>$15,180</td>
</tr>
<tr>
<td>8</td>
<td>29 CFR 1910.305(g)</td>
<td>Wiring requirements for flexible cords and cables</td>
<td>44</td>
<td>$5,600</td>
</tr>
<tr>
<td>9</td>
<td>OAR 437-003-0503(1)</td>
<td>Fall protection training program</td>
<td>36</td>
<td>$21,615</td>
</tr>
<tr>
<td>10</td>
<td>OAR 437-003-0134(8)</td>
<td>PPE - Requirements for eye and face protection</td>
<td>33</td>
<td>$7,885</td>
</tr>
</tbody>
</table>

### Serious violations

<table>
<thead>
<tr>
<th>#</th>
<th>Violations</th>
<th>Initial penalties</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>174</td>
<td>$182,525</td>
</tr>
<tr>
<td>2</td>
<td>38</td>
<td>$9,565</td>
</tr>
<tr>
<td>3</td>
<td>86</td>
<td>$55,580</td>
</tr>
<tr>
<td>4</td>
<td>6</td>
<td>$2,670</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>$835</td>
</tr>
<tr>
<td>6</td>
<td>23</td>
<td>$8,910</td>
</tr>
<tr>
<td>7</td>
<td>10</td>
<td>$3,180</td>
</tr>
<tr>
<td>8</td>
<td>18</td>
<td>$5,600</td>
</tr>
<tr>
<td>9</td>
<td>34</td>
<td>$20,640</td>
</tr>
<tr>
<td>10</td>
<td>30</td>
<td>$7,070</td>
</tr>
</tbody>
</table>

### Repeat violations

<table>
<thead>
<tr>
<th>#</th>
<th>Violations</th>
<th>Initial penalties</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>62</td>
<td>$547,595</td>
</tr>
<tr>
<td>2</td>
<td>1</td>
<td>$200</td>
</tr>
<tr>
<td>3</td>
<td>10</td>
<td>$16,775</td>
</tr>
<tr>
<td>4</td>
<td>10</td>
<td>$2,800</td>
</tr>
<tr>
<td>5</td>
<td>10</td>
<td>$3,015</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
<td>$0</td>
</tr>
<tr>
<td>7</td>
<td>2</td>
<td>$12,000</td>
</tr>
<tr>
<td>8</td>
<td>0</td>
<td>$0</td>
</tr>
<tr>
<td>9</td>
<td>2</td>
<td>$975</td>
</tr>
<tr>
<td>10</td>
<td>3</td>
<td>$815</td>
</tr>
</tbody>
</table>

### Willful violations

<table>
<thead>
<tr>
<th>#</th>
<th>Violations</th>
<th>Initial penalties</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>$40,625</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>$0</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>$0</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>$0</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>$0</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
<td>$0</td>
</tr>
<tr>
<td>7</td>
<td>0</td>
<td>$0</td>
</tr>
<tr>
<td>8</td>
<td>0</td>
<td>$0</td>
</tr>
<tr>
<td>9</td>
<td>0</td>
<td>$0</td>
</tr>
<tr>
<td>10</td>
<td>0</td>
<td>$0</td>
</tr>
</tbody>
</table>

### Other violations

<table>
<thead>
<tr>
<th>#</th>
<th>Violations</th>
<th>Initial penalties</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>$0</td>
</tr>
<tr>
<td>2</td>
<td>71</td>
<td>$0</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>$0</td>
</tr>
<tr>
<td>4</td>
<td>79</td>
<td>$0</td>
</tr>
<tr>
<td>5</td>
<td>73</td>
<td>$0</td>
</tr>
<tr>
<td>6</td>
<td>28</td>
<td>$0</td>
</tr>
<tr>
<td>7</td>
<td>36</td>
<td>$0</td>
</tr>
<tr>
<td>8</td>
<td>26</td>
<td>$0</td>
</tr>
<tr>
<td>9</td>
<td>0</td>
<td>$0</td>
</tr>
<tr>
<td>10</td>
<td>0</td>
<td>$0</td>
</tr>
</tbody>
</table>

Violations have been summarized to the rule or first paragraph level.
The violation data for the 2022 calendar will not be complete until July 1, 2023.
## 2021 – Health violations

