Occupational Health and Safety Faller Serious Injury and Fatal Review 2009

June 19, 2009

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Executive summary

This report sets out recommendations of the WorkSafeBC internal faller serious injury and fatalities task team ("the group"), which reviewed and analyzed reports of 32 serious injury and fatal incidents that occurred from 2000 to 2008.

The group focused on 20 main points, which were considered possible contributing or underlying causative factors in these incidents. The most frequently occurring categories of contributing or underlying factors were:

- Lack of adequate planning
- Supervision, including lack of technical training knowledge by the supervisor
- Poor work procedures
- Poor decision making process

The working group concluded that the risk reduction focus cannot simply be on the faller but must also address all people involved in planning, supervision, and quality control.

The group also considered why no certified fallers died from workplace accidents for 24 months between 2006 and 2007. The group felt that the actions preceding those years brought an intense focus to fallers and the industry. This was done through the BC Faller Training Standard (BCFTS) certification grandfathering process which started in 2004 and completed late 2005. In addition, one of the twenty recommendations of the Forest Safety Task Force was intended to change WorkSafeBC's approach to compliance. This resulted in the Integrated Forest Compliance Strategy (IFCS). This strategy was intended to ensure that forestry stakeholders understood the cascading responsibilities at forest operations. The strategy used an audit type process to get a baseline of the industry. All of these intense activities on the forest sector heightened the awareness of all industry stakeholders for the need to stop the killing. Therefore, fallers were more likely to fall to the standard rather than revert to the practices

used before the standard was implemented. This intense focus by the industry and WorkSafeBC led to two years without the death of a certified faller.

As the intensity of focus on the worksite diminished, there has been a reversion to the "old ways", i.e., not industry best practices. As a result, the fatalities in the faller community resumed in 2008.

The current nature of the industry is also making quality control of falling and falling supervisor practices more difficult.

The group made seven recommendations (see page 13) in three areas:

1. Qualified faller supervisor
2. Faller compliance strategy
3. Quality control process

One of the recommendations is to develop and implement a compliance audit for falling standards in planning, training, supervision, and worker professionalism. The seven recommendations can be addressed through a phase three of the Integrated Forestry Compliance Strategy.

Introduction

Background

Between 1998 and 2002, WorkSafeBC accepted 26 faller-related fatal claims and over 1,400 faller injury claims. These unacceptable levels of fatalities and injuries accelerated discussions amongst the IWA (now United Steelworkers), the forest industry, and WorkSafeBC on what course of action could be taken to reduce these numbers. A review of the primary causes of these accidents pointed to a lack of standardized comprehensive training for fallers. The decision was made to develop a standardized faller training and certification program to ensure all fallers would receive the same high quality training. This training and certification program has become known as the BC Faller Training Standard (BCFTS).

The BC Faller Training Standard

The BCFTS was developed by the forest industry, IWA, and WorkSafeBC to meet the requirements of Occupational Health and Safety Regulation 26.21 and 26.22.

The purpose of the BCFTS is to ensure persons working as fallers have the knowledge, skills, abilities, work practices, and attitudes that will enable them to function as safe, productive fallers.

Fatal and serious injury incidents still too high

The seven certified faller fatalities in 2008, following two years with no fatalities, prompted WorkSafeBC to form an internal task team ("the group") to examine the reasons why these incidents were occurring.

Purpose & scope

Purpose

The purpose of this report is to identify the causes of faller fatalities and serious injuries since 2000 and recommend strategies to prevent recurrence. This report contains the findings and recommendations resulting from the group's review and analysis of 32 faller serious injury and fatal incidents. Some of the recommendations identify specific actions for WorkSafeBC to take; others identify specific actions for forest industry stakeholders to pursue.

Scope

The project's scope was to:

- Review and analyze the investigation reports of the 32 serious and fatal injury incidents involving fallers from 2000 to 2008
- Determine what the primary underlying causative factors were in 32 incidents that occurred between 2000 to 2008
- Develop recommendations for preventing similar incidents

Working group

The group (internal task team) was comprised of representatives from WorkSafeBC's regional services, fatal and serious injury investigations, and industry and labour services departments. The falling experience of the group's members totals more than sixty years, including experience as Qualified Supervisor/Trainers (QSTs).

