

WorkSafe

Tools for building safer workplaces | worksafemagazine.com | January / February 2019



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out of roller coaster
manufacturing p7

New study looks at role
of prolonged standing
on foot pain p12

Firefighters share tips on
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What's wrong with this photo?

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What was wrong

Answer key and winner of the last “What's wrong with this photo?” contest.

Injury prevention lowers claim costs

Your insurance rates are based partly on your experience rating, which takes your health and safety record and compares it with that of others in your industry. You can improve your rating, and reduce your insurance costs, by preventing injuries and helping injured workers return to work.

Our cover story shows the success of a manufacturer who took this to heart. The company went from having to pay 7 percent of its payroll in insurance premiums to now only paying 1.17 percent. If a worker does get injured, the company is focused on making sure that worker stays connected to the workforce: the company hasn't had a lost-time injury in nearly five years (page 7).

That story is one of many in this issue, in which employers and workers are taking up the mantle of health and safety at work. We speak with a craft brewer that is preventing serious injury with the simple act of swapping in the right ladder (page 15). We talk to firefighters in B.C. who are committed to preventing secondary exposures to carcinogens by decontaminating their gear (page 17). And, we talk to a crane provider that's working with engineers to guarantee machine inspections are done right the first time (page 20).

These are just some of the ways that employers across the province are helping to prevent injuries, and keep people healthy and safe. Saving on insurance makes a good situation even better.



Terence Little
Editor-in-chief

WorkSafe

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WORKSAFE BC



Sarah Ripplinger

Sarah has a passion for storytelling that turns heads, excites, and inspires. When she's not typing away or in a meeting, you might see her on a bike, at the beach, or off in the mountains somewhere. She's the writer of our cover story on an amusement park ride manufacturer (page 7).



Gord Woodward

Gord is a long-time writer for *WorkSafe Magazine*. He has experience working with federal and provincial agencies, non-profit organizations, and private-sector firms. In this issue he speaks with firefighters on cancer prevention (page 17).



Gail Johnson

Gail has been working as a journalist since 1996. She understands being run off her feet, so interviewing a scientist about insoles to measure foot fatigue was a natural fit (page 12).



Marnie Douglas

Marnie has a passion for talking to and writing about people to find out what makes them unique. In this issue she talks to B.C. craft breweries about the unique hazards of working at height in a brewery (page 15).

Safe asbestos abatement requires planning and oversight



Troy Davies

Occupational safety officer

Specialty team: Asbestos team in Port Moody

Years on the job: 6

Asbestos-related lung diseases are preventable, yet asbestos remains the leading cause of work-related deaths in B.C. The good news is that with proper planning and oversight of work, employers in the residential demolition and renovation industry can reduce or eliminate the risk of worker exposure to asbestos fibres. This month, we answer some questions abatement contractors have had about how to meet regulation and create a safe workspace when working with hazardous materials.

Q. What is a hazardous materials inspection report and why do I need it?

A. Employers sometimes start the abatement work with only the lab results of tested materials. That's not enough information to keep workers safe. You need to get a full picture of the hazardous materials at your worksite. A qualified person needs to inspect the worksite for all hazardous materials — not just asbestos-containing materials (ACMs). The person will then collect representative samples of the suspect materials and prepare a written hazardous materials inspection report.

This report identifies whether a material is hazardous, where that material can be found, provides an estimate of the amount of that material, and includes the laboratory results.

Q. I have my hazardous materials report, what's next? Can I get started?

A. You have the hazardous materials inspection report. You should plan the work, work the plan, inspect, and correct. Breathing in asbestos fibres is the primary route of exposure to asbestos. When working with ACMs, your goal is to prevent or minimize the release of airborne asbestos fibres and the spread of ACMs at the worksite.

As part of selecting the proper control measures, the risk assessment looks at how asbestos fibres can become airborne during the asbestos

work by asking questions about the ACM itself, how the ACM will be removed, and other hazards that can affect its removal.

Planning can begin as early as the bid process, when the abatement contractor visits the worksite to estimate the work involved and confirm the information in the hazardous materials inspection report. At this time, you can check for power and water supply, placement of the waste disposal bin, decontamination facility, and negative air unit, and other hazards like worksite access/egress or even workplace violence.

Q. What do workers involved in asbestos abatement work need to know?

- A. Some of the asbestos-related topics that must be included in the worker's instruction and training include the hazards of asbestos, how ACMs are identified, the work procedures to be followed, how to correctly operate required engineering controls, and the correct use of personal protective equipment. An outcome of effective training is workers who can demonstrate they can perform work tasks safely.

Supervisors may require extensive training to fulfill their responsibilities. Your supervisor should observe and verify that workers are following safe work procedures inside and outside of the containment. The supervisor should correct unsafe behaviour, provide direction, and answer questions.

An asbestos abatement project has many moving parts where conditions can change in a short period of time. To stay ahead of developing unsafe working conditions, inspect for and correct deficiencies immediately. This includes reviewing the effectiveness of control measures, work methods, and work practices.

Q. What are some examples of when a stop-work order was given at a worksite?

- A. Here are some examples of when a stop-work order may be issued:

- The employer allowed workers to disturb asbestos-containing materials without necessary precautions to protect workers.
- Asbestos-containing materials identified in the hazardous-materials were not safely removed.
- An inspection for hazardous materials had not been conducted before demolition or renovation work began.

Q. Where can I find more information?

- A. If you have questions about asbestos abatement, please call the Prevention Information Line at 604.276.3100. Our website also has a number of resources that can help you. Search for "Asbestos awareness for contractors" on worksafebc.com to find these resources and more:

- The [Safe Work Practices for Handling Asbestos](#) booklet
- Guideline 6.8: [Procedures for abatement of asbestos materials during house and building demolition/renovation](#)
- The [Ten simple steps to complying with asbestos abatement](#) booklet

Looking for answers to your specific health and safety questions? Send them to us at worksafemagazine@worksafebc.com, and we'll consider them for our next "Ask an officer" feature. ☺

The image is a promotional graphic for UBSafe. It features a dark background with a yellow rectangular box on the left containing text. To the right of the box is the UBSafe logo in red and yellow, followed by more text and contact information. The text in the yellow box reads: "Penalties, claim costs and downtime can be disruptive and costly for your business – contact us for a free consultation". The text to the right of the logo reads: "Your safeguarding experts – from start to completion", "safety@ubsafe.ca", "www.ubsafe.ca", and "778.847.4047".

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On the cover

Dean Murphy, VP of corporate safety at Dynamic Attractions, shows Paul Bergin, WorkSafeBC occupational safety officer, part of the Tilt & Drop roller coaster the company is currently constructing.

Taking the risk out of roller coaster manufacturing

By Sarah Ripplinger

When minor workplace injuries were adding up to lost work-time and increased premiums, Dynamic Attractions knew it was time to make a change. Today, the company hasn't had a lost-time injury in nearly five years.

When Dean Murphy first joined Dynamic Attractions, the company was eager to improve its safety record. Formerly called Dynamic Structures, it designs, manufactures, and installs roller coasters and other attractions around the world.

While the company's attractions have always been popular, back in 2005, behind-the-scenes excess costs were adding up.

"It could cost five times a worker's salary to replace them if they get injured," says WorkSafeBC occupational safety officer Paul Bergin. "Employers also lose an integral part of their workforce."

In 2005, Dynamic's workplace safety record was costing the business just over seven percent of its payroll in insurance premiums. Insurance premiums are calculated based on a company's experience rating, which takes into consideration its claim costs for the past three years, the size of the business, and how it compares to other businesses in the same industry.

"Not only were we paying a lot in premiums, I knew we could do better to protect our workers by taking additional steps to prevent injuries," explains vice-president of corporate safety, Dean Murphy, who works out of Dynamic's Port Coquitlam location.

High stakes for safety

At Dynamic, there is no shortage of potential hazards that need to be kept in check.

"The combination of manufacturing and construction activities in our plants requires that our employees be familiar with numerous types of hazards and their control methods," explains Sasan Tahvili, safety coordinator at the Port Coquitlam location.

Work for the company can involve materials handling, mobile equipment, welding, grinding, power tools, and electrical equipment. Workers need to be protected from everyday hazards, such as slips and trips, and also be trained in protecting themselves from hazardous materials or exposures, such as welding fumes.

"We also have a range of education and experience levels among our British Columbia team of around 100 fabricators, welders, ironworkers, and millwrights, along with 240 designers, draftspersons, engineers, and support personnel."

Getting safety on the right track

In 2005, the company was part of WorkSafeBC's Focus Firms Program — a program designed to reduce workplace injuries and improve health and safety infrastructure.

