

BC Forest Safety Council

Three-Point Contact

Community-Based Social Marketing Project

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Appendix A - Survey Results

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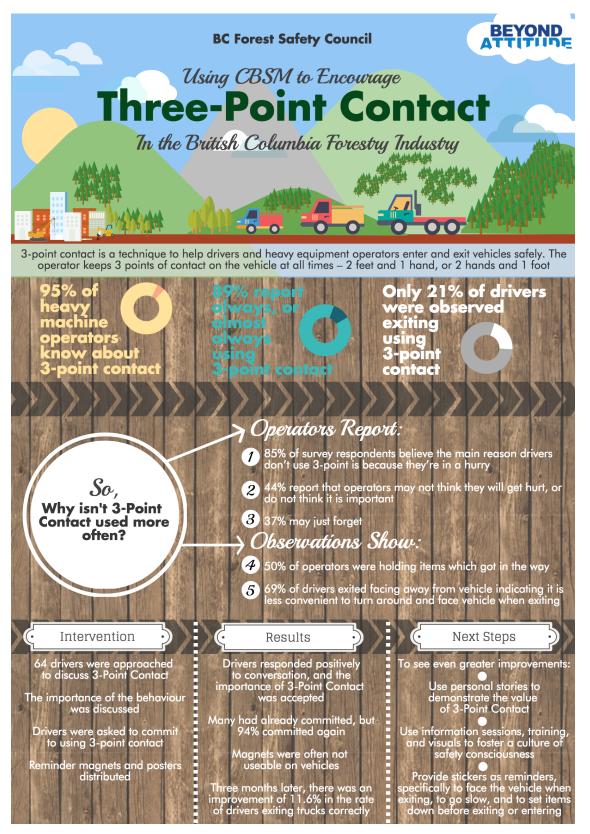
1. Introduction

The BC Forest Safety Council (BCFSC) is committed to promoting the safety of the industry's workers and continually reducing injuries and lost time. To assist in the achievement of those objectives, BCFSC contracted with Beyond Attitude Consulting to develop a Community-Based Social Marketing (CBSM) program to apply the science of behavioural psychology to occupational health and safety.

This report describes the methodology, application and results of a CBSM program to reduce the incidence of injuries due to falls through increased adherence to proper 3-point contact exiting and entering of vehicles.

2. Summary Infographic

The following infographic provides an overview of the project including methodology and findings.



3. Community-Based Social Marketing

Community-Based Social Marketing (CBSM) is, simply, using behavioural psychology to get people to perform particular tasks. In safety, it means using psychology to promote safe work habits, and it builds on the other efforts that are usually taken to reduce injuries at work. CBSM targets individual behaviours, and does not assume that people will do something just because they think it is the right thing to do.

An example of where CBSM could be applied is in blood donation. In Canada, almost everyone believes blood donation is a good idea and people are well aware of the benefits of having an inventory of blood available to hospitals and medical professionals. However, that attitude and understanding has not translated into widespread donation, as only 3.5% of Canadians give blood.

CBSM programs identify and remove the barriers that might prevent a person from adopting a preferred behaviour while incentives and benefits are promoted. Commitments to perform the behaviour are sought, and peer pressure is employed to create an expectation that the behaviour will be performed.

Awareness ≠ Behaviour

An important principle of CBSM is that awareness does not necessarily translate into behaviour. Therefore the CBSM practitioner does not focus exclusively on developing awareness, but works specifically on fostering the behaviour desired.

Identify and Remove Barriers

After a preferred behaviour is selected, CBSM programs include a research stage, usually comprising

- A literature review;
- A survey;
- Focus groups; and direct observations.

An important element of the research is to determine both barriers that prevent people from performing the behaviour and perceived benefits that encourage people.

An effective CBSM strategy seeks to remove barriers to performing the behaviour. This may include lack of information (e.g. what to recycle and how to prepare it for collection), missing infrastructure (e.g. no handles to grab to use 3-point contact when entering a vehicle), incorrect perception (e.g. mistaken belief that idling a vehicle engine uses less fuel than stopping it and restarting it). After identifying the common barriers, the CBSM practitioner develops a method of removing them.