### Top 10

<table>
<thead>
<tr>
<th>Rank</th>
<th>Rule violated</th>
<th>Rule Name</th>
<th>Total violations</th>
<th>Total initial penalties</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>29 CFR 1910.1200(e)</td>
<td>Written hazard communication program</td>
<td>282</td>
<td>$29,880</td>
</tr>
<tr>
<td>2</td>
<td>OAR 437-001-0765(1)</td>
<td>Rules about safety committees or safety meetings</td>
<td>89</td>
<td>$5,890</td>
</tr>
<tr>
<td>3</td>
<td>29 CFR 1910.134(c)</td>
<td>Respiratory protection program</td>
<td>66</td>
<td>$4,545</td>
</tr>
<tr>
<td>4</td>
<td>29 CFR 1910.1200(h)</td>
<td>Hazard communication: Employee information and training</td>
<td>60</td>
<td>$7,590</td>
</tr>
<tr>
<td>5</td>
<td>29 CFR 1910.1200(g)</td>
<td>Hazard communication: Safety data sheets</td>
<td>48</td>
<td>$1,350</td>
</tr>
<tr>
<td>6</td>
<td>29 CFR 1910.1030(c)</td>
<td>Bloodborne pathogens: Exposure control requirements</td>
<td>26</td>
<td>$7,310</td>
</tr>
<tr>
<td>7</td>
<td>OAR 437-002-0161(5)</td>
<td>Emergency eyewash and shower facilities</td>
<td>20</td>
<td>$3,540</td>
</tr>
<tr>
<td>8</td>
<td>OAR 437-002-0134(1)</td>
<td>Personal protective equipment: Requirements for hazard assessment and equipment selection</td>
<td>19</td>
<td>$3,225</td>
</tr>
<tr>
<td>9</td>
<td>29 CFR 1910.134(e)</td>
<td>Requirements on the selection of respiratory protection</td>
<td>18</td>
<td>$3,195</td>
</tr>
<tr>
<td>10</td>
<td>OAR 437-001-0765(4)</td>
<td>Requirements for members of safety committees</td>
<td>12</td>
<td>$330</td>
</tr>
</tbody>
</table>

### Serious violations

<table>
<thead>
<tr>
<th>#</th>
<th>Violations</th>
<th>Initial penalties</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>183</td>
<td>$29,385</td>
</tr>
<tr>
<td>2</td>
<td>30</td>
<td>$5,790</td>
</tr>
<tr>
<td>3</td>
<td>31</td>
<td>$4,545</td>
</tr>
<tr>
<td>4</td>
<td>30</td>
<td>$7,590</td>
</tr>
<tr>
<td>5</td>
<td>3</td>
<td>$1,350</td>
</tr>
<tr>
<td>6</td>
<td>20</td>
<td>$7,310</td>
</tr>
<tr>
<td>7</td>
<td>18</td>
<td>$3,540</td>
</tr>
<tr>
<td>8</td>
<td>16</td>
<td>$3,225</td>
</tr>
<tr>
<td>9</td>
<td>15</td>
<td>$3,195</td>
</tr>
<tr>
<td>10</td>
<td>2</td>
<td>$330</td>
</tr>
</tbody>
</table>

### Repeat violations

<table>
<thead>
<tr>
<th>#</th>
<th>Violations</th>
<th>Initial penalties</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>8</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>9</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>10</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### Willful violations

<table>
<thead>
<tr>
<th>#</th>
<th>Violations</th>
<th>Initial penalties</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>6</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>7</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>8</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>9</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>10</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### Other violations

<table>
<thead>
<tr>
<th>#</th>
<th>Violations</th>
<th>Initial penalties</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>99</td>
<td>$495</td>
</tr>
<tr>
<td>2</td>
<td>59</td>
<td>$100</td>
</tr>
<tr>
<td>3</td>
<td>35</td>
<td>$0</td>
</tr>
<tr>
<td>4</td>
<td>30</td>
<td>$0</td>
</tr>
<tr>
<td>5</td>
<td>45</td>
<td>$0</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>$0</td>
</tr>
<tr>
<td>7</td>
<td>2</td>
<td>$0</td>
</tr>
<tr>
<td>8</td>
<td>3</td>
<td>$0</td>
</tr>
<tr>
<td>9</td>
<td>3</td>
<td>$0</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>$0</td>
</tr>
</tbody>
</table>

Violations have been summarized to the rule or first paragraph level.
The violation data for the 2022 calendar will not be complete until July 1, 2023.
How much light does a workplace need?