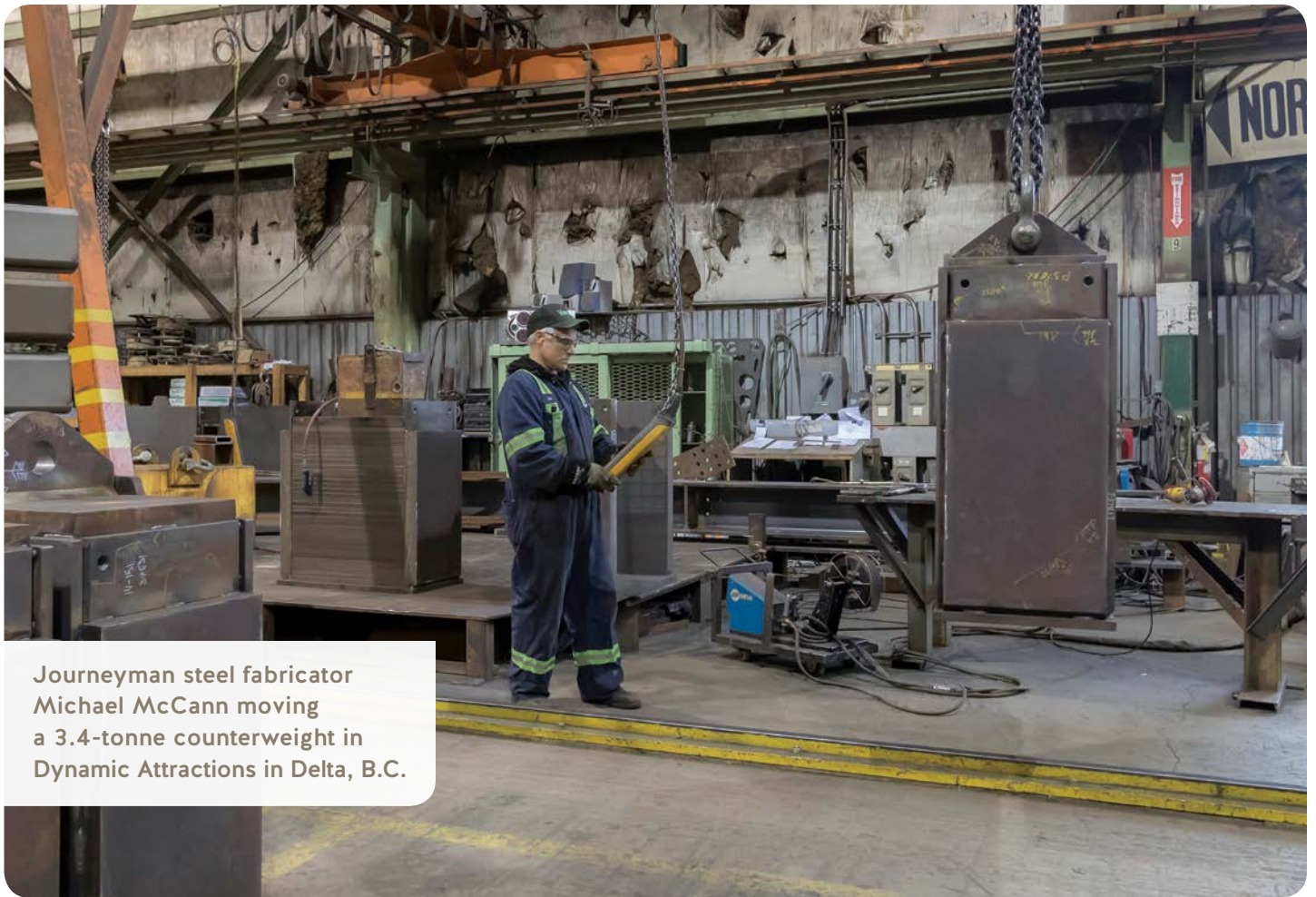
Along with aligning the company's health and safety program with the *Workers Compensation Act*, Dynamic revamped the orientation package for new hires and added a WHMIS training program on handling hazardous products to the onboarding process. Workers now complete a physical-demands analysis with a registered kinesiology technician at the time of hiring to establish a baseline of their physical abilities and limitations.

Dynamic makes sure that workers are informed of what to do should a safety incident occur. All workers sign a return-to-work agreement so that they know to report any and all injuries immediately, and how to work with the safety department on return-to-work opportunities. The return-to-work program accommodates injured workers wherever possible, so that they can stay active and productive at work while they recover. This is not just good business; recovering at work can help a person's health and well-being too.

An eye for details

"Another extremely important long-term initiative that we implemented involves the delivery of weekly toolbox meetings with each shift every Monday," says Murphy. "This gives the safety department the opportunity to communicate hazards, provide safe work recommendations and training, and identify and mitigate safety-related issues with workers."

Management also keeps a close eye on the numbers. When Murphy noticed eye injuries were frequent, he investigated. The injuries were often a result of individuals who required prescription glasses not wearing protective eyewear. Murphy found a solution through the Occupational Vision Plan — now eyesafe — which provides prescription safety eyewear at cost. Since 2006, Dynamic has provided 291 pairs of prescription safety glasses to workers.



Journeyman steel fabricator Michael McCann moving a 3.4-tonne counterweight in Dynamic Attractions in Delta, B.C.

Now, because of its low workplace injury rates, Dynamic will receive a 48.5 percent discount on insurance premiums in 2019. Instead of 7 percent of its payroll going to insurance, Dynamic now only pays 1.17 percent.

Utilizing the joint committee

Having established a solid occupational health and safety (OHS) program and drastically reducing premiums, you might think Dynamic was done learning about health and safety. But when the company was given the chance to participate in WorkSafeBC's Program and Committee Evaluation (PACE) Initiative in 2018, Dynamic saw it as yet another opportunity to build on its safety program.

Through the PACE Initiative, a WorkSafeBC safety officer evaluates a workplace's OHS program and the effectiveness of its joint health and safety committee or representative. A joint committee brings together representatives from the employer and workers to identify and help resolve health and safety issues

in the workplace. Workplaces with between 9 and 20 workers have a worker health and safety representative instead of a committee.

In addition to evaluating the committee, the officer will also engage with the company's senior leadership to strengthen the OHS program and committee roles. In working with officer Paul Bergin, Dynamic did uncover some more low-risk safety gaps in legal requirements, which the company is working to address.

"Working with WorkSafeBC on initiatives like PACE gives us an opportunity to learn new ways to improve the safety of our operations," says Murphy. "No matter how good you think your safety program is, there is always room for improvement."

Leadership is key

As of December 2018, Dynamic has experienced almost five years without an employee missing work due to a workplace injury, which represents approximately 2 million hours on the job.



Dynamic Attractions' joint health and safety committee, from left to right: Sasan Tahvili, Dean Murphy, Rith Keo, Janet Pagobo, Ken Stroud, and Ken Anderson.

To get here, Murphy didn't just overhaul the health and safety program, he got buy-in from the company's senior management to make sure the changes stick.

Today, he says, "Dynamic Attractions' senior management recognizes that we needed to go above and beyond what is required in *Workers Compensation Act* regulations."

Jeryl Merryweather, a WorkSafeBC manager in Prevention Field Services, says there is a great deal of evidence that employers are more likely to decrease workplace incidents and injuries when there is buy-in from senior leadership:

"Leadership's commitment to OHS influences the workplace culture, and ensures that middle management and workers are also engaged in the development, implementation, and maintenance of managing safety."

Ideally, involvement from leaders would extend to joint committee meetings, adds Bergin. Their presence at

"Our workers know that their well-being in the workplace is just as important as the safety of the attractions they build."

—Dean Murphy,
Vice-president corporate safety,
Dynamic Attractions

committee meetings adds legitimacy to the committee's role. It also helps leadership stay informed about and involved in OHS policies and practices, along with any issues that may bubble to the surface.

"Safety is now ingrained in our workplace culture," Murphy affirms. "Our workers know that their well-being in the workplace is just as important as the safety of the attractions they build. This way, everyone can enjoy the rides."

How to make safety a priority

A few extra steps can go a long way when it comes to occupational health and safety (OHS) in the workplace. Here are some tips that might help:

- Develop and implement health and safety programs for each of the different departments in your workplace.
- Involve senior leadership in health and safety right from the beginning.
- Consider asking for insights from an association, or hiring consultants or a full-time safety employee to develop and implement OHS procedures.
- Make sure workers and supervisors are involved in your OHS program.
- Be open and honest when reviewing your OHS policies.
- Implement regular safety meetings, such as toolbox talks, where — for as little as five minutes — workers can learn about workplace health and safety topics and ask questions.
- Ensure that you have a functional joint health and safety committee or worker representative who meets the rules and responsibilities under the *Workers Compensation Act*. 🧑‍🔧



Plan ahead before using a ladder.

Falls are a leading cause of injury on B.C. construction sites.

Learn how to use ladders and scaffolding safely at worksafebc.com/construction

WORKSAFE BC

The Feet First project includes members of the B.C. Nurses Union — nurses are typically on their feet for long periods.

Study measures impact of prolonged standing on foot pain

By Gail Johnson

Researchers at Simon Fraser University aim to get to the bottom of where foot pain really comes from. In a new study funded by WorkSafeBC, the researchers have partnered with a custom orthotics company to create insoles that measure the weight-bearing behaviour of people at work.

Anyone who's ever experienced plantar fasciitis can attest to how debilitating the condition can be. It involves inflammation of a thick band of tissue called the plantar fascia, which connects the heel bone to the toes. A hallmark symptom is intense, stabbing pain along the bottom of the foot.