Conversely, benefits to performing the behaviour are promoted (e.g. not idling an engine saves money and makes our air cleaner; taking care when entering and exiting vehicles reduces the risk of getting hurt and losing time at work).

Direct Contact

Traditional communications approaches try to reach large masses of a target population through mass-advertising and publicity, such as radio, TV and newspaper ads, mail-drops, billboards, etc. CBSM campaigns seek to reach out to individuals through one-on-one discussions. During these conversations, practitioners remove barriers, promote benefits, and seek commitments.

Commitments

When people commit to performing a behaviour, they are much more likely to follow through with it than if they had not made the promise. This fundamental principle of behavioural psychology is an important part of CBSM, and direct contact conversations always include a request for a commitment to perform the behaviour (e.g. "Will you donate blood this week?")

Research has proven that written commitments are stronger than verbal commitments, and public commitments are better still. Therefore, practitioners seek to upsell the commitment during direct contacts.

Social Norms

Social norms are the expected and accepted behaviour in a community (e.g. picking up after your dog, not butting into a line/queue, not invading personal space, not littering, etc.) Peer pressure supports these social norms, as others frown on people who break them. This peer pressure has the effect of causing people to conform to socially acceptable behaviour.

CBSM programs seek to establish social norms for preferred behaviours. This is accomplished through several methods, including:

- Providing feedback on the increasing numbers of people performing the behaviour;
- Promoting the benefits of the behaviour;

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- Informing people that their friends/family/colleagues have adopted the behaviour; and,
- Achieving enough people performing the behaviour to create a tipping point, where more people are convinced to do it because it seems most everyone else is.

CBSM Tools

Prompts

Prompts remind people to perform behaviours. They can take the form of small signs or magnets that remind people (e.g. a small sign at a door that reminds people to turn out the light), posters, or even reminders on smartphones. They support the commitments and the social norms created.

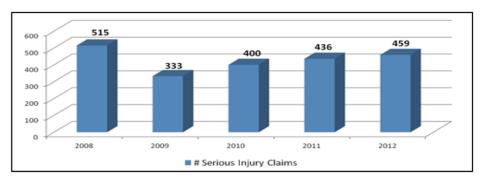
Effective prompts are placed such that they are visible where and when people are expected to perform the behaviour. By providing appropriate information (e.g. how to perform 3-point contact properly) they can also remove barriers of lack of information.

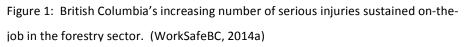
Feedback

An important element of CBSM is providing feedback on the behaviour adoption and results. It helps to make the behaviours stick, and for new people to adopt it. A good example is the United Way thermometer often seen in communities, which provides feedback on the amount of money that members of the community have donated to the organization. It provides visual feedback to those who have given money of the impact they have helped make, and suggests to others who have not yet donated that many of their fellow community members have, and perhaps they should as well.

4. Choosing The Behaviour

Great strides have been made in improving workplace safety in BC's forest sector, with general trends of reduced fatalities and serious injuries, and improved worker knowledge and awareness of safe-work techniques. However, 2012 was a difficult year, as there were twelve industry-related fatalities, despite efforts being made to improve overall workplace safety. In addition, there has also been a gradually increasing rate of serious workplace injuries since 2009 (Figure 1).





There are a variety of areas of safety concern to which the application of behavioural psychology through Community-Based Social Marketing (CBSM) approaches could be applied and have a meaningful impact, reaching a large number of people.

Falls are the single largest source of injury on-the-job (WorkSafeBC, 2014a). Data shows that from 2008-2012, almost 30% of all injuries and fatalities were due to falls, either at elevation (15%) or at same level (13%) (Figure 2).