Working group members

Bjarne Nielsen	Senior Regional Officer (SRO)	Courtenay
Terry Anonson	Occupational Safety Officer (OSO)	Courtenay
Al Yon	Investigations Officer, OSO	Nanaimo
Michael Bertrand	Investigations Officer, SRO	Richmond
Dave Lachance	Industry Specialist Forestry	Richmond

Report sponsors

Peter Newman	Central/North Vancouver Island Regional Prevention Manager
Tom Bailey	Industry and Labour Services Manager Forestry and Utilities
John Eldridge	Fatal and Serious Injury Investigations Manager

Methodology

1. The working group reviewed and analyzed investigation reports of 32 serious injury and fatal incidents that occurred over the eight-year period, 2000 to 2008. See Table 1 below for the number of incidents that occurred each year.
2. Four possible primary contributing and underlying causative factors were identified. An additional 20 factors were grouped under the four main headings. See Table 2 below for a list of the factors.
3. Each group member reviewed the 32 reports and completed a spreadsheet for each incident indicating which of the factors applied. (See page 16 for the total results.)
4. The group met several times to review the results and develop recommendations for consideration by WorkSafeBC and forest industry stakeholders.

Table 1 – Faller serious injuries and fatalities reviewed by year in British Columbia, 2000 - 2008

2000	2001	2002	2003	2004	2005	2006	2007	2008	Total
6	2	4	3	2*	6	0	2**	7	32

* 1 incident was a serious injury ** both incidents were serious injuries

Table 2 – Possible contributing and underlying causative factors

PLANNING	**ENVIRONMENT**
Hazard /risk assessment	Weather
Detailed RPF information	Employee
Written Procedures	Independent contractor
First aid	Faller decision/choice
	Substance use
WORK PROCESS	Hazard/risk assessment
Falling	Recognition and control
Bucking	Age
	Work experience
SUPERVISION	Experience with employer
Lack of knowledge	
Working supervisor	
Faller supervisor	
Hazard/risk assessment	

Findings

The group found that between 2006 and 2007, no certified fallers were killed in the province of BC. Before this period, there were 26 faller fatalities between 2000 and 2005. In 2008, seven certified fallers were killed.

The period 2000 to 2005 inclusive was a horrific period of faller fatalities in BC. This situation was a catalyst for the creation of the Forest Safety Task Force which recommended many changes to safety and infrastructure in the forest industry in BC. The Forestry Accord and the BC Forest Safety Council were created in response to the Task Force Report. Although created independently of the Forest Safety Task Force recommendations, the BC Faller Training Standard (BCFTS) was identified by WorkSafeBC as being an essential preventive measure to ensure industry best practices were the basis of all falling activity in the province. At the same time, WorkSafeBC developed the Integrated Forestry Compliance Strategy (IFCS) with the objective of establishing cascading safety responsibilities and accountability within the forest sector. The BCFTS implementation, combined with the intense focus of the IFCS during 2006, appears to correlate directly with the zero fatality result for certified fallers in 2006 and 2007. Intense pressure was brought to bear on the industry at that time to ensure the implementation of best faller practices within a quality control framework.

As time progressed, the intensity of compliance activity on safe work procedures lessened with the expectation that industry, itself, would focus on best practices in the felling community. The demographics and experience of the seven certified fallers killed in 2008 show that they had received certification after passing the BCFTS evaluation. They knew and had demonstrated the best ways to fall and buck trees. These workers had their training in falling before the implementation of both the BCFTS and the IFCS.

The fallers killed in 2008 were well-experienced but were not using industry best practices when they were killed. The investigations of these incidents in every case, but one, showed that inadequate procedures were being used instead of the BCFTS best practices, and those deficiencies led directly to the fatal results.

