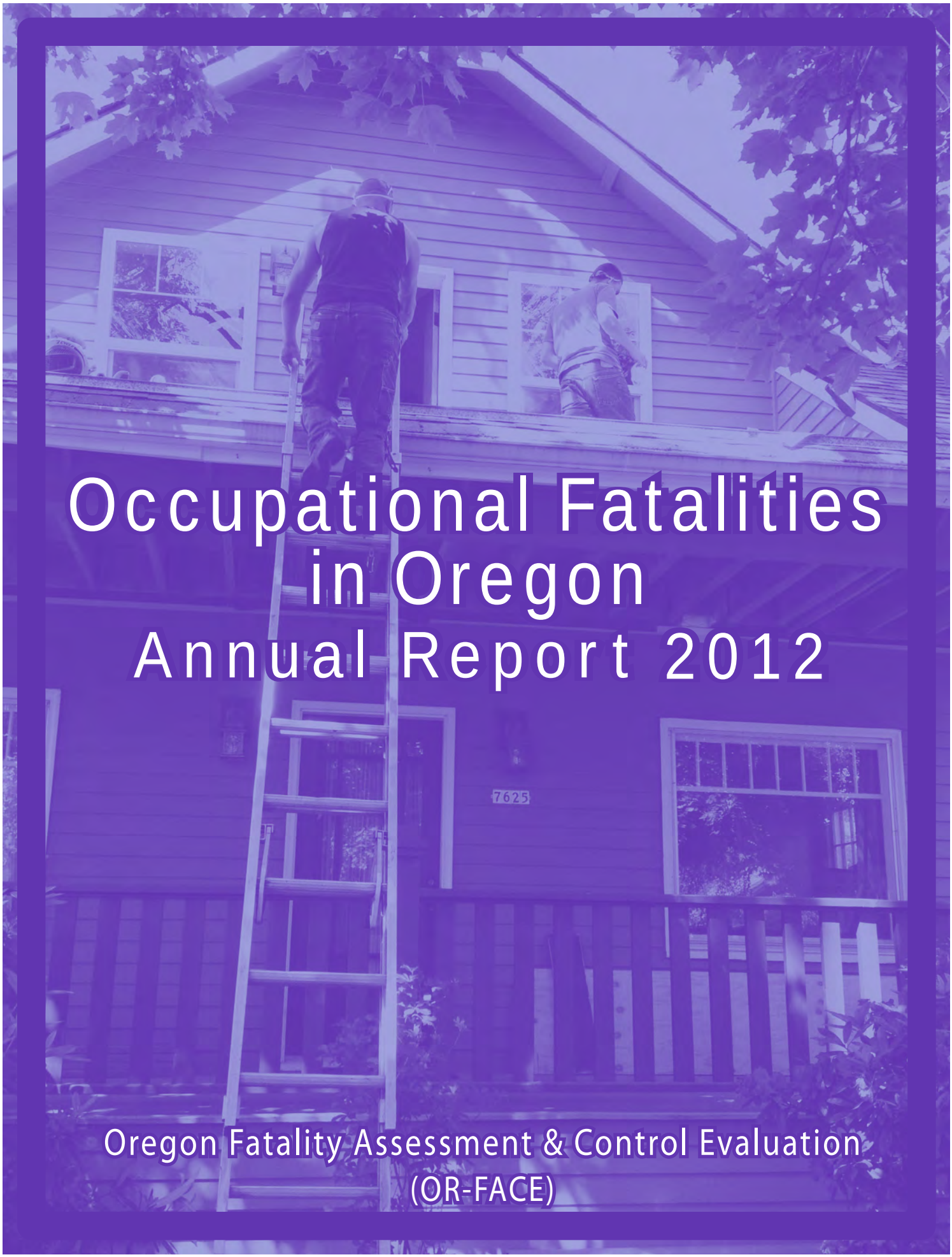

Occupational Fatalities in Oregon
Annual Report 2012

Oregon Fatality Assessment & Control Evaluation
(OR-FACE)

FACE Definitions

The Oregon Fatality Assessment and Control Evaluation program investigates work-related fatalities that are caused by a traumatic injury when the injury occurs within Oregon.

A location *within Oregon* means the incident, or some portion of the incident, occurs within the geographical boundaries of the state of Oregon, including the coastal waters, airspace, and subterranean portions of the state.

A *work relationship* exists if an incident occurs (a) on the employer's premises and the person was there to work, or (b) off the employer's premises and the person was there to work, or the event or exposure was related to the person's work or status as an employee.

Work is defined as duties, activities, or tasks that produce a product or result, are done in exchange for money, goods, services, profit, or benefit, and are legal activities.

In Scope

- Self-employed, family, or volunteer workers, exposed to the same work hazards and perform the same duties or functions as paid employees and that meet the work-relationship criteria.
- Suicides and homicides that meet the work-relationship criteria.
- Fatal events or exposures that occur when a person is in travel status, if the travel is for work purposes or is a condition of employment (excluding commute).

Out of Scope

- Institutionalized persons, including inmates of penal and mental institutions, sanitariums, and homes for the aged, infirm and needy, unless employed off the premises of their institutions.
- Fatal heart attacks and strokes, unless causally related to a traumatic injury or exposure.
- Fatal events or exposures that occur during a person's recreational activities that are not required by the employer.
- Fatal events or exposures that occur during a person's commute to or from work.

Adapted from Bureau of Labor Statistics (2001), *Census of Fatal Occupational Injuries: Definitions.* U.S. Department of Labor. Available online (March 11, 2004): http://stats.bls.gov/iif/oshcfdef.htm

Acronyms

BLS	U.S. Bureau of Labor Statistics
CDC	Centers for Disease Control and Prevention
CFOI	U.S. Census of Fatal Occupational Injuries
NAICS	North American Industry Classification System
NTSB	National Transportation Safety Board
NVDRS	National Violent Death Reporting System
OIICS	Occupational Injury and Illness Classification System
Oregon OSHA	Oregon Occupational Safety and Health Division
SOC	Standard Occupational Classification

Annual Report 2012

Oregon Fatality Assessment and Control Evaluation

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This report is dedicated to the men and women in Oregon who have lost their lives as the result of traumatic workplace injuries, in the hope that better understanding of these fatal incidents may help to save the lives of other workers in similar situations.

Oregon FACE Program

Oregon Institute of
Occupational Health Sciences -
Oregon Health & Science University

FACE Staff (Publication Year)
- Ryan Olson PhD
- Illa Gilbert-Jones MS, CIH, CSP
- Annie Cannon

Emeritus FACE Staff (Reporting Year)
- Jamie Jones MPH
- Erica Zoller MPH
- Annie Cannon

OR-FACE is supported by the National Institute for Occupational Safety and Health (grant #2U60OH008472) through the Oregon Health Authority (Jae Douglas, PhD MSW, Principal Investigator).

Report Summary

REPORT HIGHLIGHTS

- OR-FACE conducts surveillance, investigation, assessment, and outreach related to traumatic occupational fatalities in Oregon (see pp. 5-6 for descriptions of activities).
- OR-FACE published the investigation report, Mechanic killed by excavator bucket during maintenance.
- OR-FACE presented the scientific paper, “Aging workers at increased risk of tatal transportation-related injuries.”
- Characteristics of fatal events and the workers involved are quantified in charts (see pp. 8-12).
- Abstracts provide a brief description of each incident and contributing factors (see pp. 13-23).
- Contact information for OR-FACE to access resources and feedback (see back cover).

INTRODUCTION

In 2012, Oregon Fatality Assessment and Control Evaluation recorded 46 fatal occupational incidents with 47 worker deaths. The number represents a rate of 2.6 fatalities per 100,000 employed workers in the civilian labor force in Oregon. The national worker fatality rate in 2012 was 3.4 per 100,000 full-time equivalent workers.

The following notable trends occurred in 2012.

- The total number of fatalities is lower compared to the last three years. In 2009, 2010, 2011 there were 64, 50, and 59 worker deaths, respectively.
- In recent years, transportation was the most common industry with fatalities among workers in Oregon. In 2012, construction was the most common industry and occupation for fatalities, followed by transportation second. The most common fatal event in 2012 was violence followed by transportation.

Core Activities

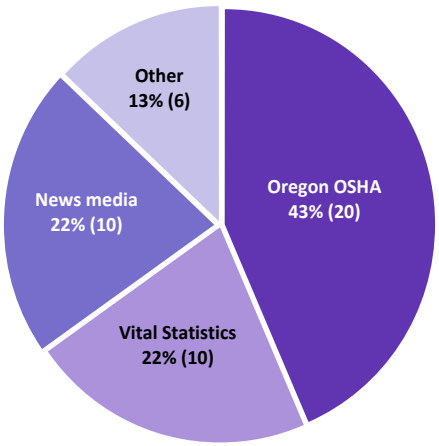
SURVEILLANCE

The OR-FACE surveillance system is comprised of Oregon OSHA fatality notifications, quarterly reports of death certificates marked “at work” from the Oregon Public Health Division’s Vital Statistics, a daily scan of a programmed Google keyword alert and Oregon Emergency Response System (OERS) reports. For 2012, earliest first notification for work-related fatalities originated mostly from news media, vital statistics and Oregon OSHA (see below)

ASSESSMENT

When fatalities are identified as FACE cases, sufficient data and information are collected about each incident to produce an abstract. OR-FACE analyzes incident data to identify and summarize trends. Incidents are grouped and coded by industry (NAICS), occupation (SOC), and event (OIICS), and by demographic and other variables, such as the specific source or setting of the injury. Each OR-FACE incident is summarized with an abstract based on the surveillance data. Abstracts illuminate each fatality with the aim of preventing similar fatalities in the future. Assessment data sources for each case include Oregon OSHA investigation reports, Medical Examiner reports, police investigations, news reports, Workers’ Compensation records, and occasionally other records such as business profiles, hospital or emergency response records, or investigation reports from other sources.