Prolonged standing at work is widely thought to be a risk factor for this kind of pedi-pain. Clear evidence to support a connection, however, hasn't been firmly

established. That's because there hasn't been an effective, objective tool to quantify how much time workers spend in weight-bearing postures.

New research supported by WorkSafeBC is filling that gap.

In a project called Feet First, researchers from Simon Fraser University (SFU) have collaborated with clinicians at Kintec, a Surrey-based footwear and custom orthotics company, to develop an innovative, "smart" insole system that can measure workers' weight-bearing behaviour. The thin insoles are embedded with activity sensors, allowing researchers to quantify activity type and duration.

"We know that foot pain occurs in jobs where people stand," says lead researcher Carolyn Sparrey, associate professor in SFU's School of Mechatronic Systems Engineering and principal investigator for the

International Collaboration on Repair Discoveries (ICORD). “We want to understand why people who stand at work have a higher proportion of foot pain, but no one has been able to quantify it or get statistically relevant data. We need to get a better understanding of how people load their feet and whether or not that influences their experiences of pain.”

The search for objective data

Currently, WorkSafeBC policy designates plantar fasciitis as an activity-related soft tissue disorder (ASTD). But as it’s not connected to any particular process or industry, work causation needs to be assessed on a case-by-case basis.

Most studies that propose a link between prolonged weight bearing and foot pain use self-reporting as a means of estimating weight-bearing exposure. Consequently, the accuracy and reliability of data have been questioned.

To get objective data about the association and incidence of prolonged weight bearing at work and plantar pain, the instrumented insoles directly measure time spent sitting, standing, and walking over a standard 12-hour workday. Workplace activities are differentiated by the novel insoles using a proprietary artificial intelligence algorithm.

Feet First study participants include members of the B.C. Nurses’ Union, who represent at-risk professions that typically involve prolonged weight bearing, and people who have more sedentary office jobs.

The workers wore the insoles for a week. In addition, they completed questionnaires and surveys about their foot pain and their activities, plus had a 30-minute calibration of the insoles to ensure accuracy.

The researchers, who include SFU students, are compiling data and expect to release findings soon.

“By far, the most common condition our clinicians see at Kintec is plantar fasciitis,” says co-investigator Michael Ryan, director of research and development at Kintec and an adjunct professor in SFU’s Department of Biomedical Physiology and Kinesiology.

“We often hear that it’s associated with standing for prolonged periods of time, but so far there hasn’t been sufficient evidence to suggest prolonged weight bearing places workers at a greater risk of developing foot pain. We’re excited to have developed a tool that can answer this question.”

“We need to get a better understanding of how people load their feet and whether or not that influences their experiences of pain.”

—Carolyn Sparrey, associate professor, Simon Fraser University School of Mechatronic Systems Engineering

The findings will lay groundwork for connecting postures and pain severity

What makes this research especially notable is its potential for far-reaching impact. If a relationship between prolonged weight bearing and plantar foot pain is identified, it will help determine the ideal postures to maintain at work to minimize the occurrence and severity of foot pain; workers could modify activities or change behaviours to mitigate their risk and exposure.

It will also lay the groundwork for a much larger study that would examine more deeply the specific impact of certain weight-bearing postures in the incidence and severity of plantar fasciitis.

The ultimate aim is to reduce foot pain in thousands of workers in at-risk industries, from construction to hospitality to retail.

Improving the health and well-being of workers

The study illustrates the kind of credible, research that WorkSafeBC supports, says Lori Guiton, director of WorkSafeBC’s Policy, Regulation and Research Division. The information can be translated to the real world by employers, workers, policy makers, health-care practitioners, and other experts.

“Carolyn’s study is a great example of scientific research that can be put to use in improving the health and well-being of workers,” says Guiton. “Plantar foot pain affects many people, and although it is quite common, how it develops isn’t well understood. Exploring whether there is a link between working

conditions and the onset of foot disorders will help us to better address it in the future.

“Our investment in research allows us to encourage the creation of new approaches to preventing and addressing workplace injury and illness, and respond to priorities in workers’ compensation,” she adds.

“We’re excited to move forward in ways that meet the needs of our organization, as well as those of our partners and collaborators. We encourage anyone with an interest in research to connect with us through worksafebc.com.”

For more information

The WorkSafeBC Research Services department funds research projects that provide insights and solutions for issues faced by workers and employers. You can sign up to receive automatic email notifications when new funding opportunities are posted on worksafebc.com. Keyword search: research opportunities. ☺



Participants in the study wore instrumented insoles to measure various pressure points on their feet.

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Trading Post Brewing uses a platform ladder when adding hops to the tanks. This allows a firm footing with three-point contact.

Beer maker adds three-point contact to the brew

By Marnie Douglas

While the craft brewing industry booms, local employers want to keep the injury rates from doing the same. These tips will help both employees and employers stay safe when working at heights.

Craft brewing is a hopping business in British Columbia — there are close to 160 craft breweries throughout the province and the industry continues to grow. But breweries and distilleries can be hazardous places to work. Among the potential hazards are electricity, packaging machines, lift trucks, cleaning chemicals, gases such as oxygen and CO₂, and heights.

Brewing tanks are typically three metres tall and hold some 3,000 litres or more, so workers and employers need to consider the risk of working at height when performing tank inspections and cleaning, and adding ingredients from the top of the tank. Falls from heights can result in serious injuries, including fractures, contusions, abrasions, and head and spinal injuries.

Jose Barranco, industry specialist in manufacturing and retail with WorkSafeBC, says many breweries are

now using a process called dry hopping — the act of adding hops to the fermentation process prior to bottling.

“This means climbing to the top of the tank and adding the hops to the brew. The safety hazard here is using a standard ladder to climb to the top of the tank and carrying a bucket. It’s a relatively new hazard and we’re working with brewers on finding solutions,” he explains.

Some are using hooks to attach ladders to the top of the tank but that doesn’t eliminate several safety issues, such as always maintaining three points of contact.

How do you avoid climbing stand-alone ladders?

One solution is to use platform ladders, says Tony Dewald, head brewer at Trading Post Brewing Company in Langley.

“It’s like a staircase on wheels,” he says. “We lock it into place in front of the tank and it’s sized specifically to the tank. Anyone is then able to safely inspect or

clean the tank or add more material like yeast or dry hops.”

Platform ladders are a safe alternative to traditional ladders in that they allow the user to maintain three points of contact while in use. If the user needs a bucket or anything at the top of the stairs, another employee will bring in a forklift so there’s no need to carry anything up the stairs.

“It does make working at heights much more safe and simple,” Dewald adds.

His 2,500-square-foot warehouse includes five fermenting tanks and two bright beer tanks (pressure-rated and temperature-controlled tanks that hold beer in preparation for packaging). After 29 years in the brewing industry, Dewald says he’s seen too many risky and unsafe situations and wanted to bring his knowledge of best practices to Trading Post.

“There are solutions; it’s a matter of putting them into place. We don’t want anyone to have to take any needless risks,” he says.

Tips for staying safe

The following are five tips to reduce the risks of working at heights inside a brewery:

- 1 Try to eliminate tasks involving height or modify them so workers can do them from below. If possible, add dry ingredients using pneumatic conveyance, recirculation systems, platform ladders, or scissor lifts. If workers still need to

climb to the top of tanks, they should use platform ladders or scissor lifts.

- 2 If possible, install protected work platforms, catwalks, and staircases, so no one has to climb a ladder. Platforms and catwalks should have guardrails and toeboards to prevent tools and materials from falling.
- 3 If the tank is more than 3 metres (10 ft.) tall, further restraint or fall arrest systems are needed. Make sure your workers are trained on how to use the fall protection system and its limitations.
- 4 If you must use a ladder, make sure it has the proper reach and weight capacity, and that it meets the standard required for the workplace. It should have slip-resistant feet and should be on a flat and even surface.
- 5 Don’t carry heavy or awkward objects up or down. When climbing, face the ladder and maintain three-point contact at all times (one foot and two hands on the ladder, or one hand and two feet).

For more information

WorkSafeBC published the [Health and Safety for Craft Breweries and Distilleries](#) guide in 2019. It contains health and safety information for the craft brewing and distilling industry to help identify and eliminate hazards. Find your free copy and more by searching for “craft breweries” on [worksafebc.com](https://www.worksafebc.com). ☺

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On-site decontamination can reduce firefighters' risk of cancer

By Gord Woodward

The health hazards for firefighters aren't extinguished when the flames go out.

Cancer has become the leading cause of death for firefighters across the country. A new study by the University of the Fraser Valley says they are two to three times more likely to die from cancer when compared with the general population — even though they tend to lead healthier lifestyles as a requirement of their work.

“It was shocking,” Surrey fire chief Len Garis says of the findings. “We had some notion of risk but not to this level.”

The culprits are concentrated carcinogens in the air, soot and tar released during structure fires and live training exercises. Repeated exposure to the contaminants through inhaling or skin contact increases the health risk.