Due to the frequency of injuries due to falls, the British Columbia Forest Safety Council (BCFSC) has put a focus on preventing injuries from falls. Many of the injuries sustained from falls happen when workers are entering or exiting a vehicle. There are also long-term health risks associated with repeatedly jumping in and out of a vehicle, because the bones, joints, and muscular tissue absorb the impact. Over time, this can result in repetitive strain injury.

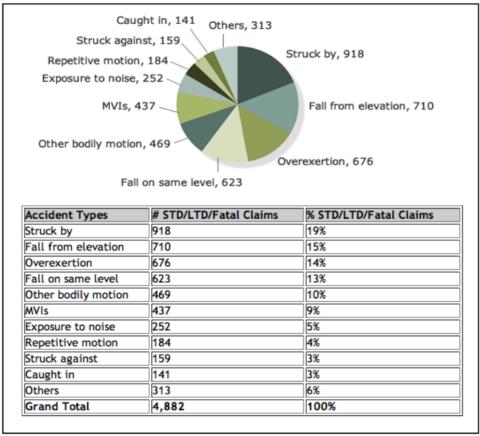


Figure 2: British Columbia's forest industry injury claims, 2008-2012. Claims include

short-term disability, long-term disability, and fatalities (WorkSafeBC, 2014a).

Three-point contact is a technique promoted to truck drivers and heavy equipment

operators such that they enter and exit their vehicles safely. The operator keeps three points of contact on the vehicle at all times – two feet and one



hand, or two hands and one foot (Figure 3). This technique helps reduce the risk of slips and falls, while also helping prevent repetitive strain injuries. This behaviour was chosen as the target behaviour for this CBSM project because of its potential for reducing injuries.

Three-point contact has been promoted by WorkSafeBC and is accepted by workers as a good safety practice. Fostering better 3-point contact compliance could lead to improved safety and reduced injuries, and serve as a successful demonstration of how CBSM techniques could promote other safe behaviours. Success could lead to further positive behaviour change, since workers may be encouraged to take part in this initiative and others where they have seen an impact. BC Forest Safety Council 3-Point Contact

5. Research

The first step in developing a CBSM program is to conduct research. Through such techniques as literature reviews, surveys and focus groups, an assessment of knowledge and attitude within the target audience towards the desired behaviour is determined. Also, barriers to performing the behaviour and perceived benefits are identified. These findings are then used to inform the development of a program to encourage behaviours by breaking down barriers, promoting benefits, securing commitment and creating social norms.

In this project, baseline research at the beginning of the project included an online survey and observations of baseline behaviours. After the CBSM approach was developed, more observations were recorded during the in-person interventions with drivers. Several months afterwards there were further observations of drivers entering and exiting vehicles, in order to evaluate the impact of the interventions.

Online Survey

An online survey was conducted in order to understand current knowledge and awareness of 3-point contact practices, assess the reported conduct of the behaviour, and to determine what barriers there might be to more consistent compliance. The survey also determined how best to communicate with drivers to encourage the performance of 3-point contact. The survey was made available online through the BCFSC website and was also distributed by hand by people involved in the forest sector. In order to encourage participation in the survey, respondents were given an opportunity to win a waterproof Hi-Vis jacket.

All responses were entered into a database and analyzed using statistics software. In total, 93 surveys were collected, with a 76% completion rate. Respondents included both those who manage heavy equipment operators (61% of respondents) and heavy equipment operators themselves (59%). Of the heavy equipment operators, 78% have been doing so for over ten years.

The survey determined that awareness of 3-point contact is high. Ninety-five percent (95%) of survey respondents said they were familiar with the term "3-point contact", and all respondents who completed the relevant section of the survey were able to describe the practice and demonstrate an adequate understanding of the term. Respondents reported that they learned about 3-point contact most frequently through on-the-job-training sessions (68%), as well as safety posters, signs, or leaflets (27%).

Table 1: Survey question - How many operators like you do you think use proper 3-point contact when getting in and out of their truck or machine? Would you say.... Table 2: Survey question - How often do you feel that you get in or out of your truck/machine using 3-point contact?