It’s complicated. Without enough light, we can’t clearly see what we are doing. But too much light has the same effect. Ideally, workplace lighting should strike a balance between quantity and quality. The quantity factor is relatively easy to measure: a good light meter will do the job. Determining quality is more challenging because other factors such as flicker, glare, and contrast come into play.

A lighting survey done by a trained industrial hygienist, ergonomist, or other lighting professional is the best way to ensure that your workplace strikes the proper balance between lighting quantity and quality.

What are Oregon OSHA’s lighting rules?

Oregon OSHA has adopted more than 30 lighting-related rules (the complete list starts on Page 9), but just a few rules apply to most workplaces. They include:

Rules for general industry workplaces

- 437-002-0041(8)(d) and (8)(e) Exits and routes. Exit routes must have adequate lighting. Each exit must be clearly visible and have a distinctive sign reading “Exit.”
- 437-002-0144(1)(a) and (1)(b) Additional Oregon Rules for General Environmental Controls. Adequate lighting must be provided for rooms, buildings, and work areas when they are used. “Adequacy” is based on the quantity of light specified in American National Standard ANSI All1-1965, American Standard Practice for Industrial Lighting. Lighting must also be free from glare and extreme contrasts. All skylights, side windows, and lamps must be clean and in working order.

Oregon OSHA offers free resources to employers to help them maintain safe and healthy workplaces, including addressing proper lighting in the workplace. Those resources include:

- Technical specialists can answer questions about how to apply Oregon OSHA’s requirements to your workplace: https://osha.oregon.gov/Pages/Contact-Technical.aspx
- Consultants can conduct a confidential evaluation of all or part of your worksite to help you improve your health and safety programs and processes: https://osha.oregon.gov/consult/Pages/index.aspx
Rules for construction workplaces

1926.56(a) and (b) Illumination. Construction areas, ramps, runways, corridors, offices, shops, and storage areas must be lighted to at least the intensities listed in Table D-3 while work is in progress.

Table D-3. Minimum illumination intensities in foot-candles

<table>
<thead>
<tr>
<th>Minimum intensity</th>
<th>Area or operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 foot-candles</td>
<td>General construction areas, concrete placement, excavation and waste areas, access ways, active storage areas, loading platforms, refueling, and field maintenance areas.</td>
</tr>
<tr>
<td>5 foot-candles</td>
<td>General construction area lighting.</td>
</tr>
<tr>
<td>5 foot-candles</td>
<td>Indoors: Warehouses, corridors, hallways, and exit ways.</td>
</tr>
<tr>
<td>5 foot-candles</td>
<td>Tunnels, shafts, and general underground work areas. (A minimum of 10 foot-candles is required at tunnel and shaft headings during drilling, mucking, and scaling. Bureau of Mines approved cap lights must be acceptable for use in the tunnel heading.)</td>
</tr>
<tr>
<td>10 foot-candles</td>
<td>General construction plants and shops (such as batch plants, screening plants, mechanical and electrical equipment rooms, carpenter shops, rigging lofts and active storerooms, barracks or living quarters, locker or dressing rooms, mess halls, and indoor toilets and workrooms).</td>
</tr>
<tr>
<td>30 foot-candles</td>
<td>First aid stations, infirmaries, and offices.</td>
</tr>
</tbody>
</table>

Refer to the American National Standard A11.1-1965, R1970, Practice for Industrial Lighting, for areas or operations not covered in Table D-3.

Rules for agricultural workplaces

- 437-004-0405(i) Exits and emergency action plan. Exit routes must have adequate lighting.
- 437-004-1140 (1)(a) and (1)(b) Lighting. Rooms, buildings, and work areas must have adequate lighting based on the guidelines in the American National Standard A11.1-1965, Practice for Industrial Lighting. Lighting must also be free from glare and extreme contrasts.

What is American National Standard A11.1, Practice for Industrial Lighting?

American National Standard A11.1, Practice for Industrial Lighting is a voluntary standard developed by the American National Standards Institute (ANSI) and the Illuminating Engineering Society (IES) in 1965. The IES now has the role of developing such standards; the IES uses the word “standard” to mean any IES technical document that has gone through an approval process developed by ANSI.