Source of notification for OR-FACE incidents



Timing of notification following incident

	Total	Oregon OSHA	Vital Statistics	Google Alert	Other
0-2 days	28	15	0	7	6
3-30 days	8	4	1	3	0
1-3 months	5	0	5	0	0
3-6 months	3	1	2	0	0
6-12 months	2	0	2	0	0
12+ months	0	0	0	0	0

Core Activities

INVESTIGATION

In-depth investigations are conducted for selected cases by OR-FACE staff and contractors with relevant industry-specific expertise. Contractors work in conjunction with OR-FACE staff to produce reports, which are reviewed by a board of professional safety experts prior to publication. Investigation reports seek to draw urgent attention to safety issues present in the fatality cases. One investigation report was published in 2012. A mechanic was killed during a maintenance operation. The conveyor on a portable rock crusher malfunctioned and was being raised with the arm of a hydraulic excavator. The mechanic stood on the conveyor to rig a chain to the frame of the conveyor when the excavator operator leaned for a better view, and his jacket caught the controls causing the boom to suddenly drop, swing and crush the mechanic.

The OR-FACE report 2007-57-1, *Temporary mill worker killed in fall down manlift shaft*, was featured in the January 2012 edition of National Safety Council, Safety + Health. In September, the same publication highligted OR-FACE report, *Janitor using propane buffer killed by carbon monoxide*.

OR-FACE data on fall-related deaths reported in 2007 and 2008 Annual Reports were used by the Oregon OSHA Administrator as part of the rationale to increase the employer citation amount for fall-related deaths. The new rule on the penalty structure was adopted on May 2012 and became effective on July 1, 2012.

OUTREACH

OR-FACE outreach efforts include publications and their distributions, safety events and initiatives, posters, presentations. Published OR-FACE safety materials are distributed online, directly by mail, and through collaboration with partner organizations. In 2012, OR-FACE distributed 170 *Fallers Logging Safety* booklets to saw shops, schools, and equipment dealers. One hundred OR-FACE brochure, *Young Workers Stay Alive on the Job!* was distributed to a local high school.

A tool box talk initiative with three field studies was kicked off in 2012. The purpose was to develop and test the effectiveness of one-page guides for safety toolbox talks. Construction supervisors and employees were surveyed at the Mid-Oregon Construction Safety Summit and different image types were tested at a construction site. A collection of tool box talks were then finalized to be tested in the field in 2013.

OR-FACE attended three outreach meetings with Oregon OSHA in 2012. The first was the OSHA Construction Advisory board meeting with the aim of recruiting construction sites for field testing. The second and third were with OR-OSHA fatality investigators to both build a stronger collaboration with OSHA investigators and to nominate past OSHA cases for future OR-FACE investigations.

2012 Publications

Investigation Report

OREGON FATALITY ASSESSMENT AND CONTROL EVALUATION
www.ohsu.edu/croet/face
Center for Research on Occupational and Environmental Toxicology

Fatality Investigation Report OR 2008-01-1

SPECIAL ALERT -- Activation of machine controls by loose clothing, belts, or objects is a recurring contributing factor to occupational fatalities in Oregon.

Mechanic killed by excavator bucket during maintenance

SUMMARY

A 47-year-old mechanic was killed by an excavator bucket during a maintenance operation. The conveyor on a portable rock crusher had stopped working, and the mechanic and equipment operators were working to raise the conveyor with the arm of a hydraulic excavator to get underneath. The mechanic stood on the conveyor, 15 feet above the ground, to complete the task of rigging a chain to attach the frame of the conveyor to the lifting eye on the excavator bucket – when the excavator boom suddenly dropped and swung, and crushed him. The excavator operator had leaned forward for a better view of the mechanic working at the bucket, and when sitting back down the pocket of his raincoat caught on the left-side control handle for the boom, and activated it.

A mechanic was standing on the conveyor of a rock crusher (arrow), rigging the frame to an excavator bucket to lift the conveyor for maintenance. The excavator boom unexpectedly swung and dropped, and crushed him.

RECOMMENDATIONS

- **Loose clothing should be avoided when operating machinery and all tools/equipment should be stored outside the cab.**
- **Eliminate or reduce worker exposure to hazards by installing or purchasing equipment with protective features, such as "quick connects" or built-in anchor points.**

Keywords: Construction, Machinery [NAICS=423320]
Publication Date: September 4, 2012
This report is public information and free to copy

Oregon FACE Program
OR 2008-01-1
Page 1

Presentations

- Olson, R., Walters, J., Karr, J., & Zoller, E. (May 27, 2012). Aging Workers at Increased Risk of Fatal Transportation-Related Injuries. Association for Behavior Analysis International. Seattle, WA.
- Zoller, E. (April 26, 2012). Staying Safe and Healthy at Work: A Guide for Young Employees Oregon Health & Science University. Portland, OR.
- Cannon, A., Olson, R., Zoller, E. (August 16, 2012). Out of Sight, Out of Mind: On-site Toolbox Talk Guides to Improve Construction Safety. CROET Summer Internship Program

Find published presentations, safety booklets, reports, and other resources at the OR-FACE website (http://www.ohsu.edu/xd/research/centers-institutes/oregon-institute-occupational-health-sciences/outreach/or-face/; or QR code below). New reports are published regularly.

Oregon Fatality Assessment and Control Evaluation reports are for information, research, or occupational injury control only. OR-FACE is a research program, and has no legal authority to enforce state or federal occupational safety and health standards. The identity of the decedent, employer, and witnesses are not included in reports or alerts. FACE data are protected from disclosure under Oregon law (ORS 432.060).

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Oregon FACE

The Oregon Occupational Fatality Assessment and Control Evaluation (OR-FACE) Program is a National Institute for Occupational Safety and Health (NIOSH) sponsored program designed to prevent occupational fatalities through surveillance, targeted investigation, assessment, and outreach associated with traumatic work-related deaths in Oregon.

NEWS AND UPDATES

July 2014: OR-FACE published Fatality Investigation Report OR 2013-27-1, "Collapsed roof trusses kill carpenter foreman."

June 2014: OR-FACE published three Toolbox Talk guides based on occupational fatalities in logging: Logger Killed Under Rigging When Carriage Drops, Timber Faller Killed While Working Under a Hung Tree Limb, and Logger Killed by Falling Sheave When Yarder Tower Collapses. The OR-FACE website highlights the National Safety Stand-Down to Prevent Falls in Construction and provides a direct link to resources.

April 2014: OR-FACE published an investigation report, "Experienced Journey Machinist Killed While Operating an Engine Lathe." On April 28 OR-FACE attended the annual Workers Memorial Day honoring the fallen Oregon workers. To honor the forty-six who were lost to workplace deaths in 2013, their names were read aloud during the service.

CPWR videos based on FACE fatalities were embedded in the OR-FACE website. Videos are on the right column of the site.

To encourage participation in the National Safety campaign, Stand-Down to Prevent Falls in Construction the link and ad were prominently placed on the OR-FACE website.

January 2014: Illa Gilbert-Jones, CIH, CSP, started with OR-FACE on January 1 as Program Manager/Field Investigator. She has 25+ years of experience in health and safety in a variety of industries. OR-FACE toolbox talk initiative poster was presented at the mid-Oregon Construction Safety Summit in Bend, OR on January 28. Pictured are Illa and Dede

FEATURED INVESTIGATION REPORT

Collapsed roof trusses kill carpenter foreman (published July 2014)

OR-FACE ANNUAL REPORTS

2011 | 2010 | 2009
2008 | 2007 | 2006
2005 | 2004 | 2003

All links above are PDF's. To ensure accurate fatality surveillance, each Annual Report is closed out and published approximately 18 months after the end of a study year. The projected release date for the 2012 Annual Report is July 2013.

CONSTRUCTION FATALITY VIDEOS

The Center for Construction Research and Training (CPWR) created three short videos, each based NIOSH FACE construction fatality reports.

No New Year – Trench Collapse 0:00 / 3:11

A Simple Task – Fatal Ladder Fall

Charts

In charts and abstracts, OR-FACE highlights risk factorsand patterns in fatalities. For these analyses combinations in a few of the original two-digit occupational codesare split into subcodes: for industry (NAICS), Agriculture/Fishing/Forestry/Hunting (code 11) is separated into sub codes forestry/logging (code 113), fishing (code 114) and agriculture (codes 111-113); for occupation (SOC), Farming/Fishing/Forestry (code 45) is split into agriculture (code 45-2000), fishing (code 45-3000), forestry (code 45-4010) and logging (code 45-4020); for Construction/Extraction (code 47), and Transportation/Material Moving (code 53). For event (OIICS), Transportation is divided into types: Motor Vehicles, Mobile Machinery, Air, and Water.

There were eight OR-FACE cases where death occurred three or more days after the incident. Of these nine cases of delayed death, four were from injuries sustained from falls. One of these cases occurred 42 years after a logging injury, two cases were falls from ladders, and one case was a fall from a chair. The two deaths from transportation events were from injuries sustained in roll-over vehicle accidents.