The current nature of the forest industry makes quality control of the faller and supervisory work processes more difficult. The shift towards small contractors (i.e., fewer than five workers), many of whom are owner/operators, makes the inspection and quality control process difficult for those parties responsible for providing oversight. If deficiencies in work performance are found, the ability to intervene and to effect positive change is confusing and inadequate.

Lack of adequate planning

Failure to adequately plan the work prior to work commencing was a major contributing cause in the following areas:

Hazard /Risk assessment

- In 28 of the 32 incidents reviewed, the planning done by all the parties for the activity did not completely identify the hazard(s) or risk(s) in advance of work beginning.
- In many cases, there was a lack of site-specific information (terrain, soil/slope stability, known hazards, wind patterns, wind thrown trees, natural and man-made hazards, species of danger tree and/or root rot). This information is not being provided to the fallers and supervisors who need it to safely perform their work.
- Supervisors and fallers are not walking the felling areas to identify the above-noted hazards.
- There is a culture which leads to a failure to recognize personal limitations. Fallers miscalculate the level of acceptable risk and participate in a culture of risk taking.
- Steeper terrain and more decadent wooded areas are increasing the risk faced in the work environment.

Poor site safety plans

- The cut block layout information currently does not consider all risks to fallers.

Written procedures

- Written procedures were either not reviewed by fallers prior to work commencing or were not available.
- Written procedures tend to be generic where site specific procedures are needed.

First aid

- First aid/emergency evacuation procedures were deficient in 9 of the 32 incidents.

Supervisor and faller

- Although both the supervisor and fallers in some instances may have completed the hazard /risk assessment prior to work, there was a failure to recognize the hazard, or they knowingly accepted the risk involved.

Supervision

The supervision (or lack thereof) was a significant contributing factor to the incident.

Lack of technical falling knowledge by the supervisor

- In 11 of the incidents, the person supervising on-site lacked knowledge of the technical requirements of safe falling methods.

Working faller/supervisor

- In 16 incidents, the supervisor was a working faller and therefore spent little time actually supervising the faller.

Hazard/risk assessment

- In 19 incidents, the supervisor did not do a hazard assessment or failed to identify the hazard(s) the faller was exposed to.
- Independent fallers (registered owner/operator) were not supervised to a level required by the Regulation.

Poor work procedures

Falling and Bucking

- Of the 32 incidents, 23 occurred during the act of felling the tree, eight occurred during the bucking activity, and one involved other activities. Industry best practices, as outlined in the BCFTS, were not used in the majority of accidents reviewed. It appears that the “old way” of falling trees (i.e., prior to the introduction of the falling standard) re-emerged as the way to do the job.

Poor decision making

As fallers began the tree felling process, the following shortfalls in their onsite, decision-making process significantly contributed to the accidents:

Hazard recognition

- In 29 of the 32 incidents, the fallers inadequately assessed the onsite risk before work commenced, or they chose to ignore the risks and proceeded with the work.

Faller evaluation and control measures

- Poor decisions were made about how to conduct the work and were a major contributing factor. This was gauged by discrepancies from best practices as outlined in the BCFTS.

Substance Use

- Substance use was present in 2 of the 32 reports.

Environment

Weather

- In three incidents, weather could be considered a contributing or underlying factor.

Slope/Terrain

- Eight of the 32 incidents can be considered as being affected by the slope of the terrain. In general, the steeper the terrain, the greater the risk to the faller.

Recommendations

The following recommendations represent the investigation team's consensus on strategies to reduce the risk of serious injuries and fatalities to fallers in BC. They can be addressed through a phase three of the Integrated Forestry Compliance Strategy. Please note, neither changes to the Workers Compensation Act nor the OH&S Regulation are required by these recommendations.

Qualified Faller Supervisor

1. Develop a clear definition of qualified faller supervisor as referred to in OH&S Regulation 26.22.1. The definition may need to take into account the differences between logging in the interior and on the coast.
2. Continue to support the BC Faller Training Standard (BCFTS) and faller supervisor certification initiatives.