Oregon OSHA’s lighting rules refer to the original A11.1, Practice for Industrial Lighting published in 1965 and to revisions published in 1970 and 1990. These rules include:

**ANSI A11.1-1965, Practice for Industrial Lighting**
- 1910.262, Textiles
- 1910.265, Sawmills
- 437-002-0144, Additional Oregon rules for general environmental controls
- 437-004-1140, Lighting

- 1910.219, Mechanical power-transmission apparatus
- 1910.265, Sawmills
- 1926.56, Illumination


Note that the IES revised and updated all its lighting standards in 2020 and 2021; you can access them through its Lighting Library (subscription required). The IES publication that comes closest to the Practice for
Industrial Lighting is ANSI/IES RP-7-20, Recommended Practice: Lighting Industrial Facilities; check out this and other IES lighting standards in the IES Lighting Library's Lighting Applications Standards Collection.

**Foot-candles, lux, and lumens – what do they mean?**

Most of Oregon OSHA's lighting rules use “foot-candles” as a measure of how much light should illuminate a surface. One foot-candle equals the amount of light on a surface one foot away from a single candle. Another term called “lux” also measures illumination on a surface; the difference between the two terms is that foot-candles are based on Imperial measurements and lux are based on metric measurements. So, one lux is the amount of light that falls on a surface one meter away from a candle, and one foot-candle equals 10.764 lux.

Only one Oregon OSHA rule uses the term “lumens” as a lighting requirement: 1910.178, Powered industrial trucks (“Where general lighting is less than 2 lumens per square foot, auxiliary directional lighting shall be provided on the truck.”). Unlike foot-candles and lux, lumens measure the total amount of light emitted in all directions from a single source.

**Oregon OSHA rules that have lighting requirements**

**Division 2 – General occupational safety and health**

**Subdivision E** – Means of egress
- 437-002-0041 Exits and routes

**Subdivision F** – Powered platforms
- 1910.68 Man lifts

**Subdivision H** – Hazardous materials
- 1910.103 Hydrogen
- 1910.120 Hazardous waste operations and emergency response

**Subdivision J** – General environmental controls
- 437-002-0144 Additional Oregon Rules for General Environmental Controls
- 437-002-0146 Confined spaces

**Subdivision N** – Material handling and storage
- 1910.178 Powered industrial trucks
- 1910.179 Overhead and gantry cranes
- 437-002-0221 Additional Oregon rules for handling materials
- 437-002-2225 Vehicles for highway and road operations, characteristics, and maintenance

**Subdivision O** – Machinery and machine guarding
- 1910.219 Mechanical power-transmission apparatus

**Subdivision R** – Special industries
- 1910.262 Textiles
1910.265 Sawmills
1910.268 Telecommunications
437-002-0312 Oregon rules for pulp, paper, and paperboard mills

**Subdivision RR** – Electrical power generation, transmission, and distribution
  - 437-002-2311 Working on or near exposed energized parts
  - 437-002-2322 Special conditions

**Subdivision S** – Electrical
  - 1910.303 Electrical – General requirements
  - 1910.308 Electrical – Special systems
  - 1910.333 Selection and use of work practices

**Division 3 – Construction**

**Subdivision A** – General
  - 1926.6 Incorporation by reference

**Subdivision C** – General safety and health provisions
  - 1926.26 Illumination

**Subdivision D** – Occupational health and environmental controls
  - 1926.56 Illumination

**Subdivision O** – Motor vehicles, mechanized equipment, and marine operations
  - 437-003-3225 Vehicles for highway and road operation characteristics and maintenance

**Subdivision S** – Underground construction, caissons, cofferdams, and compressed air
  - 1926.800 Underground construction
  - 1926.803 Compressed air

**Division 4 – Agriculture**

**Subdivision E** – Exits/Plans
  - 437-004-0405 Exits and emergency action plan

**Subdivision F** – Manlifts
  - 437-004-0570 Manlifts

**Subdivision J** – Work environment
  - 437-004-1120 Agricultural labor housing and related facilities
  - 437-004-1140 Lighting

**Subdivision N** – Material handling
  - 437-004-1680 Storage of hazardous chemicals
  - 437-004-1700 Forklifts and other powered industrial trucks

**Division 7 – Forest activities**

**Subdivision C** – Planning, first aid, and work conditions
  - 437-007-0240 Night logging
It’s dark out there
By Ellis Brasch

Darkness is not only a playground for scary things that haunt our imagination at night. It’s also a hazard that makes safely accomplishing many real-world activities difficult or impossible – especially this time of the year as our daylight hours continue to wither. Our depth perception, color recognition, and peripheral vision are all compromised in the dark. And we have even more difficulty seeing in darkness as we get older.