Delayed Death

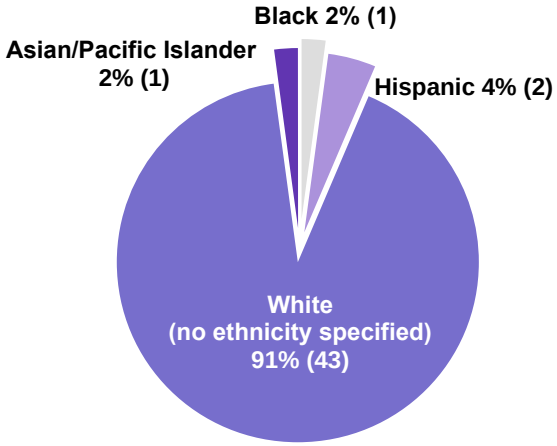
Worker Fatalities with Delayed Death from Date of Injury (over 2 days), 2012

EVENT	CAUSE OF DEATH	INTERVAL	FACE ID
Transportation	Complications of quadriplegia	16 years	OR-2012-27-1
Fall	Fracture thoracic spine at T12 with paralysis and terminal undiagnosed infectious disease complications	42 years	OR-2012-30-1
Fall	Complications of left femur fracture	5 days	OR-2012-41-1
Fall	Blunt force head trauma	3 days	OR-2012-34-1
Fall	Blunt force head trauma	16 days	OR-2012-4-1
Transportation (mobile machinery)	Hemothorax-crushing injury	8 days	OR-2012-23-1
Overexertion	Massive pulmonary thromboembolism	19 days	OR-2012-17-1
Overexertion	Complications of back injury and immobilization (pulmonary thromoboembolism)	~150 days	OR-2012-43-1

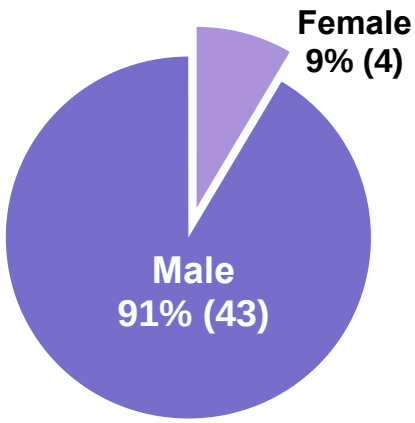
Charts

Relative to the past 6 years, in 2012, incidents by race/ethinicity and gender showed slight changes with a decrease in incidents involving Hispanics from a peak of 16% in 2010 to 4% in 2012 (range 2-16%). The two incidents in 2012 occurred in the forestry/logging industry. Cases involving individuals who were white (or no ethnicity specified) accounted for 91% of fatalities in 2012, the highest percentage in a six-year span (range 80-91%). Incidents involving females have been increasing since 2007, and in 2012 represented 9% of the incidents (range from 4-9% in prior years).

Worker Fatalities by Race/Ethnicity, 2012

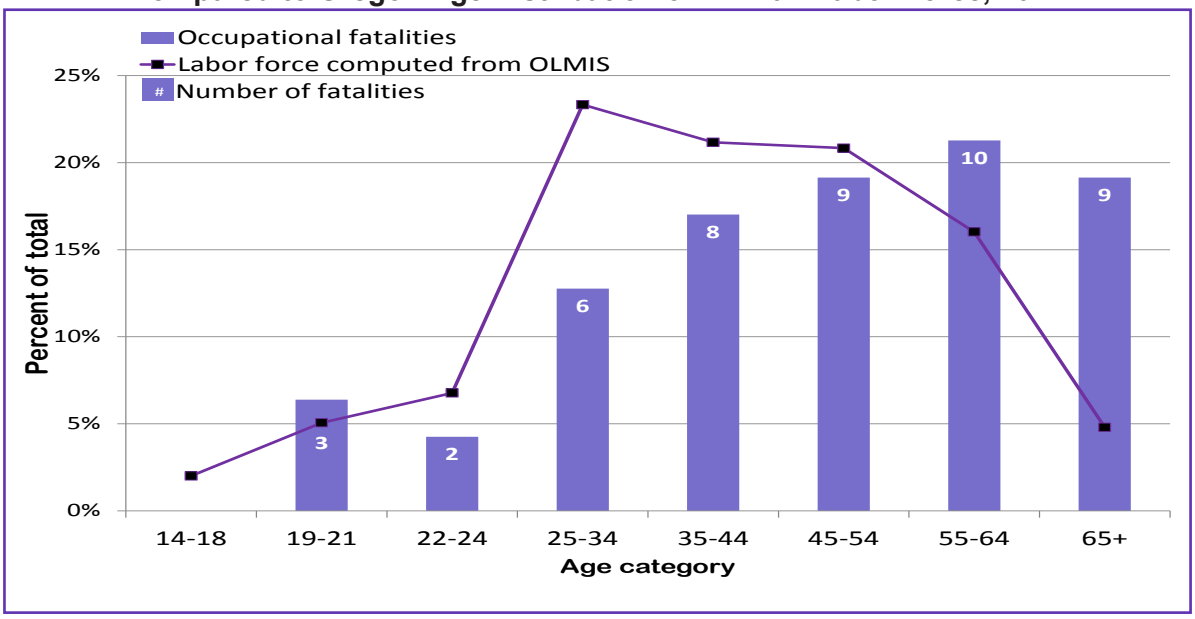


Worker Fatalities by Gender, 2012



The 65 and older age group accounted for 19% of all fatalities in 2012 which represented a 9% increase relative to the last three years. The eldest victim in 2012 was an 80 year-old agriculture employee. The industry sectors with the highest incidents for this age group were construction and transportation.

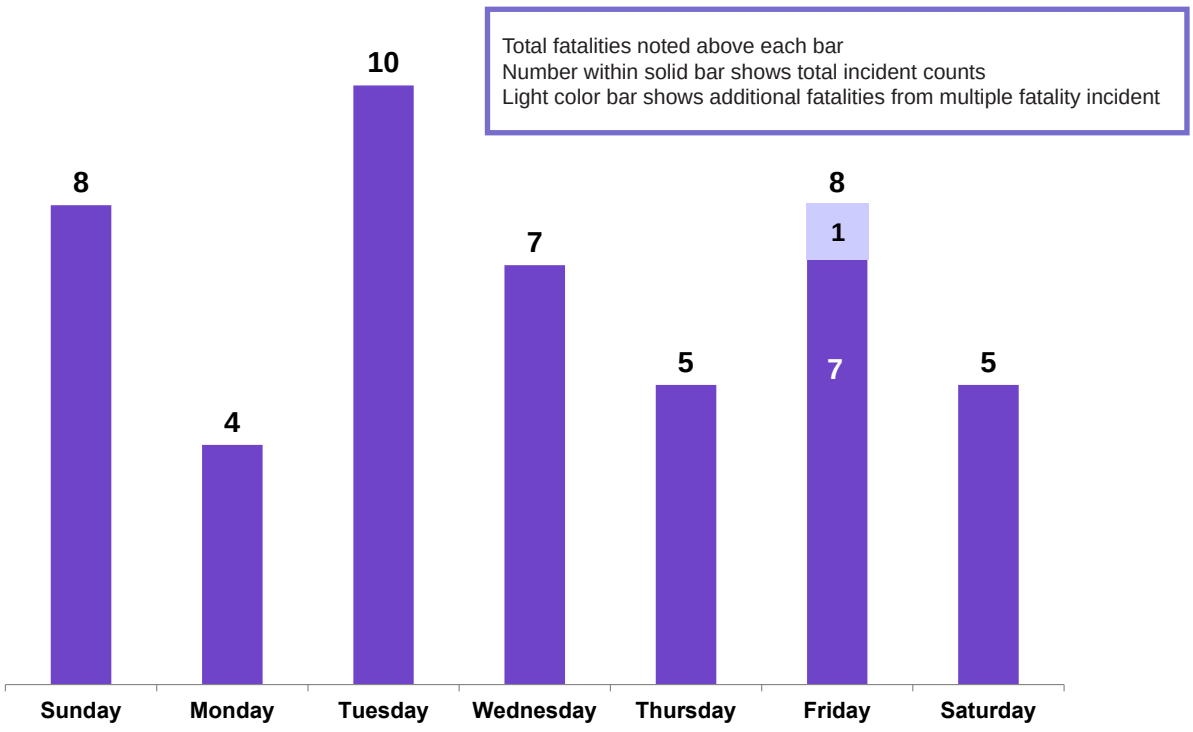
Occupational Fatalities in Oregon by Age
Compared to Oregon Age Distribution of Civilian Labor Force, 2012