The research found that cancer causes more than 86 percent of firefighter fatalities in Canada. “That

became a defining moment for me,” says Garis, who co-authored the study. “The likelihood of dying from cancer becomes extremely prevalent the longer you spend in this industry.”

Most time-loss claims for cancer are at ages 55 to 59. And most cancer deaths occurred over age 65. Four fatal claims were accepted in B.C. for firefighter-related exposure diseases in 2017, including one for an 88-year-old volunteer.

Assessment helps contain contamination

Decontamination of gear and equipment is one way to reduce exposure to the carcinogens. And decontamination becomes even more effective when it's started on site, rather than when crews get back to the fire hall.

“If you can see it or smell it, there's a chance you're bringing contaminants into your body,” says captain Bryan Erwin of Colwood Fire Rescue, a team of

8 career firefighters and 32 volunteers near Victoria. “We’re trying to eliminate them at the source.”

His department has developed several post-fire decontamination best practices that include:

On-site assessment

Firefighters keep on their self-contained breathing apparatus (SCBA) while they assess the contamination threat. If it is deemed low, they thoroughly scrub and rinse their gear and tools at the scene. Higher levels of contamination require firefighters to seal turnout gear in heavy-duty bags. “We use our medical gloves so guys aren’t grabbing their stuff with their bare hands,” says career firefighter Kyle Smith, who helped create the decontamination protocols.

Containing truck contamination

Bags with dirty gear go in the back of a utility vehicle, in the open air, for the trip to the hall. Crews don painter’s suits with booties and hoods when they climb into the firetruck, further reducing the risk of cross-contamination. “I haven’t been in a truck that smelled like a house fire for years,” Smith says.

Containing hall contamination

Turnout gear stays in the bays only; it’s not allowed in offices or washrooms.

Two washing machines are available, each with a specific purpose. One is for uniforms and other items that haven’t been used at fire scenes. The second machine is reserved for dirty turnout gear, which is stored in a back garage until wash day. Crews wear masks and gloves to load the machine. The second machine is regularly cleaned by running it empty, to flush away any built-up contaminants.

Showering after every incident

This recommendation is especially important for volunteers, who may want to head home directly after a call-out. “We encourage them to wash and clean here so they’re not bringing that stuff into their houses,” Smith says.

“If you can see it or smell it, there’s a chance you’re bringing contaminants into your body.”

—Captain Bryan Erwin, Colwood Fire Rescue

Awareness helps overcome attitude

Raising awareness of the need for decontamination is a matter of education and training, says Colwood fire chief John Cassidy. Attitude also factors in: “It’s really about changing the culture and mindset of firefighters.”

Long-time veterans often take pride in having dirty gear and a dirty helmet, he says. They see it as a sign of doing a good job. Pointing out the risks of that outdated thinking is the first step in putting it to rest.

Another step, says Surrey’s Garis, is to be proactive. His department promotes a healthy workplace, advising its crews on nutrition, exercise, fitness, and personal wellness. It also gives firefighters a letter they can take to their physicians, explaining the need for early cancer screening. Garis recommends firefighters start screening 10 years earlier than they ordinarily would.

There’s one other important step, adds Colwood’s Erwin: Having firefighters follow decontamination procedures whether they are suppressing a fire or investigating one.

“Fire inspectors are exposed to just as many contaminants,” he notes. His department mandates that inspectors wear SCBA rather than P100 masks, and Level B suits or coveralls depending on the type of fire and structure.

For more information

- The Fraser Valley University study can be found at cjr.ufv.ca by searching for “determinants of injury and death in Canadian firefighters.”
- [Section 5.82](#) of the Occupational Health and Safety Regulation outlines the employer’s responsibility to provide effective means of removing hazardous substances from a worker’s skin or clothing.
- [Section 5.1](#) of the OHS Regulation defines hazardous substances and how they are designated. ☺



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Safety on the agenda

Looking ahead to March and April, there are plenty of ways to improve health and safety all across Canada. Check out these conferences and events below.

CCOHS Forum

Canadian Centre for Occupational Health and Safety
March 5–6, 2019
Winnipeg, Manitoba
ccohs.ca/forum

Actsafes Event Safety Conference

Actsafes
March 7–8, 2019
Burnaby, B.C.
actsafesconference.ca

Harvest TechX

Improving safety and productivity in logging
March 12–14, 2019
Vancouver, B.C.
harvesttechx.events

COFI Convention

BC Council of Forest Industries
April 3–5, 2019
Vancouver, B.C.
cofi.org

Western Conference on Safety

Pacific Safety Center
April 8–9, 2019
Vancouver, B.C.
pacificsafetycenter.com 

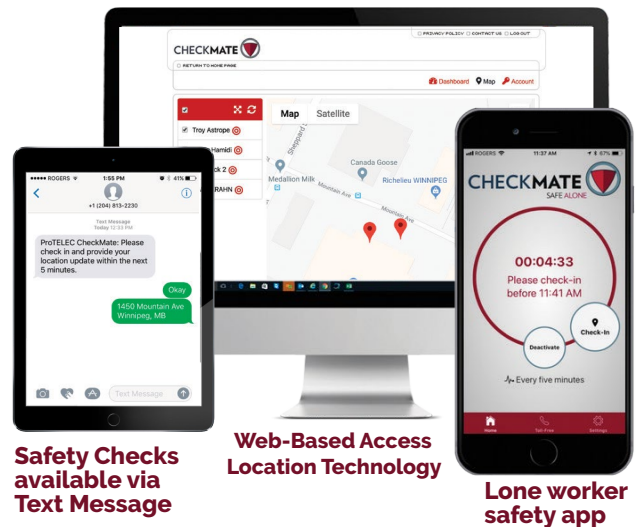
Please note: Information and links that appear in this section are provided as a resource. Listings do not necessarily constitute an endorsement from WorkSafeBC.

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Technicians Ryan Hobson and Travis Hobson on site at Falcon Equipment.

Preventing catastrophic equipment failure

By Jesse Marchand

Regular inspections and maintenance of mobile cranes and boom trucks are key to preventing injury, but how you inspect — and what you inspect — is more than half the battle.

Mobile cranes and boom trucks have the potential for catastrophic equipment failure and serious injury or death. That's why getting them inspected annually, correctly, is so important — it could save someone's life.

Inspecting your crane

If you own or operate a mobile crane or boom truck you must have all of the machine's critical components inspected annually, in accordance with the manufacturer's requirements and applicable standards, and certified as safe for use by a professional engineer.

"You must make sure that the structural, mechanical, and control components are included in the annual inspection process. If any part of the equipment is not inspected, it can put workers at unnecessary risk," says Doug Younger, a member of WorkSafeBC's provincial crane inspection team.

"We've seen serious incidents and a fatality — when a load collapsed due to mechanical crane failure on a boom truck."

In January 2018, WorkSafeBC launched its 2018–20 Crane Initiative, which conducts targeted safety inspections of worksites that use cranes or boom trucks. With officers based in the Lower Mainland, the Central Interior, and Vancouver Island, the team inspects cranes and boom trucks all across B.C.

When the crane team visits a worksite, they'll want to see the professional-engineer-certified annual inspection document, maintenance records, the operator's certification, and — if it's a boom truck — the stability documents.

"We're also looking at where the machine is set up and how it is being used," says Younger.

"The biggest problem we've run into by far is non-compliance with the crane or boom truck annual inspection."

While many employers do conduct an annual inspection of the machine's structural components, most are not fulfilling the requirement for annual mechanical and control inspections.

“We’ve seen serious incidents and a fatality — when a load collapsed due to mechanical crane failure on a boom truck.”

—Doug Younger, occupational safety officer, WorkSafeBC

“Inspecting all three critical components is more expensive, so the problem is that some customers want to hire someone to just do the structural inspection, and then bring in an engineer to sign off without a thorough inspection of the mechanical and control components,” notes Blair Norberg, vice-president of Surrey-based Falcon Equipment Ltd., a company that provides sales, service, and parts for heavy equipment.

The cost to do a structural, mechanical, and control inspection may be higher up front, but the savings don’t add up to much if an incident happens. The cost of equipment failure can include injuries, loss of life, lost work-hours, equipment costs, and even administrative penalties or increased insurance premiums. It all adds up to much more in the long run.

For Falcon Equipment, when it comes to getting every crane and boom truck inspected by a professional engineer, they go the full mile even if it’s more expensive to inspect all three critical components, instead of inspecting just one.

“It hurts when we lose business, but when it comes to safety and compliance, we can’t afford to cut corners,” adds Norberg.

Developing a comprehensive inspection plan

Falcon partners with Applus+ (formerly MXV Engineering) to oversee and certify its annual crane and boom truck inspections.

“Falcon approached us to help them develop a business model for one-stop shopping with regard

to preventive maintenance and annual inspections,” notes Mathew Smith, director, professional service at Applus+.

“They wanted to help their customers operate safely, optimize machine performance, minimize downtime, and extend the life of the crane or boom truck.”

Recommendations from Applus+ included a substantial investment in training for workers and inspectors at Falcon. This included training heavy-duty mechanics for mechanical, hydraulic, and electrical inspections and certifying structural inspectors to conduct visual weld inspections and non-destructive testing.