Response	Percentage	Count	Response	Percentage	Count
All	5%	4	Always	40%	34
Most	54%	47	Almost always	49%	41
About half	33%	29	Sometimes	5%	4
Few	6%	5	Rarely	1%	1
None	0%	0	Never	0%	0
Don't Know	2%	2	Don't Know	5%	4
	Total Responses	87		Total Responses	84

Respondents were asked to provide their perception of the frequency of 3-point contact behaviour by other forestry workers, and how often they perform the behaviour themselves. The two similar questions were asked to reduce the effect of bias associated with survey respondents wishing to be seen to answer in a manner that puts them in a good light. The results indicate room for improving the frequency of 3-point contact, with about 40% of respondents believing that half or fewer of forestry workers perform the behaviour. Drivers were more likely to report that their own compliance with 3-point contact was greater than what they thought it was with others. Still, 55% of respondents indicated that they did not always use 3-point contact when entering and exiting vehicles.

The survey also identified reasons why equipment operators may not use 3-point contact. Eighty-five percent (85%) of survey respondents believe the main reason drivers don't use 3-point is because they're in a hurry, suggesting that this is the primary barrier. Other significant barriers include a perception of low risk, with 44% reporting that operators may not think they will get hurt, or do not think its important (38%), while a significant portion may just forget (37%).

To identify the best ways to overcome the barriers that prevent operators from using 3-point contact, respondents were asked what would convince operators to use it, and also the best ways to reach and ultimately get them to use 3-point contact. Some responses were the same for each question; but the answers did vary between the two. For example, several respondents said operators would be convinced to use 3-point contact only *after* they fell or got hurt. However, they didn't mention accident, incident, or injury when asked the best way to reach an operator to convince them to use 3-point contact. Instead, they suggested more perennial communications through meetings, training, and education would be the best ways to reach and convince them to use 3-point contact. Other responses included:

- Using alerts and reminders in and around the vehicles to prompt drivers to use 3-point contact
- Improving handles and steps for entering and exiting vehicles
- Penalizing through pay reduction for non-compliance

Interestingly, each of those responses are techniques consistent with Community-Based Social Marketing.

The final two questions of the survey focused on gathering information about the respondent's experience with workplace injuries. First, they were asked if they had ever been hurt at work, specifically while getting in and out of their vehicle. Eight percent (8%) of respondents indicated they had. Finally, respondents were asked if they ever had a lost-time workplace injury – not just the ones sustained getting into or out of a vehicle. Here, 27% said they have been hurt while at work. The majority of those respondents have over ten years' experience operating equipment.

More information on the findings of the survey can be found in Appendix A.

Baseline Observations

In addition to the self-reported data collected through the survey, direct observations were made to collect a sampling of baseline practices, and analyze potential barriers on the ground that may relate to the reported barriers of being in a rush, not thinking the behaviour is important enough, and forgetting.

Observations were made by recording video footage of the entries and exits of truck drivers who arrived at one of Canfor's scale shacks in Prince George. The recordings took place over two days, on February 26th and April 2nd, 2014. A total of 54 observations of drivers exiting vehicles and 54 of drivers entering vehicles were

recorded and analyzed to determine the rate of compliance with 3-point contact. Of those, 42 of each could be clearly evaluated.

The recorded observations indicated that drivers were far less likely to exit their vehicles with 3-point contact than they were to enter them properly. Out of 42 exits, 9 were done properly (21.4%), and 33 were not (78.6%). When entering, the numbers were better. Out of 42 entrances, 41 were done correctly (98%), and 1 was not (2%). The higher frequency of correct entrances compared to exits is likely due to drivers needing to hoist themselves up into their seats. When exiting, they have the benefit of gravity working for them rather than against them.