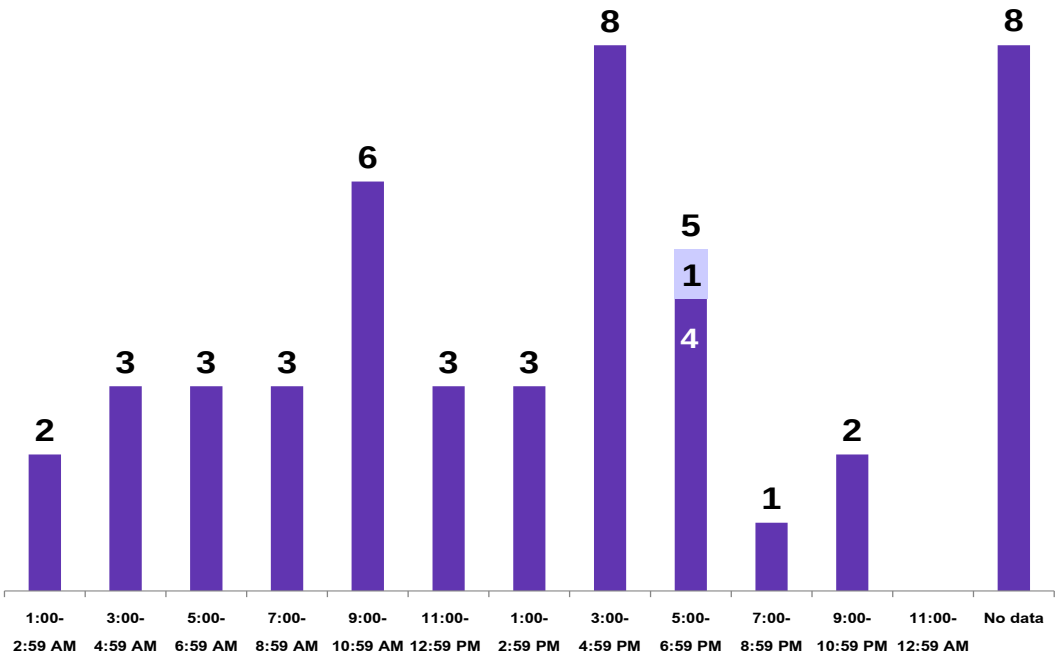
Source of labor force: OLMIS (Oregon Labor Market Information System), http://www.qualityinfo.org/olmisj/qwi Retrieved: February 2014. Source of fatality counts: OR-FACE

