

The Labour History Project: Workplace Health and Safety



Health and Safety in the Workplace Case Study: Babine Lake

Audience:
Secondary Students
Union Orientation

Activity Summary: Participants will review the Burns Lake mill tragedy by analyzing each of the positions taken by the employer (Babine Forest Products and Hampton Affiliates), and a government agency (WorkSafeBC) after the incident.

Participants will compare the Burns Lake Mill and Lakeland Mill explosions and fires both of which destroyed the respective sawmills within a three-month period.

Participants will offer their view on the lessons learned in this historical case study of workplace health and safety.

Framework for Learning

This activity is rooted in several important concepts about workers and adult learners. First, two 1993 studies of teaching labour history to unionists revealed such workers were actually interested in labour history for more than pragmatic reasons (i.e. a promotion). They also sought to “improve themselves,” by learning more about their role in society. They appreciated opportunities to connect themselves as part of a larger whole: the labour movement in history. Second, this activity is also *based upon the six Principles of Adult Learners (Andrew Knowles)* who:

- *Are internally motivated and self-directed.*
- *Are goal oriented*
- *Are practical*
- *Seek relevance*
- *Bring life experiences and knowledge to the learning experience.*
- *Want to be respected.*

Materials Provided

1. Overview of the tragedy.
2. Summary of some findings in the comprehensive WorkSafeBC Investigation report on this workplace;
3. Gordon Hoekstra, “Babine Forest Products disagrees with WorkSafeBC Safety Authority Conclusions,” Vancouver Sun, January 22, 2014.
4. Mark Nielsen, Prince George Citizen, The Canadian Press, “Lakeland Mills Explosion That Killed Workers Ruled Accidental.” Huffington Post, May 15, 2015.
5. Questions for Discussion
6. The WorkSafeBC Investigation report summary on the Burns Lake disaster is a public document released in 2014 which may be viewed at
<https://www.worksafebc.com/en/resources/health-safety/incident-investigation-report-summaries/explosion-and-fire-at-sawmill-in-burns-lake?lang=en>

Workshop Instructions

1. Workshop participants will view on-line videos [**note: yet to be selected**]. They will read Handouts 1-4. Note number 6 (88 pages online) is richly descriptive but optional. Facilitator may wish to distribute all sources, including reference to Handout 6, prior to the workshop.

Option 1. Divide group into two parts. One group will Participants will review the Burns Lake mill tragedy by assuming the positions taken by the employer (Babine Forest Products and Hampton Affiliates); the other group will assume the position of a government regulatory agency (WorkSafeBC) after the incident. Each group communicates their positions through one or more spokespersons.

Option 2. Facilitator leads participants through Questions for Discussion (last page).

3. Regardless of option chosen, participants will offer their views orally or in written form on the lessons learned in this historical case study of workplace health and safety.

HANDOUT 1:

Overview of the tragedy

On 20:07, January 20, 2012, an explosion and ensuing fire completely destroyed the Babine Forest Products (BFP) sawmill outside of Burns Lake killing two men and injuring twenty others. WorkSafeBC concluded that inadequate dust collection and removal systems and very dry winter conditions had triggered the explosion. Three months later, a second explosion and fire at another sawmill, the Lakeland Mill in Prince George, also killed two men and injured twenty-two others. As a result of links between the two disasters, WorkSafeBC took action. It ordered a comprehensive risk assessment of B.C. sawmills with respect to combustible dust hazards and their control, undertook the inspection of sawmills, and raised the hazard alert on the hazards of combustible wood dust.

Babine Forest Products disagreed with the WorkSafeBC regulatory agency stating that no one at their mill, or in the industry knew about wood-dust explosions at the time of the incident. Had they known, they would have taken the required steps to address the hazard. No regulator had ever issued wood-dust explosion warnings neither to the Burns Lake mill nor to any other B.C. sawmill. WorkSafeBC countered that on 10 previous occasions, sawmills in Elkford, Grand Forks, Merritt, Quesnel, and Fort St. John had been warned of the potential explosive hazard posed by wood dust. The WorkSafeBC report referenced several smaller explosions and fires that had happened in the mill, one of these less than two weeks before the catastrophic event that destroyed the sawmill.