Notes were taken on the drivers form and state while exiting the vehicles, where most of the incorrect behaviour could be identified. Three frequent errors were observed: exiting the truck facing away from the vehicle, holding items, and rushing. The most common error was for drivers to be facing forward, instead of facing the truck. On average over the two days, 69% of drivers exited facing forward instead of facing their trucks. The next most significant error was to be holding items while exiting. It is difficult to maintain 3-point contact while holding items, and on average, 50% of drivers were holding something in their hands when entering or exiting vehicles. Finally, on average, 12% of drivers were visibly rushed in a way that had an impact on their performance of 3-point contact. Typically two out of three of these errors were performed together.

Weather conditions may have an influence on safety practices. While 72.2% of truckers exited incorrectly when it was slippery and cold (on February 26), 83.3% exited incorrectly while it was only raining (April 2). Drivers were somewhat more likely to exit facing their trucks when it was slippery out, with 61% exiting facing the wrong way in the poor weather conditions, compared to 75% on a nicer day. Drivers may be more careful when they perceive the risk of hurting themselves to be greater.

Observed vs Reported Behaviour

It is useful to note the difference between reported behaviour and observed behaviour. In the survey, 89% of respondents said they "always" or "almost always" use 3-point contact. In observations, only 21% exited properly. This is a significant variation of 61 percentage points, and cause for further action.

Survey respondents reported that when they do not comply with 3-point contact protocol, it is primarily because they are in a hurry, and to a lesser degree, because of low perceived risk, or forgetfulness. However, relatively few drivers were observably rushing. More significant is the fact that 50% of drivers were holding items that deterred the use of 3-point contact. That the value of the mandated

behaviour is overridden by the small inconvenience of not carrying something while entering or exiting suggests that drivers may place a low value on performing the behaviour.

Interventions

Interventions were done to test methods employed to break down barriers and motivate drivers to use 3-point contact, as well as testing the best practice for reaching the target group. It was established through the survey that drivers did not need to be educated on 3 points of contact as a practice, but did need to be convinced of it's importance, and given a tangible reminder. The Community-Based Social Marketing approach to fostering preferred behaviour is through personal contact.

On December 3rd, 2014, a consultant attended the scaling shack at Canfor in Prince George. Over the course of 7 hours, 64 drivers were approached about 3-point contact. Their behaviour getting in and out of the vehicles was also observed. After exiting the vehicle drivers were asked questions similar to those in the survey. All were asked to commit to using 3-point contact in the future, and some were asked to make a written commitment. Drivers were also given a chocolate as a token of thanks for the discussion.

This outreach was augmented by trucking contractors who promoted adoption of proper 3-point contact procedures at their safety meetings and in their regular safety discussions. The contractors also collected verbal and written commitments from their drivers as part of their promotion of the proper behaviour. In order to make those commitments even stronger, they were made public by the publishing of the names of the drivers in the BSFSC magazine, Forest Safety News.

Both the responses to the questions and the results of the observations are very closely comparable to the survey data. Observations showed that only 42% of drivers got out of their vehicles correctly, while 100% got in correctly. Ninety-eight percent (98%) of drivers said they knew what 3-point contact was and the same amount said they used this process most of the time. When 3-point contact is not used, 72% of the drivers answered that it is due to being in a hurry, 20% responded that they did not use it because of bad habits, and 8% had intentional reasons for exiting their vehicle alternative ways. Again, the claim of being in a hurry stands somewhat in contradiction to the drivers' willingness to stop for friendly and open conversation, though it was carried out as they continued working. This suggests that the issue of being rushed may be a matter of priorities.

Commitment Strategy

When asked to commit to using 3 points of contact, many drivers mentioned they had already committed (likely through the efforts of their respective companies as described earlier) and that previously distributed reminders helped them to think safely. Ninety-four percent (94%) of the drivers committed to remember to use 3-point contact; the remaining 6% said they were unwilling to change since they had not been hurt and had been driving for over 30 years.

Communications

In addition to the interventions, more posters and magnets were left at the scale shack for the scalers to offer to drivers. However the distributed magnets may not always be functional since some drivers reported that trucks were mostly plastic and had limited suitable places to stick the magnet.