Charts

Worker Fatal Incidents and Total Fatalities by Day of Week, 2012

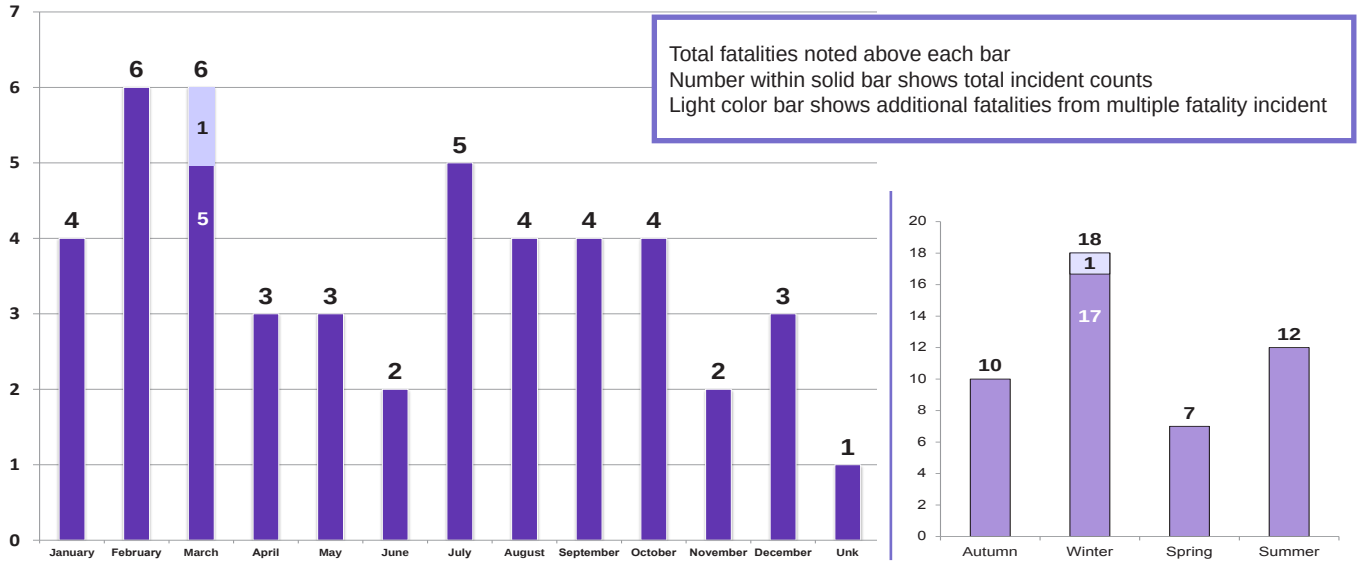


Worker Fatal Incidents and Total Fatalities by Time of Incident, 2012

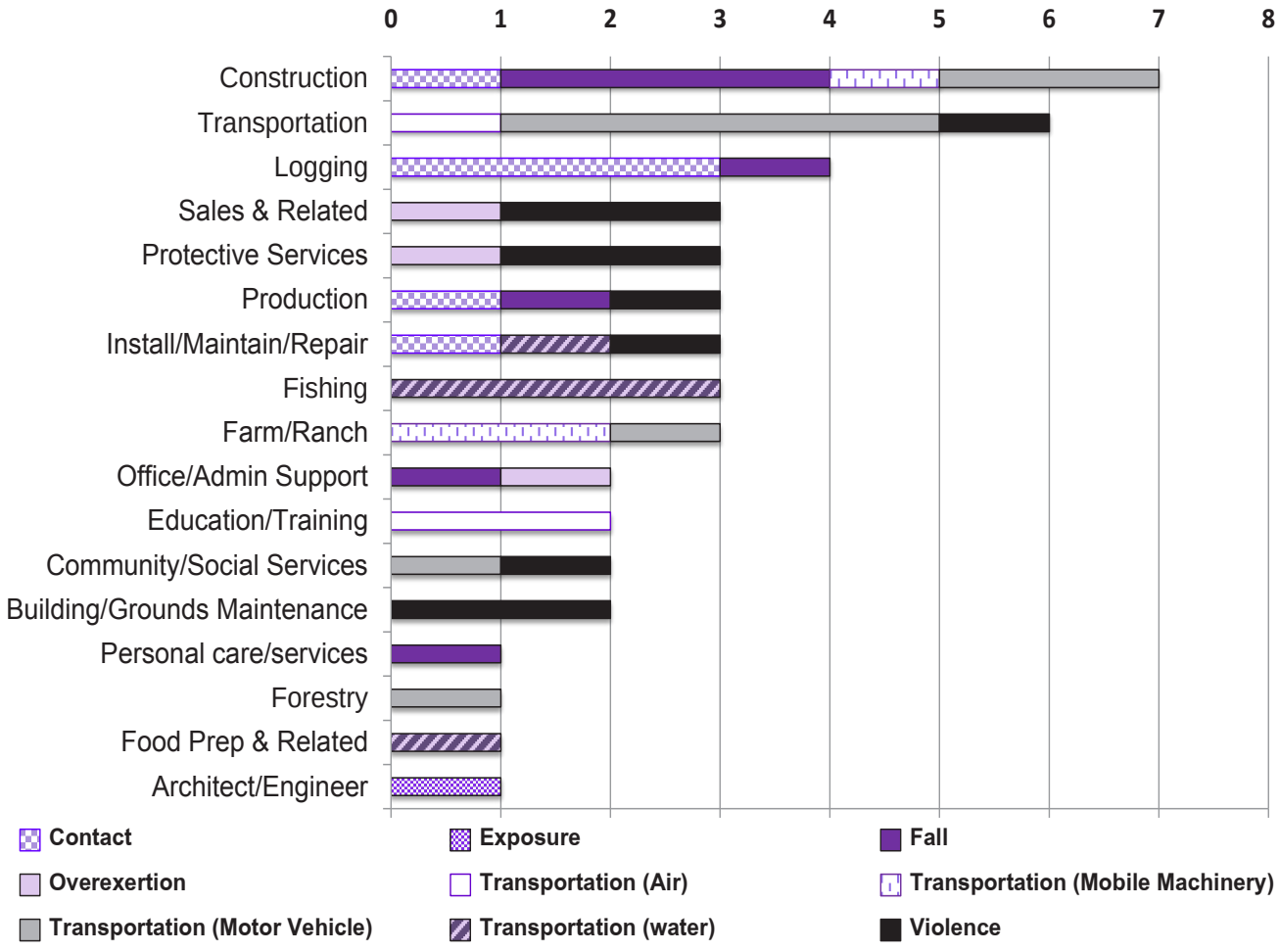


Charts

Worker Fatal Incidents and Total Fatalities by Month and Season, 2012

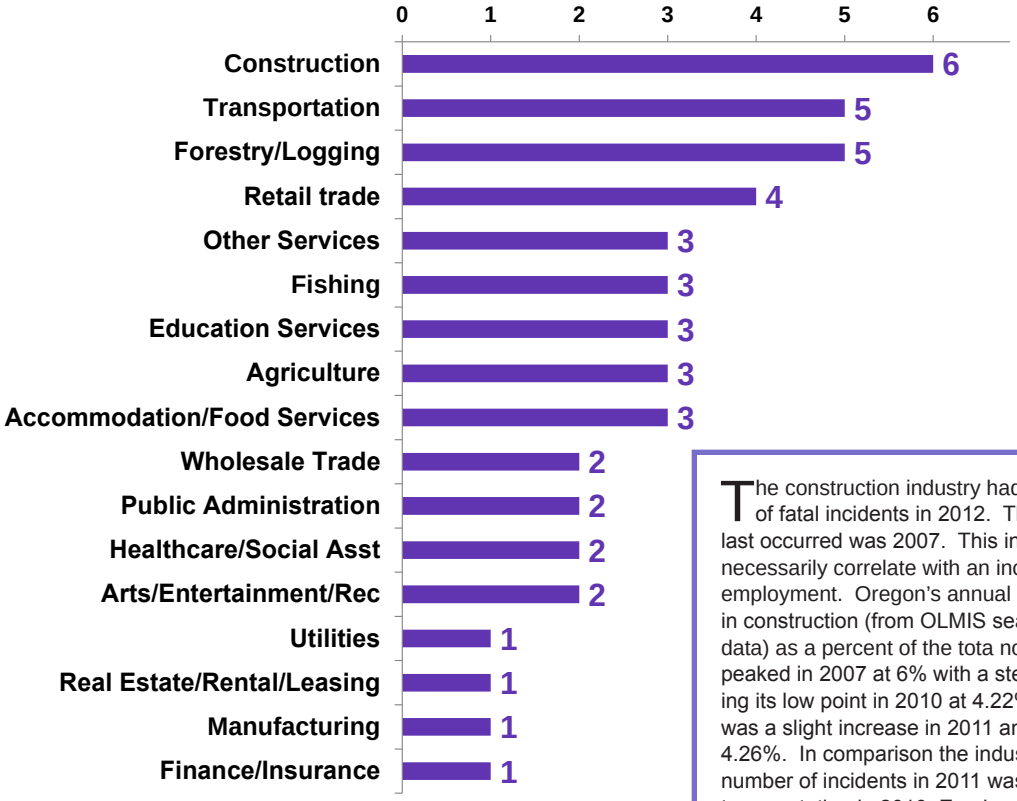


Worker Fatalities in Oregon by Occupation and Event, 2012



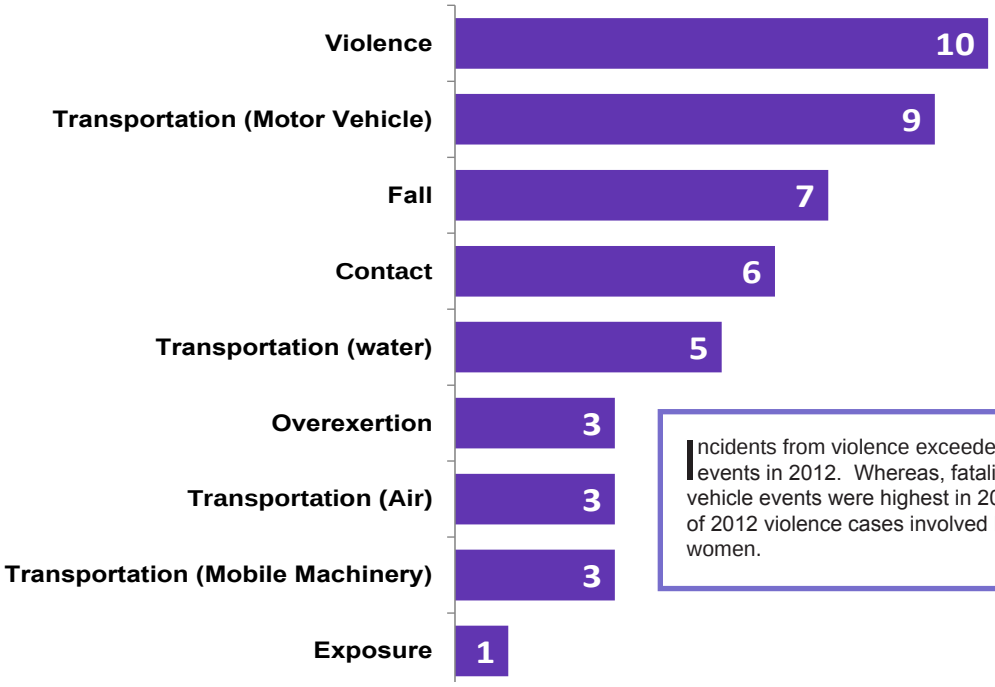
Charts

Worker Fatalities in Oregon by Industry, 2012



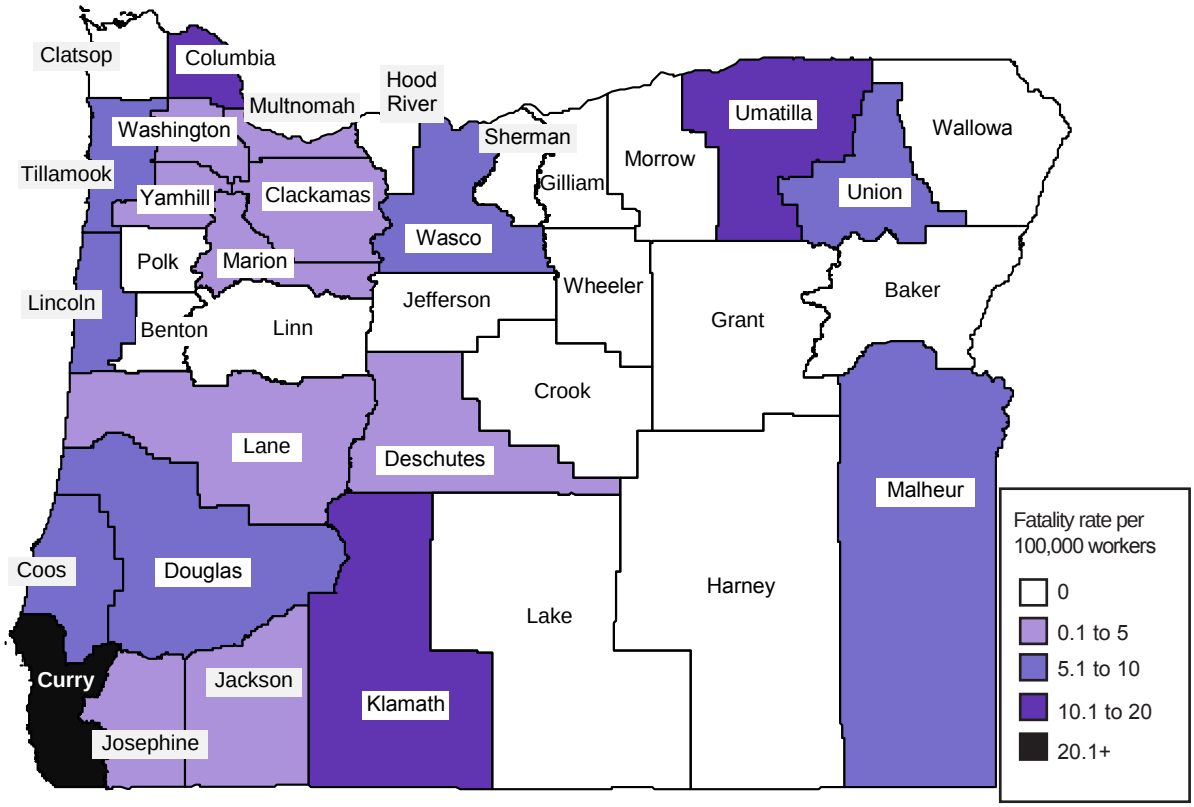
The construction industry had the highest number of fatal incidents in 2012. The year in which this last occurred was 2007. This increase does not necessarily correlate with an increase in contruction employment. Oregon's annual average employment in construction (from OLMIS seasonally adjusted data) as a percent of the tota nonfarm employment peaked in 2007 at 6% with a steady decline reaching its low point in 2010 at 4.22%. Afterwards, there was a slight increase in 2011 and 2012, 4.24 and 4.26%. In comparison the industry with the highest number of incidents in 2011 was forestry/logging and transportation in 2010. Employment data for both of these industries showed some decline but less than 1% since 2007.

Worker Fatalities by Type of Event, 2012



Incidents from violence exceeded transportation events in 2012. Whereas, fatalities from motor vehicle events were highest in 2009 and 2010. Two of 2012 violence cases involved homicide against women.

Oregon Counties



Oregon Population, Employed Labor Force, and Fatalities by County, 2012

	Total population	Employed labor force	Worker fatalities		Total population	Employed labor force	Worker fatalities
Oregon	3,883,735	1,788,730	47				
BAKER	16,210	6,707	0	LAKE	7,920	3,211	0
BENTON	86,785	41,694	0	LANE	354,200	161,848	3
CLACKAMAS	381,680	183,824	4	LINCOLN	46,295	20,492	2
CLATSOP	37,190	19,066	0	LINN	118,035	48,607	0
COLUMBIA	49,680	21,912	4	MALHEUR	31,395	11,785	1
COOS	62,890	25,153	2	MARION	320,495	140,106	1
CROOK	20,650	7,600	0	MORROW	11,300	5,074	0
CURRY	22,295	5,019	2	MULTNOMAH	748,445	373,015	5
DESCHUTES	160,140	69,472	1	POLK	76,625	35,198	0
DOUGLAS	108,195	39,396	3	SHERMAN	1,765	982	0
GILLIAM	1,900	1,104	0	TILLAMOOK	25,305	11,440	1
GRANT	7,450	2,968	0	UMATILLA	77,120	36,412	5
HARNEY	7,315	2,882	0	UNION	26,175	11,313	1
HOOD RIVER	22,875	13,487	0	WALLOWA	7,015	3,323	0
JACKSON	204,630	89,336	3	WASCO	25,485	13,428	1
JEFFERSON	21,940	8,308	0	WASHINGTON	542,845	272,777	2
JOSEPHINE	82,775	30,108	1	WHEELER	1,425	655	0
KLAMATH	66,740	26,553	3	YAMHILL	100,550	44,475	2

Sources: Portland State University Population Research Center and BLS Local Area Unemployments Statistics. Retrieved: January 2014

INFORMATION KEY
Description

Industry
Occupation

Date of Incident
County of Incident

OR-FACE Number

Abstracts

of fatal occupational incidents in Oregon by type of event

2012

Transportation – Contact –Violence
Falls– Overexertion– Exposure

Transportation (Motor Vehicle)

Struck by vehicle

Public Administration
Construction

February 28
Union

OR-2012-7-1

A 60-year-old public works employee on a road crew was struck by a vehicle. The crew members exited the flatbed truck parked in the southbound lane and were getting into position to do cold-patching work on the southbound lane of a two-lane road. An oncoming southbound vehicle attempted to pass the flatbed and struck the victim who was standing near the left side of the flatbed truck. Investigation revealed that other than a vehicle-mounted strobe light there were no other traffic control measures in place at the time of the incident. Toxicology report was negative for presence of controlled substances or common pharmaceuticals. Cause of death was blunt chest trauma.