We see best in daylight because our eyes are most sensitive to high contrast objects, their color, their size, and how they move in their surroundings. But, as the days get shorter through the winter solstice, we will be spending more time in darkness. What to do? Here are a few tips on dealing with darkness this winter.

Slow low down and watch the road when you’re driving
The low contrast between light and dark at night makes it especially challenging when you’re driving. On a dark road, you can see only as far as your headlights – with high-beam headlights on, that’s only about 400 feet. If you’re driving too fast, you won’t have time to avoid anything that happens to wander across your path – especially if you’re encountering foul-weather hazards such as rain, snow, or fog.

Keep in mind that using high beam headlights during bad weather can also make it difficult for oncoming drivers to see. Generally, you should use high beams at night when other vehicles are not present, and the weather is fair.

Tips for driving at night:

- Focus only on the task of driving.
- Stay alert; drowsy driving and impaired driving are leading causes of vehicle crashes and fatalities.
Make sure your headlights, taillights, and turn signals are working and the lenses are clean; it is illegal to drive at night or in bad weather with only the parking lights on.

- Watch out for pedestrians, cyclists, and wildlife.
- Look slightly to the right of headlights from an oncoming vehicle and watch the road edge or fog line to lessen the blinding effect of glare.
- Turn on your parking lights or emergency flashers when you are stopped on a road or shoulder and visibility is limited.
- Drive defensively and slow down.

**Be visible when you’re working outdoors**

It's a good idea to ensure that everyone who will be working outdoors at night or when visibility is poor wears appropriate high-visibility reflective clothing. It’s also a requirement – day or night – for employees who work in a street or highway right-of-way and are exposed to traffic or construction equipment.

When you must wear a high-visibility upper-body garment, Oregon OSHA rules require that the high-visibility colors (such as strong red, orange, yellow, and yellow-green or fluorescent versions of these colors) contrast sufficiently with other colors in the area to make you stand out. The garments must also reflect from all sides for 1,000 feet during hours of darkness.

Check out Oregon OSHA’s fact sheet, “High-visibility safety apparel – unraveled,” for more information.

**Check for broken lights and replace them promptly**

Many of the complaints that Oregon OSHA receives about unsafe workplaces during the winter come from employees who have difficulty seeing where they are going or what they are doing because existing lights are not working. Typical complaints:

- “Lights are out and there is dim lighting in the stairwell.”
- “Broken lights in the parking lot make it unsafe at night.”
- “Light bulbs burned out at the back of the warehouse make it hard to see when we’re working at night.”
- “We come in for the night shift at 10 p.m., but the lights automatically turn off at 11 p.m.”
- “The path has no lighting exposing us to slips, trips, and falls.”
- “The work area is not adequately lit at night. Only six of the 12 lights under the awning are working.”

Most of these complaints could be resolved simply by ensuring that existing lights in the workplace are not broken and sufficiently bright. Oregon OSHA’s lighting rules require that exits and exit routes have adequate lighting and exit signs be clearly visible. And adequate lighting must be provided for rooms, buildings, and other work areas. How much lighting is adequate? Check out “Everything you need to know about Oregon OSHA’s lighting rules” in this issue to learn more.
We are a small company that keeps our safety data sheets in a binder. Does Oregon OSHA have any requirements covering when we must update them? As you are probably aware, Oregon OSHA’s key requirements for safety data sheets are covered in its Hazard Communication Standard, but there is no requirement in the standard covering when employers such as yourself must update them. However, there are such requirements for chemical manufacturers, importers, and distributors:

- Chemical manufacturers or importers must ensure that distributors and employers are provided with an updated safety data sheet with the first shipment after a safety data sheet is updated.
- Distributors must also ensure that updated safety data sheets are provided to other distributors and employers with the first shipment after a safety data sheet is updated.
- If a chemical manufacturer or importer preparing the safety data sheet becomes newly aware of any significant information regarding the hazards of a chemical, or ways to protect against the hazards, this new information must be added to the safety data sheet within three months. If the chemical is not currently being produced or imported, the chemical manufacturer or importer shall add the information to the safety data sheet before the chemical is introduced into the workplace again.