6. Observed Results

Following the interventions, video recording and analysis was completed again over three days, on March 5th, 9th and 10th, 2015. March 5th was rainy, slushy and slippery, while March 9th and 10th had better, dry weather.

Overall, there was an improvement of 11.6% in the rate of drivers exiting trucks correctly. The rate of drivers entering the trucks correctly remained high at 88%.

There was an improvement across the board with regard to the types of errors made when exiting, with 16% more individuals facing the truck, 17% fewer holding items in their hand, 4% fewer were rushing, and 1.5% fewer were using no hands.

The impact of weather conditions could not be considered since the March 5th sample size includes only 5 vehicles.

These results indicate that the intervention had some success, however, there is still significant room for further improvement with 67% of drivers still exiting incorrectly, and an increased rate of individuals entering incorrectly. The same types of errors persist upon exiting vehicles, including facing away from the vehicle, and holding items in a way that inhibits good practice of 3 points of contact. This indicates that there needs to be some modification of the method of addressing these issues within the CBSM program going forward.

7. Recommendations

The improvements in driver behaviour show that change is possible, but there is still an obvious gap between understanding and compliance. The results of the survey, intervention, and video recording observations before and after the intervention have provided data to use in evaluating the existing safety practices of truck drivers entering and exiting their vehicles. The data also reveals motivations for disregarding the use of 3-point contact, including barriers, all of which must be understood in order to create a custom CBSM Strategy that will positively influence their behaviours going forward.

Successes & Opportunities for Improvement

Although forestry workers have a clear understanding of 3-point contact, it may not be understood by all operators that performing the behaviour correctly requires the person to be facing the vehicle. Therefore future education should stress this, and commitments should include the detail of doing so facing the correct way.

The intervention and distribution of posters and magnets was in line with suggested techniques from the survey and resulted in some improvements, however the intervention alone is not enough to convince all truck drivers to use 3-point contact at all times. Many drivers have made commitments, even written ones, to perform 3-point contact, yet drivers frequently do not. Reminders are not enough on their own. Going forward it will be important to continue to promote the importance of safety (the real and present danger of incorrect vehicle entrance but particularly exiting), and addressing ways that small barriers, like having a coat in one hand, can be overcome.

Altering the Social Norm

The various investigative methods reveal that the difference between the selfreported use of 3 points of contact and observed behaviours is dramatic. This difference indicates that respondents are aware that this is the preferred response, and are biased to reporting their own behaviour in a positive light. This phenomenon of respondents over-reporting that they are doing the correct behaviour is known as social bias. In this case, it demonstrates that respondents already feel that others (the intervener and survey administrator) expect them to be conducting 3-point entrances and exits, and they are susceptible to the peer pressure that can be developed. If forestry workers believe that most people in the industry use 3-point contact as a routine practice, and that it is an esteemed and respected practice, they will be more likely to use 3-point contact themselves. Respondents to the survey commented repeatedly that it was necessary to make 3-point contact common habit, and change the work culture.

Public commitment and peer pressure are powerful aspects of social norm development. There are means to enhancing their effectiveness in fostering 3-point contact:

- Make the commitment more public. Put a graphical sticker on the side or back of the vehicle that says "I stay safe by using 3-point contact." With a message like that clearly visible on the vehicle, there will be increased pressure on the driver to conform to the practice;
- Announce the commitments at the point where it is desired. A scrolling sign at the scale shack displaying the names that have committed to 3-point would serve as a reminder and a public commitment, right at a place where 3-point contact should be employed;
- Acknowledgement of drivers doing it correctly. Some photos, displayed at the shack and other areas showing drivers (with their permission) doing it correctly, would show that their peers are using 3-point contact and that people are watching and paying attention to what the driver is doing.

Other Methods of Supporting the Norm

A social norm can be further established here by increasing awareness of real risks, which will enhance the attitude around its importance. The recognition of the importance of this behaviour though, will be re-enforced by a workplace culture where drivers routinely correct other drivers when they see unsafe behaviours.