Struck animal

Transportation
Transportation

March 10
Umatilla

OR-2012-10-1

A 59-year-old part-time taxi driver suffered a traumatic head injury after he struck a black cow on a highway. It happened at approximately 11:00 pm. The driver's side hood, windshield and vehicle roof were damaged in the collision. The two passengers stated that there was an ongoing conversation with the driver before impact. One noticed that the driver's head was turned while talking to the other passenger. Toxicology tests did not detect alcohol or the presence of controlled substances of common pharmaceuticals. The medical examiner declared that the cause of death was multiple blunt force injuries.

Struck by vehicle

Construction
Construction

July 20
Clackamas

OR-2012-15-1

A 48-year-old construction worker was killed while preparing for night construction work. The victim had placed his third temporary traffic control sign at the fog line (white line on the edge of road) on the southbound side of a two-lane road. At approximately 7:39 pm, an intoxicated motorist traveling southbound struck the worker. The victim suffered major injuries and was transported to a hospital where he died. The victim was wearing a fluorescent safety vest and orange helmet. His vehicle had a flashing light bar on the top, dipped headlights, and flashing orange hazards lights.

Worker Fatalities – Transportation

Crushed by vehicle Retail trade Transportation September 27, 1995 Multnomah OR-2012-27-1	A newspaper delivery man died at the age of 63 on January 2012 due to complications of traumatic quadriplegia from a previous occupational injury. The initial injury occurred on September 27, 1995 while he was trying to stop his moving vehicle. He was on his delivery route when his truck began to roll down the street. While trying to stop the vehicle he became pinned underneath. The accident left him a quadriplegic with complications that lead to his death.
Struck by vehicle Other Services Community/Social Services September 29 Umatilla OR-2012-28-1	A 64-year-old children's education minister was killed after being struck by a vehicle while she was attending a conference. At approximately 12:00 pm she was walking across a busy thoroughfare intersection when she was struck by a vehicle. She died 11 hours later of multiple traumatic head injuries at the hospital. Although unconfirmed, a news report indicated that there was no marked pedestrian crosswalk and that other similar incidences had occurred at the same location.
Truck roll-over crash Transportation Transportation November 15 Umatilla OR-2012-35-1	A 46-year-old log truck driver died from blunt injuries sustained when his truck rolled down an embankment. The victim had been driving log trucks for approximately one year and was hired by the company the previous month. He received training that included evaluation by other drivers and no problems were identified. A witness in a vehicle behind the log truck stated that the truck had gained speed and cut corners. At approximately 8 am the truck rolled down an embankment and the victim was ejected out the passenger door of the truck. The gas tank of the truck came to rest partially on the victim's head. There were no apparent defects with the brakes and the truck had passed a level 1 ODOT inspection during the 2nd quarter of that year. It could not be determined if the victim had been wearing his seat belt prior to the crash. The driver's side cab was totally crushed.
Truck roll-over Retail Trade Transportation December 30 Umatilla OR-2012-38-1	A 69-year-old truck driver was killed when the company pickup he was traveling in crashed. At approximately 6:45 am the pickup hit black ice, turned sideways and rolled into the median. The victim, who was a passenger, was found with his seatbelt on and his head trapped between the collapsed roof and the passenger seat headrest. Paramedics pronounced the victim deceased at the scene. Police report indicated that the driver presented no signs of intoxication. A witness reported overtaking the pickup and passing it at about 45-50 mph when the pickup lost control and slid into the median.

Head on collision Agriculture Farm/Ranch April 22 Malheur OR-2012-39-1	A 76-year-old rancher was killed in a collision while driving a pickup truck pulling an empty livestock trailer. The pickup was traveling up a hill around a curve. An SUV traveling down the hill struck the pickup head on. The victim was found with his seat belt on trapped behind the steering wheel and had to be extracted. He sustained blunt force chest trauma and was pronounced dead at the scene. There were no witnesses.
Motor vehicle accident Forestry/Logging Forestry July 23, 2012 Jackson OR-2012-40-1	A 23-year-old member of a logging crew was a passenger in a van heading to a worksite. At approximately 3:40 am the van was struck on the passenger side by a pickup truck that entered the intersection against a red light. Three van occupants, including the victim, were not wearing seatbelts and were ejected. They were transported to the hospital where the victim was pronounced deceased at 4:18 am. The other two ejected passengers survived. Both vehicles were inspected and found to have been in a safe operating condition prior to the incident.

Transportation (Mobile Machinery)

Road compactor overturned Construction Construction September 12 Tillamook OR-2012-16-1	A 73-year-old road compactor operator was killed when his compactor rolled over. On the day of the incident the victim was reconstructing logging roads. He was moving his compactor to another area when he lost control and rolled down a 10-12 degree grade on a single tract road. He was found under the compactor with his head partially compressed by the muffler. The compactor manufacturer stated that a seat belt was optional on that model compactor and no seat belt was observed. The cab guard was not a certified Rollover Protection System (ROPS).
Tractor rollover Agriculture Farm/Ranch August 2 Yamhill OR-2012-23-1	An 80-year-old dairy farmer was operating a tractor when it rolled over trapping him. He sustained serious chest injuries and was taken to the hospital where he was treated and recuperated for four days. Three days after his release, he was working on the farm. When he did not return for a period of time, his employees searched for him and found his body face down in a puddle of water. The medical examiner reported that the death was directly related to the crushing injury he suffered the week prior to his death.
ATV overturned Agriculture Farm/Ranch August 7 Klamath OR-2012-31-1	A 43-year-old ranch hand working on an irrigation system was reported missing and was found a day later face down near his overturned ATV. The skid marks found at the scene suggested that he lost control of the ATV. Toxicology results reported his blood alcohol level at 0.2% (above the legal limit of 0.08%).

Transportation (Water)

Capsized boat Fishing Fishing March 9 Curry OR-2012-9-2	A 38-year-old commercial fisherman was killed when his fishing boat capsized. The 21-foot boat capsized in high waves after an engine failure. Witnesses called for help and reported that there were two men on the boat. Initial responders were not able to locate the men. The search was suspended due to hazardous conditions. The boat was secured after it washed ashore approximately 10 hours later. The motor outdrive (exposed propeller) was bound with rope and believed to have caused the motor to lose power. One of the two victim's bodies, was found onshore 5 days later. No use of personal flotation devices was described in the reports.
Crewmember fell overboard Accommodation/Food Service Food Prep & Related August 7 Columbia OR-2012-19-1	A 35-year-old galley steward fell overboard the sternwheeler he was working on. The vessel was moored on the Columbia River. Witnesses saw him surface once but after a six-hour search he could not be found. Five days later his body was found floating face down in the river. No reference to personal flotation device was made in any of the reports.
Mechanic fell overboard and struck by propeller Retail trade Repair September 21 Lincoln OR-2012-24-1	After repairing a boat, a 69-year-old marine mechanic was conducting a test drive when he fell overboard and was struck by the propeller. Witnesses reported that they saw the boat leave the dock, and then as it returned the mechanic was seen creating maneuvers, "spinning cookies." They stated that after the boat lurched out of the water in one of the turns they no longer saw the mechanic at the helm. They heard a cry for help and saw him in the water with the boat hitting him. All witnesses stated that they did not see a personal flotation device on the mechanic. No mechanical issues with the boat were reported by investigators.
Commercial fishing boat capsizes Fishing Fishing July 3 Lincoln OR-2012-44-1	A 52-year-old fisherman was drowned while working on a 42-foot commercial fishing vessel. Reports indicate that the vessel began sinking around 4:30 am approximately two miles from shore. Crewmen told the Coast Guard that the vessel quickly capsized and the crew did not have time to get into their survival suits. Three of the four-man crew were rescued. Search for the victim, continued until it was determined that survival was not likely without a survival suit.

Transportation (Air)

Plane crash Education Services Education/Training March 14 Columbia OR-2012-11-1	A 47-year-old flight instructor died of blunt force head and chest injuries when his plane crashed. His 17-year old student pilot died of blunt force head trauma. Search began when the flight was reported overdue by the airplane owner. The plane wreckage was discovered in a steep nose-down attitude in a level grassy field. A missing wing section was found where it impacted a tall conifer tree 200 yards from the wreckage. It is believed that the weather may have been a factor. On the day of the crash, in the area where the wreckage was found, thick fog with steady rain was reported limiting visibility to ¼ mile. .
Plane crash Arts/Entertainment/ Recreation Transportation June 23 Lane OR-2012-21-1	A 41-year-old commercial airplane pilot died of blunt force chest trauma when a light plane he was piloting collided with trees and terrain during takeoff. The airplane was leased by the pilot's employer who allowed the pilot to operate the plane for scenic tours. The purpose of the fatal incident was to provide scenic air tours for three of the pilot's co-workers. Neither the weather nor mechanical problems were believed to be factors in the crash. Preliminary toxicological examination indicated the presence of cannabinoids.
Plane crash Education Services Education/Training April 23 Deschutes OR-2012-29-1	A 52-year-old flight instructor died when a high performance experimental aircraft crashed. The victim was an instructor pilot for kit planes who delivered them to pilots and provided instruction. The accident flight was with an aircraft owner/pilot. According to initial radar data, the pilot had been maneuvering at about 10,500 feet mean sea level. The airplane then entered into a level right turn and about the time that it had completed a full 360 degrees of turn, it began to climb. The airplane climbed to about 11,700 feet as its airspeed slowed from about 270 mph to 130 mph. Within a few seconds after it reached the 11,700 feet, the airplane descended near vertically into the terrain.