Meanwhile, Applus+ developed checklists for conducting the structural, mechanical, and control inspections. The engineering firm audits Falcon’s inspections to ensure they are performed correctly, and provides professional-engineer-certified documentation that confirms all critical machine components have been inspected and repaired (if required), and that the machine is safe for use.

When performing inspections, Falcon follows the crane manufacturers’ recommendations, applicable standard requirements, and Applus+’s criteria for structural, mechanical, and control inspections.

“Falcon did their due diligence to find an engineering firm that could help them develop a complete annual crane and boom truck inspection system, including the qualifications and certifications of their inspectors,” says Younger.




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“Falcon is an example of a company that’s doing things the right way. They’ve received some unfair backlash from the marketplace because there’s a false perception they’re pushing additional inspections and repairs on people. The fact is that Falcon is following the necessary processes to ensure the machine is safe for use.”

“Our motivation is to safeguard workers and the public,” says Howard Hartin, Falcon Equipment’s co-owner and corporate development manager.

“We try to educate customers with regard to on-the-job safety as well as the importance of having a preventive maintenance system in place to ensure their fleet of cranes and boom trucks is reliable and safe for years to come.”

For more information

Visit worksafebc.com and search for “crane” to find health and safety resources and more information on the WorkSafeBC Crane Initiative. ☺

—with files from Tom Ruffen



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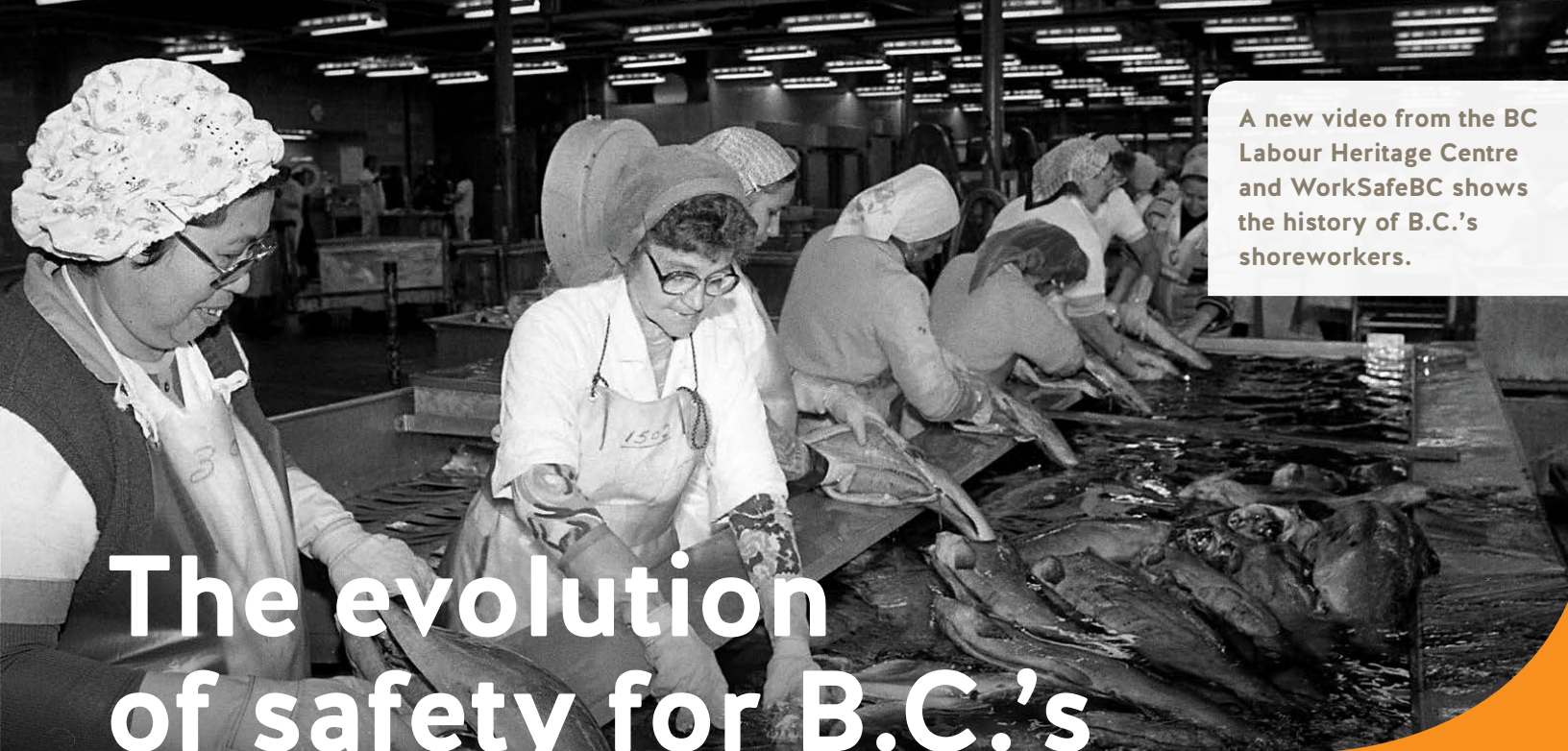
**For crane operators,
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the first step**

In addition to being certified, employers must ensure crane operators demonstrate competency and are familiar with the crane operating instructions.

For resources to help you understand crane operator requirements, visit worksafebc.com/construction



WORK SAFE BC



A new video from the BC Labour Heritage Centre and WorkSafeBC shows the history of B.C.'s shoreworkers.

The evolution of safety for B.C.'s shoreworkers

By Tanya Colledge

The fishing industry has always played an important role in B.C.'s history.

From creating jobs to contributing to our economy, the industry has been a backbone in the creation of the province we know today. B.C.'s shoreworkers also took important strides to improve health and safety for future generations.

For many, working in the fishing industry wasn't just a job, it was a lifestyle. It was hard work, one that came with its fair share of risks — risks that workers often dismissed for a hefty paycheck.

Elise Roberts was one such worker who came out west in the late 70s when she heard about the great opportunities in the shoreworker segment of the fishing industry.

"I got a job working a 12-hour night shift popping herring roe," she says. "We worked standing on the line in the cold, with all the wet — it was really hard work." She adds that she and her fellow line workers simply accepted that hazards and getting injured were just part of the job. A part of the life.

The booming canning industry would change the fishing industry forever. Thanks to new technology, canned fish was now able to be produced very quickly

and employed thousands of workers throughout the province. Large canneries were setting up shop from the Fraser River to the shores of Prince Rupert and in trying to keep up with the demands of production, health and safety fell to the bottom of the list of things to be concerned about.

"The company wanted to get everything through the plant as fast as possible and [my job as fish plant manager] was to get that fish in from the dock in the least amount of time," says Joy Thorkelson, who began her career in the fishing industry at the age of 20 working in a fish plant in Prince Rupert. "Getting companies to stop and think about issues such as health and safety wasn't easy. If a worker got injured on the job, they just went home."

The pain of repetitive strain

At the peak of production, workers were moving millions of pounds of fish every day. While some machinery was involved in processing, it was mainly manual labour — using hands, repetitive motions, and a lot of strain to get the job done.

By the 1980s, there was a growing level of awareness that work with repetitive motion was onerous and posed many risks of musculoskeletal injuries (MSIs) to workers. Unions began to lobby WorkSafeBC, then

called the Workers' Compensation Board, to accept repetitive motion strains, without success.

"There's an acknowledgement that through the 80s and into the 90s, musculoskeletal claims were not accepted," says Bruce Logan, occupational safety officer for WorkSafeBC, explaining that, at the time, Board adjudicators simply didn't have any information on these types of injuries because there hadn't been any scientific studies conducted to establish the correlation between MSIs, carpal tunnel syndrome, and the workplace.

Applying research to minimize injury

With injury rates on the rise, the Workers' Compensation Board knew something had to be done. A study was commissioned with the University of British Columbia to identify the onset of upper MSIs in fish-processing workers and the risk factors in the work related to them. In looking at techniques used to extract the roe, the study found carpal tunnel syndrome and tendinitis was present in a huge percentage of the workforce. But when companies allowed their employees to choose their techniques or vary their techniques, they found a lower rate of injury.

"Did we eliminate all the injuries? No. Did carpal tunnel suddenly disappear? No. But rates went down and people were healthier," explains Jim Sinclair, VP and union organizer for United Fishermen and Allied Workers' Union.

Over the years, safety in the fish-processing industry has improved dramatically thanks to the active roles of safety committees and their work to ensure worksite injuries and hazards are dealt with by employers. The changes are also thanks to partnerships — employers, workers, unions, and WorkSafeBC working together and taking responsibility for keeping people healthy and safe at work.

"It took everybody. It took companies to take responsibility and own up to [safety risks], and it took [WorkSafeBC] to reinforce it. Because without enforcement and without consequences, nothing changes," says Sinclair. "It was all those things working together that saved lives."

For more information

A new video from the BC Labour Heritage Centre and WorkSafeBC tells even more of the story. Watch the "History of Health and Safety in B.C.'s Shorerworker Industry" video at labourheritagecentre.ca.