Most frequently, survey respondents reported that not getting hurt (or conversely, being aware that they could be hurt) was the greatest incentive for using 3-point contact. In order to make sure people are aware of the pitfalls of not using 3-point contact, workers should be introduced to injury statistics, and hear testimonials of coworkers who have been hurt which demonstrate how easy it is to get injured this way, though unexpected. They should also be told how using 3-point contact has resulted in fewer injuries, as such data becomes available. This can occur through training, and through further CBSM interventions.

However, a behaviour should not have to routinely result in severe injury for workers to feel justified in exercising caution. Promoting a workplace culture where peers are supportive of cautious behaviour, and frown upon unsafe practice is important.

The pilot project results do not include the effects of peer pressure through the adoption of such a social norm. This lack of influence from peer pressure is typical in CBSM pilot projects, as there is insufficient time to establish the social norm. Upon successive adoptions and promotions of safe practice, the influence of peer pressure usually picks up momentum. Interventions going forward may be more successful if drivers are intercepted, while possible, while still in their vehicles such as at a toll location, or drive in service stations, etc. if possible. This way, truck drivers may exit their vehicles after the intervention, and this will psychologically reinforce the practice of proper exiting. The exit has been shown to be the more problematic practice and yet during the intervention in the pilot project, the drivers only had to get back into their vehicles after having the conversation.

Ultimately though, the pressure has to become internal, rather than from a temporary individual from an external company. Respondents clearly stated that the best way to reach them was by education and safety talks given to them at safety meetings and tailgate talks, where they believed examples should be used and the 3-point contact behaviour should be "drilled into them." Employing CBSM principles such as commitment strategies will help to do that.

CBSM practices can also continue to encourage the development of the social norm through the use of decals, posters and stickers that remind drivers and normalize safe behaviour. Some drivers reported that magnets could not adhere to plastic truck parts in some vehicles. Going forward, stickers would likely be more effective. Content should promote peer behaviour monitoring, and emphasize that the correct behaviour is smart and a best practice. Under this positive social pressure, old worker habits can begin to shift.

Overcoming the Small Barriers & Providing Reminders

If 3-point contact is supported by facts, testimonies, a social norm and a safety conscious work culture, small barriers such as having items in hand while exiting and entering vehicles should be overcome. However, drivers will still benefit from reminders in their view to address reoccurring barriers. The three main behaviour errors are exiting the vehicle facing forward instead of facing the truck, carrying things in hands while entering/exiting, and being in a rush.

These three issues can be identified on reminder stickers adhered to the interior of the driver door, and posters placed where the drivers are exiting and entering their vehicles. Phrases and representations to remind drivers not to fall into these habits could include the following:

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Behaviour	Phrase	Graphic
Facing the wrong way	Turn Around!	
Holding Items	Hang On: Set Your Things on the Seat!	Graphic of a person doing proper 3 point contact with a calm smile, and a jacket and
Rushing	Take Your Time	papers resting on drivers seat

The sticker might also include a general warning phrase, and a place for a signed commitment. A visibly present signed commitment will be a stronger incentive than the primarily verbal commitments requested during the first intervention.

The combination of enhanced peer support, closing the knowledge gap, and continuing to provide reminders will help with breaking habits, general resistance, and forgetfulness. It will also offer encouragement to overcome specific inconveniences, which may subconsciously interfere with and override or downplay the importance 3-point contact.

8. References

WorkSafeBC. 2014a. *Forestry Industry Claims Statistics 2008-2012*. Accessed 18 February 2014: https://www2.worksafebc.com/Portals/Forestry/Statistics.asp

WorkSafeBC. 2014b. *Three-point Contact Every Time.* Accessed 18 February 2014: <u>http://www2.worksafebc.com/i/stickers/jpg/PS10.jpg</u>

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Appendix A - Survey Report

i. Purpose of this report

Beyond Attitude Consulting prepared this data analysis report in conjunction with the BC Forestry Safety Council. The objective of the survey was to determine the use of 3-point contact by forestry workers in BC.