Contact with objects and equipment

Crushed by truck trailer Transportation Install/Maintain/Repair January 5 Multnomah OR-2012-2-1	A 65-year-old truck mechanic was crushed and died while diagnosing a problem underneath a dump truck trailer. The victim and his supervisor had discussed a brake system leak on one of two dump truck trailers that was reported by a truck driver. They decided that the truck with the trailers should be moved to a more suitable location for inspection. While the supervisor was driving the truck trailer from the parking area to the shop he was flagged by another truck driver. He stopped the truck he was operating, left the truck idling, got out and walked to the other driver and engaged in a conversation with him for several minutes. The supervisor then returned to the truck and drove it to a service location, not realizing that the mechanic was underneath the trailer.

Worker Fatalities – Contact

Struck by falling tree limb Forestry/Logging Logging January 6 Columbia OR-2012-3-1	A 44-year-old logger was killed while working alongside his employer who was falling a maple tree. The victim was standing next to the Maple tree and as the tree was going over, a large dead Maple limb that was hung-up in the top of the tree, struck the victim in the head. The employer cut and logged small farmer patches and had hired the victim on and off for ten years.
Crushed by pipe Construction Construction January 6 Umatilla OR-2012-8-1	A 31-year-old electrical mechanic in training died when he was struck by a falling PVC pipe. The mechanic was called to troubleshoot an electrical problem on a production line where PVC pipes were processed and stacked. The malfunction may have allowed PVC pipes to be stacked beyond the constraints of the rack's retaining pin. While examining/diagnosing the problem, a 390-pound pipe dropped from a malfunctioning lift hitting the mechanic in the neck and head.
Struck by logs Forestry/Logging Logging May 9 Douglas OR-2012-13-1	A 26-year-old logging chokesetter was killed when he was struck by a log. On the morning of the incident, he was working with a brand new rigging slinger who had been moved to that position that day. The victim and the new rigging slinger set chokers on a log and then started retreating to an area uphill. Before the victim was in the clear, the rigging slinger gave the go ahead signal to the yarder operator. One end of the log unexpectedly swung forward and struck the victim in the chest and head
Struck by logs Forestry/Logging Logging June 15 Coos OR-2012-14-1	A 30-year-old logger was killed when a log broke from the choke and struck him in the chest. The victim was the rigging slinger and had the radio signal control of the carriage. He sent the signal to the carriage to pick up the drop line before he and others were in the clear, and the yarder was signaled to move the carriage ahead. As the logs began to move, one of the choked logs broke, flew, and struck the victim in the chest.
Caught in lathe Manufacturing Production October 4 Washington OR-2012-18-1	A 69-year-old journeyman machinist with over 30 years of experience was killed while operating an engine lathe. The victim reached over the rotating part, which was an eccentric shaft, to smooth out the radius using emery cloth and a file. His loose clothing (left arm sleeve) became entagled pulling him to the part. The victim suffered multiple fractures to the left arm and injuries to the neck and chest as he was struck repeatedly by the part.

Violence

Self-inflicted gunshot Utilities Production January 3 Klamath OR-2012-1-1	A 49-year-old control room operator died of a self-inflicted gunshot wound. The victim left the main control room to make his normal rounds checking machines. Two hours later, the second operator made several attempts to contact the victim using the company radios, PA system and cell phone. After there was no response from the victim, the second operator searched the facility and found the victim in the yard with a gunshot wound to the head. The victim's co-workers had not detected any signs of depression nor did they hear the victim express any suicidal thoughts.
Restaurant host homicide Accommodation/Food Service Protective Services February 19 Multnomah OR-2012-6-1	A 30-year-old restaurant/lounge host was shot and killed while responding to a disturbance outside his employer's establishment. As the host verbally interacted with the individuals causing the disturbance, an unknown assailant came around a corner and fired several gun shots towards the group hitting the victim in the torso. The victim died at the scene.
Stabbed by client Healthcare/Social Assistance Community/Social Services May 20 Columbia OR-2012-12-1	A 39-year-old mental health specialist was stabbed and killed by her client. The client had been found guilty of attempted murder and placed under jurisdiction of the Psychiatric Security Review Board (PSRB). After stabilization and monitoring by PSRB the client was released to reside in a resident treatment facility. He was being titrated off the mental health medication to undergo treatment for a separate medical condition. Upon entering a duplex apartment supervised by her employer to administer the client's medication, the victim was stabbed several times in the neck and chest by the client.
Suicide by Hanging Real Estate/Rental/Leasing Sales & Related February 3 Douglas OR-2012-20-1	A 21-year-old equipment rental company employee committed suicide at the company's garage/storage building. On the morning of the incident at approximately 11:50 am, a customer arrived at the rental facility. Soon thereafter he was joined by another customer and they both waited for assistance. Not wanting to wait any longer, the customer who arrived first went searching for help in the back of the facility where he found the victim hanging from a rafter. The deceased had been a person of interest in a legal case.

Worker Fatalities – Violence

Taxicab driver homicide Transportation Transportation October 21 Jackson OR-2012-32-1	A 58-year-old taxicab driver died of a gunshot wound while he was on duty. The last company contact with the victim was at 10:40 pm when he notified a dispatcher that he had picked up a fare. After several attempts to reach the driver by radio and telephone, the police were notified at approximately 1:00 am that he was missing. After several hours of searching by the police, family and other drivers, the police found his vehicle suggesting a criminal assault. A few hours later his body was found in a field with a gunshot wound to the head. Police ruled the death a homicide.
Hotel Homicide Accommodation/Food Service Building/Grounds Maintenance August 14 Umatilla OR-2012-33-1	A 19-year-old motel housekeeper was found dead with multiple stab wounds in a motel room where she was employed. On the victim's 5th day at work, in the late afternoon, her co-workers noticed that she had not completed cleaning her assigned rooms. One of her co-workers went looking for her to provide assistance, and found the victim lying in a bathtub. The medical examiner concluded that the victim died as a result of homicidal violence including multiple stab wounds and strangulation.
Accidental Hanging Other Services Building/Grounds Maintenance December 8 Lane OR-2012-36-1	A 31-year-old commercial laundry janitor died after he hung himself at his place of work. The victim's fiancé was scheduled to pick him up from work at 11:30 pm. She called his cell phone and knocked on the door but there was no response. She then contacted the victim's co-worker for assistance. The co-worker returned to the workplace, searched for the victim, and found him in the boiler room with a bandanna and laundry bag drawstring around his neck suspended from a metal grate. The medical examiner cause of death was ligature hanging autoerotic asphyxia.
Suicide by Hanging Wholesale trade Install/Maintain/Repair November 21 Coos OR-2012-42-1	A 52-year-old maintenance employee died when he hung himself with a chain attached to a forklift at his place of employment. He was off duty but was at his place of work talking to employees on duty. They indicated he smelled of alcohol and was upset about a break-up with a girlfriend. The on-duty employees left the maintenance shop and on their return found the decedent hanging from a large link chain that was attached to the forklift. It appeared that he placed the chain around his neck securing it with a snap hook then used the automatic lift control to raise himself up off the ground.
Self-inflicted gunshot Public Administration Protective Services March 16 Clackamas OR-2012-45-1	A 46-year-old police lieutenant died from a self-inflicted gunshot wound to his head while at his home. He had a two-year history of anxiety and depression and was on family and medical leave. His medical leave was about to expire and his request to extend the leave had been denied. It was reported that he had been increasingly depressed and despondent for approximately one year prior to his death and had been seeing a psychologist. Records indicated that the victim's depression increased notably approximately three months prior to his death and he was exhibiting isolative behavior and articulating suicidal ideations.

Mall shooting Arts/entertainment/rec Sales & Related December 11 Clackamas OR-2012-46-1	A 45-year-old kiosk owner died of a gunshot wound during a public shooting in a mall. The victim was shot while he was tending to his kiosk and died at the scene.

Falls

Fell lifting sculpture Wholesale Trade Production July 22 Klamath OR-2012-22-1	A 70-year-old wood carver died when he fell off a stump and hit his head. The wood carver was delivering a wooden sculpture and was having difficulty moving the sculpture out of the back of his pickup onto a stump where the owner wanted the sculture placed. After the facility owner told him that he would get help, the victim proceeded to move the sculpture while seated on the stump. The victim fell over backwards off the stump hitting his head on a large boulder below, at the base of the stump. According to the victim's spouse, the victim had been having bouts of dizziness and fainting spells.
Drowning Education Service Personal care/services July 9 Wasco OR-2012-25-1	A 26-year-old youth counselor at a community church summer camp drowned after slipping and falling 30 feet into a water pool below. A young camper who was with the counselor also drowned. A witness reported that the counselor and a camper were walking around the rim of a pool to reach the area behind a waterfall. They both slipped and slid into the pool below. Another witness threw a rope at the victims but they were unable to reach it. Two more witnesses attempted a rescue and entered the pool but neither of the victims was able to hang on before the rescuers had to return to shore. A diver recovered the victims' bodies the following afternoon.
Ladder Fall Construction Construction February 13 Jackson OR-2012-4-1	A 59-year-old electrical contractor fell as he stepped off a roof onto a step ladder sustained a head injury. The victim used a 12-foot step ladder to access/egress the roof. The step ladder was not tied off and did not have adequate length/height to provide 36 inches of grasping rail nor was there a structure or grab rail device to provide adequate grasping when stepping off/onto the ladder. It was believed that the victim was attempting to step off the roof, failed to make adequate contact with the steps of the ladder and fell approximately 10 feet to the concrete sidewalk. The victim underwent surgery and treatment for blunt head trauma and died 16 days later.