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Construction

3D Image Construction Ltd. | \$2,500 | Abbotsford | September 11, 2018

This firm's worksite was a two-storey house under construction. WorkSafeBC observed one of the firm's workers, who was also a representative of the firm, installing sheeting on the 6:12 roof. The worker was not using a personal fall protection system and no other form of fall protection was in place, exposing the worker to a fall risk of about 6.1 m (20 ft.). WorkSafeBC also observed that guardrails were missing or incomplete in many areas, including window openings, patios, and stair openings. In addition, worker access to the basement level was via ladders instead of a stairway as required. The firm failed to ensure fall protection was used, a high-risk violation. The firm also failed to ensure guardrails met requirements, and to provide stairways to each floor of construction. These were all repeated violations.

A&P Roofing Services Co, Ltd. | \$5,000 | Burnaby | September 18, 2018

WorkSafeBC observed four of this firm's workers conducting roofing activities on the 7:12 sloped roof of a two-storey house. The workers were wearing fall protection harnesses but were not connected to lifelines or anchors. No other form of fall protection was in place, exposing the workers to a fall risk of up to 7.6 m (25 ft.). WorkSafeBC issued a stop-work order. The firm's failure to ensure the use of fall protection was a high-risk violation. The firm also failed to have a written fall protection plan in place. These were both repeated violations.

Abbotsford Framing Ltd. | \$5,000 | Surrey | September 18, 2018

WorkSafeBC inspected a worksite where this firm was framing a new three-storey house. Two of this firm's workers were observed sheeting the second-floor joists. They were not using personal fall protection systems and no other form of fall protection was in use, exposing the workers to a fall risk of up to 5.6 m (18.5 ft.). WorkSafeBC determined that workers accessed the second floor via a stepladder and a non-compliant, job-built wooden scaffold. In addition, WorkSafeBC observed that several locations around the site were missing guardrails, including window openings and an open stairwell pit leading to the basement. The firm failed to ensure fall protection was used, a high-risk violation, and to ensure a stairway was provided to each floor level before construction of the next floor began. These were both repeated violations. The firm also failed to ensure that guards or guardrails were installed in areas where required. Furthermore, the firm failed to provide its workers with the supervision necessary to ensure their health and safety.

A & B Projects Ltd. | \$2,500 | Surrey | September 10, 2018

This firm was hired to conduct asbestos abatement on the remains of a demolished house. During an inspection, WorkSafeBC observed three workers working near a debris pile that contained corner bead, drywall pieces, drywall dust, and pieces of poly used in the containment. Later tests indicated the debris pile had been cross-contaminated by asbestos-containing materials (ACMs). WorkSafeBC issued a stop work order. The firm's failure to have a qualified person ensure all hazardous materials were safely contained or removed was a repeated violation. The firm also failed to ensure that friable ACMs were controlled to prevent the release of airborne asbestos fibres and to safely contain or remove identified ACMs, both high-risk violations.

Alamgir Renovation & Roofing Ltd. | \$3,250 | Burnaby | September 17, 2018

WorkSafeBC inspected a new three-storey house and observed two of this firm's workers installing materials on a sloped roof. Neither worker was using a personal fall protection system and no other form of fall protection was in place, exposing the workers to fall risks of up to about 9.6 m (31.5 ft.). Furthermore, a written fall protection plan had not been developed for the site as required. On another site, WorkSafeBC observed three of the firm's workers, including a representative of the firm, on the roof of a house. The workers were not using personal fall protection systems and no other form of fall protection was in place, exposing the workers to a risk of falling up to 5.5 m (18 ft.). The firm failed to ensure fall protection was used, a high-risk violation, and failed to have a written fall protection plan for work at heights greater than 7.5 m (25 ft.). These were both repeated violations. In addition, the firm failed to provide its workers with the instruction and supervision necessary to ensure their health and safety.

Can-Tech Roofing Ltd. | \$2,500 | Abbotsford | September 5, 2018

WorkSafeBC observed four of this firm's workers on the roof of a house applying asphalt shingles. The workers were not using personal fall protection systems and no other form of fall protection was in place. The workers were at risk of falling about 4.6 m (15 ft.). WorkSafeBC issued a stop-work order. The firm failed to ensure fall protection was used, a repeated and high-risk violation.

Casey's Flashing and Roofing Ltd. | \$2,500 | Cranbrook | September 11, 2018

This firm was roofing a new one-storey commercial building. WorkSafeBC observed two workers installing roofing materials at the leading edge of the structure. One worker, a supervisor, was not wearing a fall protection harness; the second worker was wearing a fall protection harness but was not connected to a lifeline. No other form of fall protection was in place, exposing the workers to fall risks of 4.9 to 5.8 m (16 to 19 ft.). The firm failed to ensure fall protection was used, a high-risk violation. The firm also failed to provide its workers with the information, instruction, training, and supervision necessary to ensure their health and safety.

Causticco Renovation and Demolition Ltd. | \$2,500 | Coquitlam | September 14, 2018

This firm was contracted to demolish a two-storey house. WorkSafeBC inspected the site and observed a worker inside the partially demolished house removing a window without the benefit of personal protective equipment. WorkSafeBC also observed window frames with putty lying on the ground of the property. The hazardous materials survey for the site had identified the window putty as an asbestos-containing material (ACM). WorkSafeBC issued a stop-work order. The firm failed to take the necessary precautions to protect workers before allowing work that would disturb ACMs. Furthermore, the firm failed to ensure that hazardous materials were safely contained or removed before allowing demolition work that would disturb those materials, a repeated violation. These were both high-risk violations.

Causticco Renovation and Demolition Ltd. | \$2,500 | Coquitlam | September 14, 2018

WorkSafeBC inspected the site of a partially demolished two-storey house and observed a worker of this firm on the roof, removing shingles. The worker was wearing a fall protection harness directly connected to a lifeline instead of a lanyard and rope grab as required. No other form of fall protection was in place, exposing the worker to a fall risk of up to 5.2 m (17 ft.). WorkSafeBC issued a stop-work order. The firm failed to ensure fall protection was used, a high-risk violation. Furthermore, the firm failed to provide its workers with the information, instruction, training, and supervision necessary to ensure their health and safety. This was a repeated violation.

Administrative penalties are monetary fines imposed on employers for health and safety violations of the *Workers Compensation Act* and/or the *Occupational Health and Safety Regulation*. The penalties listed in this section are grouped by industry, in alphabetical order, starting with "Construction." They show the date the penalty was imposed and the location where the violation occurred (not necessarily the business location). The registered business name is given, as well as any "doing business as" (DBA) name.

The penalty amount is based on the nature of the violation, the employer's compliance history, and the employer's assessable payroll. Once a penalty is imposed, the employer has 45 days to appeal to the Review Division of WorkSafeBC. The Review Division may maintain, reduce, or withdraw the penalty; it may increase the penalty as well. Employers may then file an appeal within 30 days of the Review Division's decision to the Workers' Compensation Appeal Tribunal, an independent appeal body.

The amounts shown here indicate the penalties imposed prior to appeal, and may not reflect the final penalty amount.

For more up-to-date penalty information, you can search our penalties database on our website at [worksafebc.com](https://www.worksafebc.com). Find it easily by entering the word "penalties" into our search bar.

D&G Hazmat Services Ltd. | \$5,000 | Vancouver | September 13, 2018

This firm prepared the hazardous materials report for a house that had undergone pre-demolition asbestos abatement. WorkSafeBC inspected the site and observed that the firm had not taken adequate samples of potentially asbestos-containing materials (ACMs) from the house, including plaster materials, exterior stucco, ceiling tile, and the paper backing of fibreglass insulation. The plaster materials were later confirmed to contain asbestos. The firm failed to collect representative samples of potentially hazardous materials, a repeated and high-risk violation.

D&G Hazmat Services Ltd. | \$5,000 | Surrey | October 11, 2018

This firm prepared a hazardous materials inspection report for a house slated for demolition. WorkSafeBC determined that potential asbestos-containing materials (ACMs) present in the building, including chimney firestop cement and vinyl flooring mastic, had not been sampled and tested as part of the firm's inspection. These materials were later confirmed to contain asbestos. The firm failed to collect representative samples of potentially hazardous materials, a repeated violation.

Daniel Coal Murphy / MK Demo | \$1,250 | Vancouver | September 28, 2018

This firm had conducted asbestos abatement at a house slated for demolition. WorkSafeBC inspected the site and observed identified asbestos-containing materials (ACMs), including vermiculite insulation and spray texture, still present in the house. WorkSafeBC also determined that other materials remaining in the house, such as fibreglass insulation and building paper, had been exposed to airborne asbestos fibres during the abatement. The firm failed to safely contain or remove hazardous materials, a repeated violation.

EFE Hazmat Ltd. | \$2,500 | Delta | August 27, 2018

This firm was conducting pre-demolition asbestos abatement for several pre-1990 buildings. WorkSafeBC inspected the site and observed a debris pile that included uncontained vermiculite and batt insulation, both of which were confirmed asbestos-containing materials (ACMs). WorkSafeBC issued a stop-work order. The firm failed to ensure hazardous materials were safely contained or removed, a repeated and high-risk violation.