Faller Compliance Strategy Audit

3. Conduct a Faller Compliance Strategy Audit (FCSA) for the falling operations similar to the 2006 Integrated Forest Compliance Strategy. See Table 3 on the next page for highlights of the contents of the proposed FCSA.
4. Ensure that all industry stakeholders comply with the new OH&S Regulation 26.2 – Planning and conducting a forestry operation. As the findings indicate, industry needs to improve planning of forestry activities, particularly when conducting site risk assessments and developing prevention measures for the site.
5. As part of the FCSA, review the occupational first aid requirements for isolated falling conditions.

Quality Control Process

6. Ensure employers use a quality control process for confirming that fallers demonstrate competency and comply with the BCFTS. (For example, employers could use a checklist periodically to check that a faller is competent to perform the work being undertaken, as required by OH&S Regulation 26.21.) When fallers are found not to meet the competency requirements of the BCFTS, remedial training will be required. Documentation of the competency evaluation and remedial training will be maintained.
7. Integrate into the BCFSC Safe Company Audit a comprehensive section on fallers achieving compliance with the BC Faller Training Standard.

Table 3 – Highlights of the proposed Faller Compliance Strategy Audit (FCSA)

PLANNING	
WorkSafeBC	**Forest Industry Stakeholders**
1. Faller Compliance Strategy Audit (FCSA) planning section questions	1a. Provide better information on and communication about cut block maps and cutting permits to the fallers (such as, but not limited to, terrain, soil/slope stability, known hazards, wind patterns, wind thrown trees, natural and man-made hazards, species of danger trees , root rot, etc.)
2. FCSA walk through questions	2a. Ensure a mandatory pre-walk through for supervisor and faller
3. FCSA alternate means questions	3a. Ensure an approved alternate means of removing danger trees is available to all falling sites (to be part of the overall planning process – under 26.2 all activities are planned)
4. FCSA specific written work procedures	4a. Provide site-specific, task-specific falling and bucking written safe work procedures for the type of harvesting systems being undertaken
5. FCSA question on faller supervisor	5a. Support the BC Forest Safety Council in their efforts to train and certify faller supervisors (bullbuckers)
DECISION PROCESS	
6. FCSA question on faller qualification determined by the employer, prime contractor, or supervisor on-site	6a. Industry to ensure faller competency checks on new job site if the faller's competency is not known for the level of activity being undertaken
SUPERVISION	
7. FCSA questions on supervisor qualifications	7a. To ensure the supervisors in charge of fallers are qualified
8. FCSA questions on regular supervision and inspection intervals	8a. To ensure independent fallers have regular supervision and inspections conducted by the prime contractors or owners
9. FCSA questions on whether the supervisor is performing the duties required before other falling duties	9a. To ensure the faller who is also the supervisor performs the supervisory duties first before falling duties
10. FCSA questions on evaluating the supervisor	10a. To ensure that the supervisors are inspected periodically by peers, employers, or prime contractors.

Appendix 1 -- Investigation report data points

Faller Task Team Report Data

32 - Serious injury and fatal data 2000 – 2008

Applicability of Contributing Factors			Contributing Factors
PLANNING			
Yes	No	n/a	
28	4	0	Hazard/risk assessment
18	11	3	Detailed RPF information
20	11	1	Written procedures
9	23	0	First aid
SUPERVISION			
Yes	No	n/a	
11	17	4	Lack of knowledge
16	13	3	Working supervisor
16	13	3	Faller supervisor
19	9	4	Hazard/risk assessment
WORK PROCESS			
Yes	No	n/a	
24	5	3	Falling
8	22	2	Bucking
ENVIRONMENT			
Yes	No	n/a	
28	1	4	Faller decision/choice
2	30	0	Substance use
29	1	1	Hazard/risk assessment
24	5	1	Recognition and control
3	27	2	Weather
15	13	4	Employee
8	14	10	Independent contractor
			Average Age: Approximately 45 years old
			Average Work experience: Approximately 22 to 27 years falling experience
			Experience with employer: Approximately 1-2 years