Worker Fatalities – Falls

Ladder fall Construction Construction October 25 Washington OR-2012-26-1	A 55-year-old self-employed construction worker died when his ladder slipped and he fell hitting his head on the concrete surface below. The victim and his sole employee were each on a 21-foot extension ladder approximately 16 feet high trying to level a 20-foot board "belly band," (a siding board) near the top portion of a two-level house. It is believed that the angle of the ladder was too steep, and while the victim was installing a wood screw his ladder began to slip which caused him to fa ll.
Logging fall Forestry/Logging Logging February 18, 1970 Yamhill OR-2012-30-1	A 65-year-old logger died from paralysis complications as a result of an injury suffered in 1970. The injury occurred during a logging incident when he fell and fractured his back that resulted in paralysis of both legs. He later became an electrician and mechanic. In 2004 he underwent a below-the-knee amputation and was also diagnosed with other paralysis complications. The victim slowly declined in health and remained at home for the last several years of his life.
Ladder fall Construction Construction October 30 Lane OR-2012-34-1	A 59-year-old construction worker died when he fell from a ladder and hit his head. He was working overhead on a four-foot ladder installing trim around a skylight opening. Co-workers heard a crashing sound, found the victim unconscious and called EMS. There was a wood stove and brick hearth nearby. It is unknown whether the victim struck either or both of these items, but EMS noted that they found no evidence of hitting the stove or hearth, with the possible exception of a small tear in the plastic on the hearth. There was a laceration on the right-side of the victim's head. Head CT showed a large subdural hematoma, large midline shift and multiple skull fractures. The worker remained unresponsive and died three days later when the ventilator was removed. The medical examiner declared that the cause of death was blunt force head trauma due to fall from height.
Fall from chair Other Services Office/Admin Support February 6 Multnomah OR-2012-41-1	A 63-year-old workshop employee died from hip fracture complications. The victim, who was developmentally disabled, slipped out of his chair, fell to the floor while at his bi-weekly work program. The incident was believed to have been caused by a hypoglycemic event. He did not appear to have sustained any significant injury at the time of his fall and he continued to work throughout the day. That evening, the caretaker became concerned and took him to an emergency room. A pelvic CT scan revealed a fracture of his left femoral neck. He underwent surgery and was discharged to a rehabilitation center where he died the following morning, which was five days after the incident.

Overexertion

Knee injury complication Retail trade Sales & Related May 18 Josephine OR-2012-17-1	A 38-year-old tire sales/service employee died from massive pulmonary thromboembolism caused by a knee injury believed to have occurred at work. The victim had reported to management three weeks prior to his death that there was pain in his right knee from repeated bending and kneeling activities the previous day. Based on the employee's statement, the employer assumed it was a result of normal strain/sprain. The victim had scheduled vacation and when he returned seven days later, he filed a workers compensation claim and was treated at an immediate care clinic. The knee was drained to reduce swelling and he was released to work four hours per day until his next visit scheduled for a week later. At his second medical visit his restricted hours were extended. Two days later the employee complained of breathing difficulty. He lost consciousness at home and he was rushed to the emergency room where he died. The medical examiner reported that the victim died of massive pulmonary thromboembolism as a result of right deep leg vein thrombosis from the knee injury.
Heart attack Healthcare/Social Assistance Protective Services April 11 Marion OR-2012-37-1	A 36-year-old mental health security technician was actively restraining a disorderly patient when he collapsed on top of the patient and died. Emergency medical service arrived on the scene and made several attempts to revive the victim. When the victim arrived at the hospital he was without any heart activity and pronounced dead. The medical examiner declared that the cause of death was atherosclerotic heart disease.
Back injury complication Finance/Insurance Office/ Administrative Support Unknown Clackamas OR-2012-43-1	A 20-year-old office worker died from complications of a back injury and the resulting immobilization. The injury was believed to have occurred five months prior to her death while she was bending over and reaching down to a lower cabinet drawer at her office. The victim was on several medications. She began experiencing shortness of breath and collapsed at home. The victim's roommate initiated CPR until EMS arrived. She could not be revived and the medical examiner declared that cause of death was complications of back injury and immobilization (pulmonary thromboembolism).

Exposure to Harmful Substance or Environment

Caustic fluid exposure Transportation Architect/Engineer February 19 Multnomah OR-2012-5-1	A 57-year-old port engineer was found in the bottom of a barge holding tank containing lignin. Although not known, the victim may been overcome by fumes or fell into the tank while collecting a sample to conduct tests. A co-worker on an adjacent barge observed the victim standing near a holding tank. Ten minutes later he did not see him anywhere on the barge. He found the hatch open to the tank near where the victim was last seen. Emergency response found the victim at the bottom of the holding tank along with a five-gallon metal bucket used to collect samples for testing.

Event Definitions

The event or exposure describes the manner in which the injury or illness was produced or inflicted by the source of injury or illness.

CONTACT WITH OBJECTS AND EQUIPMENT
Codes apply to injuries produced by contact between the injured person and the source of injury except when contact was due to falls, transportation accidents, fires, explosions, assaults, or violent acts. Contact may be denoted by a statement that the injured person struck or was struck by an object, was caught in an object, rubbed against an object, or by words such as “hit by,” or “hit,” “bumped into,” “crushed by,” or “banged.”

FALLS
Falls are events in which the injury was produced by impact between the injured person and the source of injury when the motion producing contact was generated by gravity.

BODILY REACTION AND EXERTION
Codes apply to cases, usually non-impact, in which injury or illness resulted from free bodily motion, from excessive physical effort, from repetition of a bodily motion, from the assumption of an unnatural position, or from remaining in the same position over a period of time.

EXPOSURE TO HARMFUL SUBSTANCES OR ENVIRONMENTS
Codes apply to cases in which the injury or illness resulted from contact with, or exposure to, a condition or substance in the environment. Cases of burns, heat stress, smoke inhalation, or oxygen deficiency resulting from an uncontrolled or unintentional fire are generally coded Fire and Explosions, unless a transportation incident or assault or violent act was involved.

TRANSPORTATION ACCIDENTS
This code covers events involving transportation vehicles, powered industrial vehicles, or powered mobile industrial equipment in which at least one vehicle (or mobile equipment) is in normal operation and the injury/illness was due to collision or other type of traffic accident, loss of control, or a sudden stop, start, or jolting of a vehicle regardless of the location where the event occurred. References to “vehicles” in should be interpreted to include powered industrial vehicles and powered mobile industrial equipment unless otherwise noted. Cases classified in this code include pedestrians, roadway workers, or other non-passengers struck by vehicles, powered industrial equipment on or off the roadway (including indoor locations) when the accident meets these criteria (a) at least one vehicle was in regular operation, and (b) the impact was caused by a traffic accident or forward/backward travel of the vehicle.

FIRES AND EXPLOSIONS
Codes apply to cases in which the injury or illness resulted from an explosion or fire. Included are cases in which the person fell or jumped from a burning building, inhaled a harmful substance, or was struck by or struck against an object as a result of an explosion or fire. This division also includes incidents in which the worker was injured due to being trapped in a fire or whose respirator had run out of oxygen during a fire. Excluded from this category are injuries to firefighters resulting from lifting fire hoses and falls not related to the fire or explosion itself, such as falls in the parking lot of a burning building.

ASSAULTS AND VIOLENT ACTS
Assaults and Violent Acts include cases in which a person was injured or made ill by intentional assaults or by violent, harmful actions of unknown intent. Included in this division are assaults by others, injuries to oneself, and assaults by animals. This category includes injuries occurring in a hostile environment even though the person injured was not the intended victim, such as a teacher hit while breaking up a fight.

OTHER EVENTS OR EXPOSURES
This division classifies any event or exposure, which is not classified or listed under any other division.

Adapted from US Bureau of Labor Statistics (2012), *Occupational Injury and Illness Classification Manual*. US Department of Labor. Available online (December 28, 2012): http://www.bls.gov/iif/osh_oiics_2_4.pdf.

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OR-FACE conducts surveillance, investigation, and assessment of traumatic occupational fatalities in Oregon, and produces safety materials to promote worker safety. OR-FACE investigations of fatal occupational incidents assess risk factors that include the working environment, the worker, activity, tools, energy exchange, and role of management.

About the Oregon Institute of Occupational Health Sciences at Oregon Health & Science University

The Oregon Institute of Occupational Health Sciences is dedicated to health and safety in the workforce. The Insitute's mission is to promote health, and prevent disease and disability among working Oregonians and their families during their employment years and through retirement. The Institute does so through basic and applied research, outreach, and education.

Oregon Health & Science University is dedicated to improving the health and quality of life for all Oregonians through excellence, innovation and leadership in health care, education and research. OHSU includes the schools of Dentistry, Medicine, Nursing, and Science & Engineering; OHSU Hospital; Doernbecher Children's Hospital; numerous primary care and specialty clinics, multiple research institutes; and several outreach and community service units. OHSU is an equal opportunity, affirmative action institution.

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