Evolve Environmental Services Ltd. | \$2,500 | Coquitlam | September 28, 2018

This firm had provided a pre-demolition clearance letter for a two-storey house. The letter indicated that all asbestos-containing materials (ACMs) had been removed. WorkSafeBC inspected the site while another firm was engaged in demolition work and observed that window putty and vinyl floor tile, both confirmed ACMs, were still present. A stop-work order was issued. The firm failed to ensure that hazardous materials were safely contained or removed, a high-risk violation.

Falcon Roofing Ltd. | \$10,000 | Coquitlam | October 22, 2018

WorkSafeBC inspected a worksite where this firm was roofing a new two-storey house and observed a worker on the lower roof. The worker was not using a personal fall protection system and no other form of fall protection was available, exposing the worker to a fall risk of up to 6.1 m (20 ft.). In addition, the worker was in the line of sight of a supervisor on the ground. WorkSafeBC issued a stop-work order. The firm failed to ensure fall protection was used, a high-risk violation. Furthermore, the firm failed to provide its workers with the information, instruction, training, and supervision necessary to ensure their health and safety. These were both repeated violations.

Fraser Valley Stucco Ltd. | \$3,732.34 | Vancouver | September 18, 2018

This firm was installing rainscreen siding and stucco at a house and laneway house under construction. WorkSafeBC observed one of the firm's workers walking near the edge of the 10:12 sloped roof of the laneway house. The worker was not using a personal fall protection system and no other form of fall protection was in place, which exposed the worker to a fall risk of greater than 3.6 m (11 ft.). The firm failed to ensure fall protection was used, a high-risk violation. The firm also failed to provide its workers with the information, instruction, training, and supervision

necessary to ensure their health and safety. These were both repeated violations.

G & D Construction Ltd. | \$10,000 | Surrey | October 2, 2018

This firm was working on the construction of a new three-storey house. WorkSafeBC observed three of the firm's workers sheeting joists on the second floor of the building with no guardrails or other form of fall protection in place. This exposed the workers to a fall risk of up to 6.6 m (21.75 ft.). WorkSafeBC also observed that worker access to the second floor was via ladder instead of a stairway as required. In addition, scaffolds onsite had deficiencies, including uprights that were not plumb and a lack of bearer blocks on load-bearing points. The firm failed to ensure fall protection was used, a high-risk violation. The firm also failed to construct a stairway to each floor level before construction of the next floor began, and failed to ensure that work platforms met the required standards. Furthermore, the firm failed to provide its workers with the information, instruction, training, and supervision necessary to ensure their health and safety. These were all repeated violations.

GS & A Framing Ltd. | \$2,500 | Surrey | October 2, 2018

This firm was framing a new three-storey house. WorkSafeBC observed six of the firm's workers, including a supervisor, working on the 12:12 sloped roof and other areas of the building. None of the workers was using an adequate personal fall protection system and no other form of fall protection was in place, exposing the workers to fall risks of up to 7 m (23 ft.). WorkSafeBC issued a stop-work order. The firm failed to ensure fall protection was used, a high-risk violation, and failed to provide its workers with the information, instruction, supervision, and training necessary to ensure their health and safety. These were both repeated violations.

Jack Cewe Ltd. | \$65,712.60 | Port Coquitlam | October 24, 2018

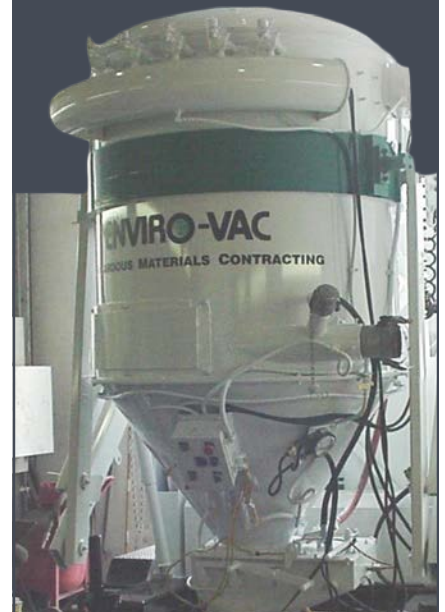
This firm was doing road construction work when its excavator contacted a buried, energized highvoltage electrical conduit. WorkSafeBC determined that the firm failed to undertake excavation work according to the requirements of the utility service owner, and failed to ensure machinery was kept the minimum approach distance from exposed electrical conductors. These were both repeated and highrisk violations.

Jason Robert Laverne Bhe / BHE Construction | \$2,500 | Kamloops | September 21, 2018

This firm was sheeting the roof of a two-storey residential complex. WorkSafeBC observed two of the firm's workers, one of whom was a representative of the firm, standing on the 6:12 sloped roof. The workers were not using personal fall protection systems and no other form of fall protection was in place, exposing them to fall risks of up to 5.9 m (19 ft. 4 in.). The firm failed to ensure fall protection was used, a high-risk violation. Furthermore, the firm failed to provide its workers with the information, instruction, training, and supervision necessary to ensure their health and safety. These were both repeated violations.

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Penalties (continued)

Jasson Chada | \$15,500 | Surrey | October 24, 2018

WorkSafeBC inspected this firm's building demolition worksite after workers had completed the demolition work. The firm had not completed a hazardous materials survey, did not have air sampling results or clearance documents, and did not know how the demolition waste had been handled and disposed of. The firm failed to ensure that hazardous materials were safely contained or removed prior to demolition work taking place. This was a high-risk violation.

General Contracting or Construction

Kaktus Flats Development Ltd. | \$2,500 | Kamloops | September 5, 2018

This firm was conducting asbestos abatement at a commercial building slated for demolition. WorkSafeBC inspected the site and determined that workers had begun removing asbestos-containing materials (ACMs), but no written exposure control plan or site-specific safe work procedures were available. In addition, the firm did not have fit-test records for workers or a written respiratory program. WorkSafeBC issued a stop-work order. The firm failed to ensure hazardous materials were safely contained or removed, a high-risk violation.

Lena Ann Dove / Big Guys Roofing & Exteriors | \$2,500 | Abbotsford | September 17, 2018

This firm was roofing a two-storey house. WorkSafeBC observed four of the firm's workers, one of them a supervisor, applying membrane on the roof. None of the workers was using a fall protection system and no other form of fall protection was in place. During a subsequent inspection, WorkSafeBC observed three of the firm's workers on the roof of the same house. They were working in the direct line of sight of the supervisor without the use of any form of fall protection. In each instance, the workers were exposed to fall risks of up to 4.6 m (15 ft.). The firm failed to ensure the use of fall protection, a high-risk violation, and failed to provide the supervision necessary to ensure the health and safety of its workers. These were repeated violations.

M.C.A. Environmental Consulting Inc. | \$2,500 | Vancouver | October 24, 2018

This firm conducted a hazardous materials survey and post-abatement inspection for a pre-1990 house slated for demolition. WorkSafeBC inspected the site after the firm issued the post-abatement clearance letter and identified deficiencies with the survey. For example, the report did not identify all the different types of vinyl sheet flooring present in the house and did not include the vinyl floor tile in the kitchen. In addition, the firm had not collected an adequate number of samples during the initial inspection and the survey did not clearly identify the location of each sample. Furthermore, WorkSafeBC determined that asbestos-containing materials (ACMs) remained in the house, and issued a stop-work order. The firm failed to collect representative samples of potentially hazardous materials, a repeated violation.

Parbh Homes Ltd. | \$8,354.86 | Burnaby | September 19, 2018

WorkSafeBC observed three of this firm's workers applying sheeting to the roof of a two-storey house under

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construction. None of the workers was using a personal fall protection system and no other form of fall protection was in place, exposing them to fall risks of up to 7.6 m (25 ft.). The firm's failure to ensure the use of fall protection was a repeated and high-risk violation.

Performance Contracting Ltd. | \$17,381.77 | Richmond | October 2, 2018

This firm was excavating a trench for the installation of a water line. During this work, an excavator struck and damaged two energized high-voltage power ducts. WorkSafeBC attended the scene and determined that the ducts had been damaged and insufficiently repaired, and had remained energized at the time of the incident. The firm failed to inform its workers of the existence and location of high-voltage electrical conductors, and failed to ensure work procedures complied with regulatory requirements. This was a high-risk violation.

Quantum Enviro Contracting Inc. | \$2,500 | Kitimat | September 18, 2018

This firm had been hired to excavate a residential water line. WorkSafeBC inspected the site after a trench partially collapsed and injured one of the firm's workers. WorkSafeBC determined that the trench was 1.2 to 1.8 m (4 to 6 ft.) deep when the worker was directed to enter the trench to reposition a sump pump. After the worker repositioned the pump, one side of the trench collapsed and engulfed the worker above the waist in clay, sand, and rock. The firm failed to ensure that, prior to worker entry, the excavation was sloped, benched, shored, or supported as required. This was a high-risk violation.