When you purchase hazardous chemicals from a manufacturer, distributor, or importer, each container must have a label and include a safety data sheet that classifies the chemical and provides specific information about its hazards. As an employer, you are responsible for keeping a safety data sheet in the workplace for each hazardous chemical that your employees use – a binder is acceptable. Just make sure that the binder is readily accessible during each work shift to employees when they are in their work areas. Electronic access and other alternatives to maintaining paper copies of the safety data sheets are also permitted, as long as there are no barriers to immediate employee access.
Oregon OSHA hosts second Spanish-language conference

By Aaron Corvin

Building on its ongoing efforts to expand outreach to the most vulnerable workers, Oregon OSHA held its second Spanish-language conference on Nov. 8 at the Oregon State Fairgrounds. The event drew more than 180 participants and covered a variety of workplace health and safety topics entirely in Spanish.

The all-day event addressed workers’ rights while on the job and how workers can assert their rights to a safe workplace. The event also addressed protecting workers’ health and safety at work and at home, and protecting against wage theft.

The event featured presentations by safety and health professionals, other experts, and lunch and exhibits.

The event’s topics included:

- Asserting your right to a safe workplace
- Protecting your health at work and at home
- Identifying and addressing common workplace hazards
- Safety and health in:
  - Agriculture
  - Construction
  - Food processing
  - Manufacturing
  - Hospitality
  - Caregivers
- Role of the supervisor in workplace safety
- Protecting yourself from wage theft
- Whistleblower Protection Program

The conference underscores Oregon OSHA’s commitment to bolstering its outreach efforts, breaking down language barriers, and connecting with more workers and employers about workplace health and safety resources.

Visit Oregon OSHA’s Spanish-language online training courses and learn about the division’s PESO program, a bilingual program that helps English-speaking employers train and talk about workplace safety and health issues with Spanish-speaking workers.

Workers have a right to a safe and healthy workplace. That includes the right to raise concerns free from retaliation and to file a complaint with Oregon OSHA, which advances safety for all Oregon workers through enforcement, consultation, technical, and public education and training services. The Ombuds Office for Oregon Workers, an independent advocate, offers workers help in understanding their rights within workplace safety and health rules, and their rights within the workers’ compensation system. The office’s toll-free phone number is 800-927-1271.

Moreover, the Department of Consumer and Business Services (DCBS) Multicultural Communications Program provides outreach to communities with limited English proficiency. That outreach includes information about on-the-job safety and health. The program includes a toll-free phone number for Spanish-speaking Oregonians: 800-843-8086.

For more information about Oregon OSHA conferences, visit the division’s conferences page, send an email to oregon.conferences@dcbs.oregon.gov or call 503-947-7411.
Although carbon monoxide’s reputation as a silent killer is well known, it continues to find unsuspecting victims – especially during the winter. While home furnaces and heaters are responsible for many victims of carbon monoxide poisoning, it is also a threat in the workplace.

Too many workers still don’t know that small gas-powered engines produce large quantities of carbon monoxide that can have deadly consequences when they are operated in poorly ventilated areas.

**What’s the problem with carbon monoxide?**

Carbon monoxide robs oxygen from your blood when it enters your lungs. That means there’s less oxygen for your heart, brain, and other vital organs – and without oxygen, they will shut down. Aside from subtle warning signs – headache, fatigue, dizziness, and drowsiness – you won’t know you are ill because carbon monoxide is colorless and odorless.

Large amounts of carbon monoxide can overcome you without warning, causing you to lose consciousness and suffocate. The National Institute for Occupational Safety and Health (NIOSH) notes that carbon monoxide levels above 1,200 parts per million could cause death or irreversible health effects within 30 minutes, known as “immediately dangerous to life and health.”

**Know the risks**

Your risk of becoming a carbon monoxide victim depends on a number of factors, including the concentration of carbon monoxide in the air, how long you are exposed, and your exertion level. Oregon OSHA doesn’t allow a worker to be exposed to more than 50 parts per million averaged over an eight-hour time period (carbon monoxide is measured in parts per million or “ppm”).