To date, there has been no prosecution of mill owners. A police line was erected around the mill. WorkSafeBC took command of the site until April 18, 2012. An extensive thirteen weeklong investigation yielded 40,000 individual pieces of evidence. The Babine Explosion Investigation later reported to premier Christy Clark on February 6, 2014, stating the Criminal Justice Branch would not lay charges against the owners of BFP. The Crown believed that some of the evidence gathered by WorkSafeBC was collected in a matter that would be inadmissible in court. It also believed there was a strong case for mill owners offering the defence of having exhibited due diligence. Small explosions and spot fires from dust around equipment could have been foreseen – in fact, some according to the WorkSafeBC investigation, several had occurred. However, the Crown ascertained, the owners could not have “reasonably foreseen that sawdust could cause a catastrophic explosion.” Seven months after the Criminal Justice Branch issued its decision that no charges would be laid, WorkSafeBC issued a one million dollar fine, an “administrative penalty,” against the mill.

Three months later, a similar explosion at the Lakeland Mill in Prince George resulted in the deaths of two men and injury to twenty-two others. The Lakeland explosion was ruled accidental. No fault was assessed nor accountability yet there were indications conditions were degrading in the workplace as the mill had increased production without changing the environment. No charges have been laid in this case although WorkSafeBC recommended Lakeland be charged with four “regulatory,” not criminal offences. A five person Coroner’s Inquest into the Lakeland Mill incident resulted in thirty-three recommendations, one of these being that the police develop a protocol for investigating criminal negligence in the B.C. workplace. Some British Columbians have called for a public inquiry into the tragedy. One legal opinion offered is that the decision of Crown counsel to approve or not approve charges “is not a proper subject for review in a public inquiry.” The other is that investigation of this event does constitute a matter of broad “public interest” and thus falls within the jurisdiction of the Public Inquiry Act.

HANDOUT 2:

Summary of some findings in WorkSafeBC investigation.

During the afternoon shift on January 20, 2012, at approximately 20:07 during the afternoon shift there was an explosion at the Babine Forest Products sawmill with 250 employees located twenty kilometres east of Burns Lake, British Columbia. An explosion burst through the roof at the northeast side of the mill and then travelled east to west through the operating and basement levels. Fire spread throughout the building completely destroying the mill. Two workers, one operating the No. 1 cut-off sawmill, another having gone into the basement, were killed in the explosion. Twenty others were injured, some with severe burns.

January's lumber production had exceeded that of November and December 2011, the latter of which had already been high production months. The mill customarily spent 3 days cutting the mountain pine beetle killed pine, and 2 days cutting spruce. Production generated a "significant" amount of waste in the form of wood debris and dust. A ventilation system evacuated some of the dust. Other dust, once settled, was dispersed as it was swept along with debris into floor openings falling into waste conveyor belts in the basement. This debris was gathered and placed on conveyor belts leading to chippers and ultimately to debris piles outside the mill. Uncollected dust dispersed throughout the basement.

Wood dust accumulation is a known hazard in sawmilling because of the explosive nature of very dry mill wood dust especially during periods of very low humidity. The BFP sawmill had an inadequate wood dust collection and removal system. There were no wood dusters in either of the chipper locations, under or around the edger saws, or in the eliminator areas, some of the dustiest locations in the mill. The owners had redirected the dust collection system to serve other areas of the mill, relying on natural ventilation in the trim saw area, as well as the use of clean up workers. On a daily basis, a five-person crew swept wood debris and dust into conveyors leading out of the sawmill. This was ineffective in a mill that had moved to processing more and more beetle-killed pine known to be extremely dry. Over time, BFP had begun processing more beetle-killed pine than green spruce.

A dust collection system included a rooftop bag house for 36 filters which collected the dust (dust caked on their exteriors) and which had to be manually cleaned. The Maintenance Superintendent stated that the bag house was undersized for the sawmill. The mill was purchasing an upgraded bag house that was not yet installed because of an inadequate power supply that was in the process of being upgraded. The dust collection system may not have been operating as early as October 21, 2011, because the filter bags were plugged up and frozen as a result of water from misters on sawblades later freezing on the filter bags. Millwright 3, who normally serviced and maintained the system, stated that he had replaced the filter bags and restarted the system on or around December 16, 2011. The invoices show that these filter elements were not ordered until December 2011.

It is unclear if a spark detection system (designed to trigger water sprinklers in the event of a spark) was working properly at the time of the explosion. Less than a week earlier, upon inspection, the manufacturer had commented on January 16 that some of the system was installed incorrectly. Over the period January 17–19, the contractor supplied an inspection and maintenance program, by fax, to the mill. It is not known if the system was fully functional at the time of the mill explosion on January 20.