Romao Roofing Ltd. | \$2,500 | Burnaby | September 10, 2018

This firm's worksite was a residential restoration project. WorkSafeBC observed one of the firm's workers, who was also a representative of the firm, installing a tarp on a roof. The worker was not using a personal fall protection system and no other form of fall protection was in place, exposing the worker to a fall risk of more than 5.2 m (17 ft.). The firm failed to ensure fall protection was used, a repeated and high-risk violation.

Russell McMann Builders Group Inc. / RM Builders | \$2,500 | Nanaimo | September 13, 2018

WorkSafeBC observed two of this firm's workers applying trim to the 4:12 sloped roof of a single-storey duplex. Neither worker was using a personal fall protection system and no other form of fall protection was in place. The workers, one of whom was a supervisor, were exposed to a fall risk of about 6.1 m (20 ft.). The firm failed to ensure fall protection was used, a high-risk violation.

SB Roofing Ltd. | \$10,000 | Squamish | October 2, 2018

WorkSafeBC observed three of this firm's workers on a two-storey house under construction. Two of the workers were working on the roof and wearing fall protection harness, but they were not attached to lifelines, and no other form of fall protection was in place. The third worker was working near the unguarded edge of a balcony without any form of fall protection. The workers were exposed to the risk of falling about 4.3 m (14 ft.) or more. The firm's failure to ensure the use of fall protection was a repeated and high-risk violation.

Seattle Environmental Consulting Ltd. | \$10,000 | Richmond | September 13, 2018

This firm was conducting asbestos abatement at neighbouring houses scheduled for demolition. WorkSafeBC inspected two of the worksites and observed violations related to the safe containment and removal of asbestos-containing materials (ACMs). For example, there were breaches in the containments; there was excessive drywall and texture coated ceiling debris, identified as ACMs, inside one of the containments; and a negative air unit had been shut off and a decontamination facility disconnected before air clearance had been conducted. WorkSafeBC issued stop-work orders for both sites. The firm failed to safely contain or remove hazardous materials at these sites, repeated and high-risk violations.

Top Side Construction Ltd. | \$2,500 | Langley | October 24, 2018

This firm was working on the construction of a new house. WorkSafeBC observed one of the firm's workers sheeting the second-storey, 5:12 sloped roof at a height of about 5.5 m (18 ft.). The worker was not using a personal

fall protection system and no other form of fall protection was in place. WorkSafeBC also observed that a stair opening, some window and door openings, and a patio all lacked guardrails. The firm failed to ensure fall protection was used, a high-risk violation, and failed to ensure guardrails were installed as required. These were both repeated violations.

Trent Blackwell | \$2,500 | Kamloops | October 9, 2018

WorkSafeBC inspected this firm's worksite, a house demolition, and observed a worker using an excavator to complete the demolition. WorkSafeBC determined that the firm had not conducted a hazardous materials survey prior to starting demolition work. A survey conducted later confirmed the presence of asbestos-containing texture coat in excavation waste bins and on the ground. The firm failed to ensure a qualified person inspected the worksite as required and identified all hazardous materials. This was a high-risk violation.

Manufacturing

Alpine Glass, Windows & Doors Ltd. | \$14,435.93 | Fort St. John | September 21, 2018

WorkSafeBC inspected this worksite after one of the firm's workers was seriously injured in an incident involving unguarded equipment. The worker inadvertently came into contact with the blade of a table saw while trying to cross-cut a sheet of hardboard. WorkSafeBC determined that the table saw's blade guard had been removed during a move from another location, and had not been re-installed. In addition, an acceptable safeguarding alternative (such as a push-stick, jig, or feather board) had not been used. The firm's failure to ensure the use of appropriate guarding for woodworking machinery was a high-risk violation.

Sandel Foods Inc. | \$34,223.14 | Chilliwack | October 22, 2018

A worker at this firm's food processing plant was assigned to clean a sort-line conveyor while it was still running. The worker's arm became entangled in exposed and moving machine parts, and the worker sustained serious injuries. A WorkSafeBC investigation determined that the conveyor was not locked out or sufficiently guarded, that it was part of the firm's work procedures to keep the conveyor running during maintenance, and that the conveyor was not equipped with an emergency stopping device. In addition, the investigation found that the worker was given neither training nor supervision for cleaning the conveyor. The firm failed to lock out machinery before maintenance work was done, and failed to guard nip points on belt conveyors to prevent contact by workers. The firm also failed to ensure the health and safety of all workers at its workplace. These were all high-risk violations.

Waterbridge Steel Inc. | \$10,766.12 | Glade | September 11, 2018

This worksite was the location for the construction of a new inland ferry vessel. When WorkSafeBC inspected the site, the firm was preparing to use a crane to lift a pre-fabricated module onto the partly assembled vessel. WorkSafeBC determined that workers had accessed the top of the module to connect the lifting chain slings to the designated lifting points. No fall protection system had been in place, exposing workers to a fall risk of 4.1 m (13.5 ft.). The firm failed to ensure fall protection was used, a high-risk violation. WorkSafeBC also determined that welding and grinding work had taken place in the spaces underneath the main deck prior to conducting initial air testing, and that no rescue team was on site. The firm failed to ensure that before workers entered a confined space, it implemented a confined space program with the required elements, including the assignment of responsibilities, a hazard assessment, and verification and testing. This was a repeated and high-risk violation.

Primary Resources

Crew Energy Inc. | \$9,763.74 | Dawson Creek | October 12, 2018

This firm was the owner and prime contractor at a gas multi-well site. Workers were conducting flowback operations to test the yield of two new wells, transferring gas and condensate to an open-top buffer tank. While

checking a generator unit near the buffer tank, a worker from a subcontracted firm turned the generator's engine off but the engine continued to run. A flash fire erupted and the worker sustained serious injuries. WorkSafeBC's investigation determined poor separation resulted in gas and condensate being moved to the buffer tank. The fire erupted when an ignition source at the generator contacted the hydrocarbon cloud from the buffer tank. The firm failed to eliminate or control sources of ignition when flammable materials were being handled, to conduct air sampling to assess the risk of worker exposure, and to implement safe work procedures. The firm also failed to ensure that machinery was certified and capable of performing safely. In addition, the firm failed to provide the information, instruction, supervision, and training necessary to ensure worker health and safety. These were all high-risk violations. Furthermore, as prime contractor, the firm failed to establish and maintain a system of regulatory compliance, a repeated violation based on similar violations occurring at the firm's other locations.

Francesco Aquilini & Roberto Aquilini & Paolo Aquilini et al. / Golden Eagle Farms | \$53,690.19 | Pitt Meadows | October 22, 2018

WorkSafeBC conducted an inspection of this firm's worker transportation vehicle jointly with the provincial Commercial Vehicle Safety & Enforcement Branch. The inspection identified deficiencies, including a leak in the air brake compressor discharge line. The vehicle was deemed unsafe and WorkSafeBC issued a stop-use order. The firm failed to ensure vehicles used to transport workers were maintained, a repeated and high-risk violation.

June Bug Logging Ltd. | \$2,500 | Bamfield | September 12, 2018

One of this firm's workers was hand-felling a cedar tree in a cutblock. A limb-tied hemlock fell and landed at the base of the cedar, striking and injuring the worker. The firm failed to ensure that, when trees were felled, workers moved to a predetermined safe position at least 3 m (10 ft.) away from the base of the tree. This was a high-risk violation.

Robert Wadhams | \$2,500 | Cape Lazo | August 29, 2018

A commercial seine fishing vessel was pumping herring from its net into a second vessel when the aft hold of the seiner took on a large volume of water. The crewmembers were not able to pump out the water while simultaneously dealing with a rapid decrease in vessel stability. The seiner listed, capsized, and then sank. Four crewmembers were able to escape to a skiff. A fifth crewmember had gone into the engine room, which became flooded as the vessel took on water, preventing the crewmember from escaping. This crewmember was never recovered and is presumed drowned. WorkSafeBC's investigation determined that the access plate in the aft hold had not been replaced after new pumps were installed. This allowed water to enter the hold. In addition, the employer had not taken account of the excessive weight of the fish, which decreased the vessel's stability and contributed to it capsizing. The employer (master) failed to ensure that machinery and equipment was properly maintained and functioning safely during the voyage, and failed to ensure the health and safety of all workers. These were high-risk violations.

Service Sector

Kavips Blasting Ltd. | \$2,500 | Kamloops | September 18, 2018

This firm was conducting abrasive blasting to remove a painted line on a paved road. WorkSafeBC observed that one of the firm's workers, a representative of the firm who was carrying out the blasting, was wearing a respirator. A second worker was observed operating a vehicle pulling the blasting equipment as the work progressed along the road, and getting in and out of the vehicle. This worker was not wearing a respirator. A cloud of dust was visible around the work area and the vehicle was covered in dust. No risk assessment had been carried out to determine whether respirable crystalline silica or other hazardous substances would be released during the blasting. The firm failed to ensure a risk assessment was done before conducting abrasive blasting activity that could cause the release of a harmful level of an air contaminant. This was a repeated and high-risk violation.



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