However, other safety and health organizations have established guidelines at lower exposure levels. For example, the American Conference of Governmental Industrial Hygienists (ACGIH) has assigned carbon monoxide a threshold limit value or “TLV” of 25 ppm for an eight-hour workday.

Those numbers aren’t likely to help you, however, unless you have access to personal air monitoring equipment. If you are using gas-powered equipment, play it safe and stay away from poorly ventilated areas – even in places you might consider safe, such as parking garages and warehouses.

**Tips for staying safe**

- Know the sources of carbon monoxide poisoning and its symptoms (gasoline, natural gas, oil, propane, coal, and wood all produce carbon monoxide).
Keep internal-combustion equipment in good operating condition.
Prohibit the use of gasoline-powered tools and engines in poorly
ventilated areas.
Test the air regularly in poorly ventilated areas and use mechanical
ventilation when possible to keep carbon monoxide levels below safe
levels.
Provide personal CO detectors for workers in areas where carbon
monoxide exposure is possible.
Consider converting from gasoline-powered equipment to equipment
powered by electricity or batteries when possible.
Educate workers on the dangers of carbon monoxide poisoning and
the symptoms and control of CO.

Do not
- Run a car or truck inside a garage attached to your house, even if you
  leave the door open.
- Burn anything in a stove or fireplace that isn't vented.
- Heat your house with a gas oven.

Use a generator, charcoal grill, camp stove, or other gasoline or
charcoal-burning device inside your home, basement, or garage or
outside within 20 feet from a window, door, or vent.

Install a carbon monoxide detector in your home
Carbon monoxide detectors are essential for any home with fuel-burning
appliances such as a furnace, water heater, range, cooktop, or grill. All-
electric homes should have carbon monoxide detectors, too, because carbon
monoxide can leak into a house from an attached garage or from a nearby
backup generator used during a power outage.
Consider buying a detector with a digital readout, which can also tell you the
highest level of carbon monoxide concentration in your home.
Replace your carbon monoxide detector every five years.

More information
Check out Oregon OSHA’s A-to-Z topic page on carbon monoxide for more
information about carbon monoxide.
High school students across Oregon are encouraged to let their video or graphic design skills shine by engaging in a competition held for a good cause: increasing awareness about workplace safety for young workers. They will have the opportunity to do so using updated contest rules. Those rules empower them to choose a key message, theme, or tagline for their video or graphic design piece. This is different than previous contests that featured a predesignated tagline.

The 2023 media contest, organized by the Oregon Young Employee Safety Coalition (O[yes]), is now open for submissions. The contest calls on participants to capture the attention of high school teens and persuade them to take the O[yes] online Safety Awareness Training to boost their knowledge of how to stay safe and healthy while on the job. Contestants may do so by either creating a video that is between 30 to 90 seconds in length or by crafting a graphic design piece. They get to choose a key message, theme, or tagline to help make their media project stand out and effectively reach their audience.

The top three entries in each of the two media categories will take home cash prizes ranging from $300 to $500. In each category, the first-place winner’s school, club, or organization will receive a matching award.

Some contestants may dream up a bold, splashy graphic design to get their message across. Others may grab a smartphone or camera and develop a video that captivates their audience with documentary-style seriousness. Either way, contestants are expected to choose their key message, theme, or tagline in a wise manner as they work to persuade teens to take positive action by using the O[yes] online Safety Awareness Training.

While they carry out their projects, contestants must ensure the health and safety of their team. No one should be endangered while creating their video or graphic design project.

The deadline for submissions is 5 p.m. Friday, Feb. 17, 2023.

Contestants are encouraged to submit entries online. Submissions may also be mailed on a USB thumb drive. All participants will be invited to a live-streamed event in which all finalist submissions will be shown and the top three winners in each category will be revealed.

For more information about the entry form and rules, contest expectations, and resources – including graphic design and video examples, and the entries that won in 2022 – visit the O[yes] online contest page.