Special ducting and a pressurization within a Motor Control Centre (MCC) was designed prevent wood dust from migrating into and accumulating within the panels. However, this pressurization system was shut down in mid-January 2012 when it was found that the suction side of the fans had been placed at floor level and the fans were actually drawing wood dust from the mill into the MCC cabinets. The filter system for the intake air was ineffective. One of two new exhaust fans planned for a mill upgrade had arrived but had not been installed by the time of the incident.

The mill's water misting system, designed to mist operating sawblades, had been upgraded but was not operational due to the extreme cold weather which caused frozen and broken water pipes. At time of incident, the misters on the trim saws were turned off.

On December 28, 2011, two weeks before the explosion and fire, WorkSafeBC communicated the results of recent air quality test results samples they had taken earlier on November 24. Two samples had exceeded allowable exposure limits. BFP was informed "current ventilation system and water misters were not adequately protecting workers" and that BFP was in violation of Part 5.48 of Occupational Health and Safety Regulations for exceeding wood dust respiratory exposure. WorkSafeBC imposed a deadline of January 31, 2012 for notifying WorkSafeBC of the steps taken to achieve compliance.

Over the five years before the accident, WorkSafeBC had visited the Babine sawmill operations. Of note, a dust explosion and significant fire occurred at the BFP sawmill on February 23, 2011, when an operator attempted to start the bandsaw triggering an explosion. The British Columbia Safety Authority (BCSA) concluded that hot gases from a fuse ignited beetle-killed wood dust in the panel. "Unusually dry" and explosive sawdust had accumulated in and on equipment in the vicinity of the switch. Combined with weather conditions, ignition of the sawdust was explosive and resulted in other fires. A Hampton Affiliates (the group had a majority ownership interest in BFP) report noted "this mill has a tremendous amount of dry wood fibre dust, resulting in a very large fuel load." The Hampton report stated there had been another fire as recently as January 7, 2012, which may not have been investigated. That fire was blamed on sparks igniting sawdust in the machine and carpenter shops. Other smaller fires had broken out in the sawmill in the months leading up to the incident. Many of these were blamed on friction fires (hot bearings) and on contractors doing work around the sawmill.

Conclusion: The WorkSafeBC report concluded the explosion and fire was a "preventable incident." At the time of the explosion, Babine Forest Products had knowingly operated with an undersized dust collection system and with an inadequate power supply. It had carried out only preliminary work on an upgrade. Because BFP changed its dust collection focus, some areas such as the trim saws and edgers had no dust collection. In spite of these factors, rather than reduce production, BFP in fact increased production. As to the "causes", the report stated,

The wood dust that was dispersed in the air within the Babine sawmill was of sufficient concentration to explode... Friction within the motor-reducer V-belt guard provided ignition source. Wood dust from beneath the 8R-25 conveyor migrated into the confined area within the motor-reducer V-belt guard. The dust was compacted and subjected to near-constant friction from the rotating belts and sheaves. This dust caught fire and ignited the airborne wood dust that was dispersed in the area. An explosion and subsequent fire travelled through the mill, disturbing and dispersing the accumulated wood dusts and setting off secondary deflagrating explosions that totally destroyed the mill, killing two workers and injuring 20, many seriously

As to "underlying factors," WorkSafeBC concluded there were a) ineffective wood dust control measures at the mill; b) an ineffective inspection and maintenance system, in particular of

the belt guard system and containment; c) conditions of very dry environment with low humidity compounded by very dry beetle-killed wood; d) waste conveyor configurations that increased airborne wood dust as they did not adequately remove wood dust; and e) inadequate supervision of clean-up and maintenance staff.

After a second explosion three months later at the Lakeland Mills in Prince George WorkSafeBC took further action regarding sawmills in British Columbia:

- It ordered all sawmills in B.C. to undertake a comprehensive risk assessment with respect to hazards created by combustible dusts and develop and implement an effective combustible dust control program
- Undertook inspections of sawmills by WorkSafeBC prevention officers
- Expanded Inspections to similar wood-processing operations where dust accumulation could be a hazard
- Established a hazard alert on the increased risk in winter of combustible dust

HANDOUT 3:

Babine Forest Products disagrees with WorkSafeBC, B.C. Safety Authority conclusions

'What happened at Babine was a tragic accident, for which we will always be sorry,' company says in recent statement

BY GORDON HOEKSTRA, VANCOUVER SUN JANUARY 22, 2014



Smoke rises as police tape surrounds the Babine Forest Products mill in Burns Lake on Jan. 21, 2012. Family members are dismayed that Crown counsel will not proceed with charges after what it described as a flawed investigation by WorkSafeBC into the sawmill explosion, which killed two men and injured 20.

