

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](http://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, certification is just 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](http://worksafebc.com/construction)

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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 paycheque.

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 Shreworker Industry" video at [labourheritagecentre.ca](http://labourheritagecentre.ca).

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