The contest sponsors are local Oregon chapters of the American Society of Safety Professionals, Construction Safety Summit, Central Oregon Safety & Health Association, Hoffman Construction Company, Oregon Institute of Occupational Health Sciences at OHSU, Oregon OSHA, SafeBuild Alliance, SAIF Corporation, Oregon SHARP Alliance, and the Oregon Utility Notification Center.
Oregon OSHA’s Micah Ashby: Forever a Hero Scholarship winner

By Ellis Brasch

Oregon OSHA senior safety compliance officer Micah Ashby accepted Columbia Southern University’s 2022 Forever a Hero Scholarship award at Oregon OSHA’s Bend field office on Dec. 9.

Columbia Southern University awards the scholarship annually to a military veteran for outstanding contributions to their community. The scholarship will cover up to $26,100 of Ashby’s master’s degree program in occupational safety and health at the university. He expects to graduate in 2025.

Ashby enlisted in the U.S. Navy as an aircraft structures mechanic in 2005. In 2006, he volunteered to serve in Iraq and spent a year at Camp Bucca with Naval Provisional Detainee Battalion 2. When that tour ended, he returned to the United States, where he was based at Naval Air Station Whidbey Island, Wash., before his final deployment to Okinawa, Japan. He received two Navy Commendation Medals, one Army Commendation Medal, and the Iraq Campaign Medal for his military career.

Andrew M. Roman, director of the Department of Veteran Initiatives at Columbia Southern University, presents the award certificate to Micah Ashby at Oregon OSHA’s Bend Field Office.

Photo credit: Barto Watkins.
Incident Alert!

What happened?
Three toes on a maintenance technician’s right foot were amputated while he was performing routine maintenance on a tire shredding machine.

How did it happen?
The 42-year-old maintenance technician started his shift at 6 a.m. His first job was to do “bed-knife flip” maintenance on a Grizzly M80 tire shredding machine. The machine, more than 19 feet long, was powered by a 300-horsepower motor that turned a large rotor with 50 replaceable knives and 10 stationary “bed knives” built into the housing. The machine could process up to five tons of material per hour into small granules after it passed between the stationary bed knives and the rotating knives.

The bed-knife flip – a task that involved turning the bed knives over and adjusting them – had to be done every 20 hours. Before starting that task, the technician locked out the motor, used the machine’s hydraulic unit to raise the guard that covered the knives, then secured the hood, and locked out the hydraulic unit.

After locking out the machine and the hydraulic unit, the technician stepped onto the housing. He stood on the end of the rotor and prodded it with the steel-toed boot on his right foot, trying to loosen tire debris. He took two steps on the rotor then slipped and started to fall. As he fell, the tip of the boot on his right foot caught between a stationary knife and the knife bed, which sliced through the boot and three of his toes.

Key findings
- Employees were allowed stand on the rotor and to turn it with their feet to remove tire debris. The company had a written procedure that required employees to use a special tool to turn the rotor and prohibited them from standing on the rotor or turning the rotor with their feet. But employees thought that the tool was not effective, and they also been trained to stand on the rotor to remove debris and to turn it with their feet. The plant manager said he knew that employees were not following the written procedure, but he was trying to determine a safer, effective way for employees to do the bed-knife flip.
- There were at least four other documented incidents associated with the bed-knife flip between 2018 and 2021, but the company...
did not follow up on corrective actions for some of them. Reports provided by the company did not indicate that corrective actions were requested by management or the safety committee.

- The company’s disciplinary policy was not effective. Employees said that the company’s “Disciplinary Action Plan” was never explained to them or enforced. Employees who had a history of working unsafely received verbal and written warnings, but they were not disciplined as the plan required.
- Supervision was not adequate. The maintenance technicians worked the weekend shift (from 6 a.m. to 6:30 p.m., Friday through Sunday) without much supervision and did the bed-knife flip task without assistance.

What did the company do to prevent the incident from happening again?

- The company revised its written bed-knife flip procedure; the revision prohibited employees from standing on the machine bed and required them to use a tool to turn the rotor.
- The company formally reviewed the new procedure with all affected employees and trained them.
- The company regularly observed employees following the procedure and coached them when necessary.
- The company changed the maintenance technician’s weekend shift to Monday through Friday to increase management supervision.

Violations

OAR 437-001-0760(1)(a) – Rules for all Workplaces, Employers’ Responsibilities: The employer did not see that workers were properly instructed and supervised in the safe operation of any machinery, tools, equipment, process, or practice which they were authorized to use or apply.