Photograph by: JONATHAN HAYWARD, THE CANADIAN PRESS

The company that owns a Burns Lake sawmill that exploded killing two workers disagrees with conclusions by regulatory agencies which puts the blame on the company.

In a written statement issued Wednesday afternoon, Babine Forest Products says it could not have known about the possibility of a wood-dust explosion because nobody in the industry knew at the time of the incident that dry, fine wood dust from beetle-killed timber was explosive.

The Jan. 20, 2012 explosion and fire fuelled by wood dust at the northern B.C. mill killed workers Robert Luggi Jr., 45, and Carl Charlie, 42. The explosion also injured another 20 workers, some of them with severe burns.

"What happened at Babine was a tragic accident, for which we will always be sorry," said the mill's statement. "Most accidents are preventable when viewed with the benefit of hindsight and knowledge gained after the fact. Had Babine foreseen the hazard, the company would have taken immediate steps to address the risk, and never have exposed our employees to that risk in operating the facility," said the company.

WorkSafeBC concluded the explosion was preventable and that "effective" actions should have been taken to control both the airborne dispersal of wood dust and the excessive accumulations on floors.

The B.C. Safety Authority, which has responsibility for mill equipment, concluded the root cause of the explosion was a failure to recognize and manage the explosive risks of wood dust. Representatives at Portland, Ore.-based Hampton Affiliates said Wednesday company officials would not be giving interviews, in part, because WorkSafeBC is in the process of considering administrative penalties.

Hampton is the majority owner of Babine, while the Burns Lake Native Development Corp. holds a minority stake.

Babine agreed the underlying cause of the explosion was fine sawdust from beetle-killed wood, but said they only learned of its explosive nature from industry testing after the Jan. 20, 2012 explosion.

In its statement, the company said to its knowledge no one in the sawmill industry knew this fact, and that no regulator had issued wood-dust explosion warnings to Babine or any other sawmill. Babine also pointed to the Crown counsel's recent decision not to lay charges in the incident, in which it said the Crown had noted that when WorkSafeBC called for testing of wood dust in the fall of 2011 it didn't raise a concern about the risk of an explosion.

WorkSafeBC had raised concerns about the level of wood dust as a problem for worker's lungs at Babine, but had not explicitly raised the issue of wood dust as an explosive hazard, according to 2007-2012 inspection records posted by WorkSafeBC on its website.

However, WorkSafeBC noted in its investigation report that had dust been cleaned up "such actions might have prevented this (explosion) incident."

WorkSafeBC had also told other sawmills in British Columbia that wood dust was an explosive hazard.

In an [sic] 2012 story, inspection records from 2007-2011 obtained by The Vancouver Sun from WorkSafeBC through a freedom of information request showed that 10 times, sawmills in Elkhorn, Grand Forks, Merritt, Quesnel and Fort St. John were warned of wood dust's explosive capacity. Two weeks ago, Crown counsel announced it was not laying charges because some of the evidence collected by WorkSafeBC would likely be found inadmissible. Crown also said the owners likely had a strong case that they had exercised due diligence, which meant there was little chance of a successful prosecution.

In its statement, Crown said it could be shown that Babine could have foreseen spot fires and relatively small explosions from dust around equipment.

However, Crown said Babine would likely be able to establish "it did not foresee and could not reasonably have foreseen that sawdust could cause a catastrophic explosion of the nature that occurred on January 20, 2012."

Babine said it has learned lessons from the incident and is incorporating them in state-of-the-art dust-collection equipment at its rebuilt mill in Burns Lake.

A coroner's inquest is being held into the deaths of the two workers.

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Source

<http://www.vancouversun.com/babine+forest+products+disagrees+with+worksafec+Safety+Authority+conclusions/9418206/story.html>

HANDOUT 4:

Lakeland Mills Explosion That Killed Workers Ruled Accidental

CP | By Mark Nielsen, Prince George Citizen, The Canadian Press
Posted: 05/15/2015 12:21 am EDT Updated: 05/15/2015 1:59 pm EDT



PRINCE GEORGE, B.C. - A coroner's inquest into a deadly mill explosion in northern British Columbia has suggested that the RCMP develop a policy for investigating criminal negligence in the workplace as one of 33 recommendations aimed at preventing similar disasters.

A five-person jury made the recommendations after eight hours of deliberations on Thursday but ultimately concluded that the fatal 2012 blast at Lakeland Mills in Prince George, B.C., was accidental.

Accidental means the deaths were the result of unintended or unexpected events.

Workers Alan Little and Glenn Roche died from severe burns suffered during the Apr. 23 explosion, while more than 20 others were injured, many seriously.

The outcome brought little satisfaction to Roche's widow, Ronda Roche, who continued to call for a full public inquiry into the disaster at Lakeland Mills and into a similar explosion that levelled Babine Forest Products near Burns Lake on Jan. 20, 2012.

That blast also killed two people and injured more than 20 others.

"It is unfortunate that these proceedings did not assign fault or accountability," said Roche. "It has been an emotional journey for myself, my family and the injured workers."

She said the inquest confirmed many of her suspicions, from a decline in the level of the mill's cleanliness to running new equipment without installing accompanying waste disposal systems to management ignoring employees' concerns.

Most importantly, said Roche, management "found it reasonable to run a third shift without properly assessing the changes in the work environment, which ultimately led to excessive amounts of fuel within the facility."

The recommendations are directed at a variety of agencies, including WorkSafeBC, the RCMP, the Steelworkers Union, the mill owners and government.

They included the recommendation that the BC Ambulance Service conduct a review to ensure timely response, and for government to ensure that any mill construction or upgrade is made to the highest possible standard.

Greg Stewart, president of Sinclair Group, which owns Lakeland Mills, sat through virtually all of the inquest.

When asked about mill retrofits being made to the highest-quality measure, Stewart said he hopes the new mill shows Sinclair Group's commitment to a safer industry.

Stewart said a moment of silence is held every April 23 on both the morning and afternoon shifts in remembrance of what occurred, "and that will continue as long as Lakeland is around."

The jury also recommended that penalties be introduced in the Fire Services Act for failing to comply with the fire code, and that WorkSafeBC put more emphasis on workers' rights and that workers have the right to refuse unsafe work.

In all, the jury heard from 54 witnesses over 21 days of testimony, starting in early March.

The jury began deliberations on Thursday after listening to final comments from B.C.'s Chief Coroner Lisa Lapointe.

A coroner's inquest is tasked with determining cause of death but does not have the authority to assign blame.

http://www.huffingtonpost.ca/2015/05/15/inquest-into-fatal-mill-b_n_7288840.html

HANDOUT 5:

Questions to guide Discussion

1. What are your initial impressions of the Babine Forest Products case?
2. What was the position of WorkSafeBC with respect to the cause(s) of the BFP explosion and fire? What was the position of BFP with respect to their responsibility for the explosion and fire?
3. According to the sources, what workplace hazards were known to exist at the Babine Forest Products mill before the explosion?
4. Are you satisfied with the employers' (BFP) operational response to the wood dust hazard? i.e. did they demonstrate, as the Crown suggests, sufficient "due diligence" with regards to workplace safety? Explain with examples.
5. ***"Most accidents are preventable when viewed with the benefit of hindsight and knowledge gained after the fact. Had Babine foreseen the hazard, the company would have taken immediate steps to address the risk, and never have exposed our employees to that risk in operating the facility."*** (Company statement, January 2014). Are you satisfied with the employer's written response to the tragedy? Comment.
6. Workers at BFP had noted the unusually dry nature of the mill dust in the months preceding the explosion. Presumably they were also aware of the smaller explosions and fires that had occurred over time in the mill. Suggest reasonable steps workers might have taken to help prevent this tragic explosion.
7. As individuals and workers, what do we take away from these two mill explosions and fires beyond awareness of the tragic loss of four lives and serious injury to dozens of workers? ***In other words, why is this a significant case study to workers whether we labour in food prep in the service industry, as framers in construction, as nurses in a hospital, or as residential care aides in a care facility?***
8. Should there be a public inquiry into the two mill explosions? A public inquiry may be called by the Lieutenant Governor of B.C. in the event or issue is deemed to be of sufficient "public interest." Do the two mill explosions in 2012 satisfy the broad requirements of a public inquiry under the Public Inquiry Act of British Columbia?
9. Your turn. With a partner, take turns and share a story of a known workplace hazard and the response of you and your fellow workers to that hazard. What did you or your workers do to change the workplace environment? Are you satisfied with your response at the time i.e. "Yes, I am proud to say we did all we could to turn things around, or "What we could have been done that was not done?" or "Now that I am older/know better, here's what I would