The data was collected from surveys completed by BC forestry workers in the fall of 2013. FluidSurveys, an online application, was the tool used to compile data. This report provides an overview of the data collected during the survey process.

This survey accompanies a community based social marketing (CBSM) strategy, that is, a practical guide for increasing the use of 3-point contact among forestry workers in BC. The results of this survey can be found at the end of this data report, as Appendix I.

1. Overview of survey completion, participants

A total of ninety-three surveys were collected, with a 76% survey completion rate. Sixty-one percent of respondents manage those who operate heavy equipment. A total of 59% of respondents operate heavy equipment as a part of their job, 78% of whom have been doing so for over ten years (Table 2). There are several types of specific heavy equipment survey respondents operate as a part of their job (Table 1). "Other" types of equipment specified by respondents include:

- Dozer
- Hoe
- Dump truck
- Cable system
- Excavator
- Wagner, wholeloader
- D6R Cat
- Disc trencher
- Grader
- Crawler tractor

Response		Chart		Percentage	Count
Logging truck				25%	13
Low-bed				6%	3
Skidder, processor, buncher	feller-			28%	15
Other, please specify				42%	22
		Total Resp	onses		53

Table 1 – Survey responses: What type of heavy equipment do you run?

Table 2 – Survey responses: How many years have you been operating machinery or logging trucks?

Response	Chart	Percentage	Count
Less than 1 year		6%	4
Less than 5 years		5%	3
Less than 10 years		11%	7
More than 10 years		78%	50
	Total Responses		64

2. Understanding of 3-point contact

Ninety-five percent of survey respondents said they were familiar with the term "3-point contact". All respondents who completed this section of the survey were able to demonstrate an adequate understanding of this term. The main ways respondents learned about 3-point contact were on-the-job-training sessions technique (total: 63), as well as safety posters, signs, or leaflets (total: 25) (Table 3). Other ways respondents specified they learned about this technique include:

- Off-the-job training sessions
- General industry experience and exposure

Table 3 - Survey responses: Where did you receive your information about 3-point contact? (Check all that apply)

Response	Chart	Percentage	Count
On-the-job training		73%	63
Off-the-job training session		16%	14
Safety poster, sign or leaflet		29%	25
Other, please specify		27%	23
	Total Responses		86

3. Use of 3-point contact in the workplace

To mitigate self-imposed participant biases, survey respondents were asked in two different questions to indicate how often they believe 3-point contact is used. The first question asked: "How many operators like you do you think use proper 3-point contact when getting in and out of their truck or machine?". The second question asked the same thing in a different way: "How often do you feel that you get in or out of your truck/machine using 3-point contact?"

This is a common used in surveys to help determine what the true answer to the question is. We found the responses varied drastically between these two questions. The differences lie between the identified perception of others' behavior patterns, and the perception of their own behavior patterns (Table 3).

When asked about their perception of other drivers' use of 3-point contact, 87% of respondents believed others use 3-point contact Most (47 responses) or About half (29 responses) of the time. Conversely, when asked about their own use of 3-point contact, 89% of respondents indicated they use 3-point contact Always (34 responses) or Almost always (41 responses). We believe the true answer likely lies somewhere in between the perception of others' and their own use of 3-point contact, likely closer to the responses given regarding the perception of others' behavior.

Table 3 – Survey responses cross tab evaluation: Use of 3-point contact of other operators vs. own use

→ [Insert cross tab table on fluid surveys *haven't figured out how to export yet]

4. Perceived barriers preventing use of 3-point contact

Eighty-five percent of survey respondents believe the main reason drivers don't use 3-point is because they're in a hurry. This leads us to believe that this is the primary barrier preventing drivers from using 3-point contact to enter and exit their vehicles safely (Table 4). Other barriers specified by survey respondents include:

- Habit
- Poor work-safety attitudes/Work culture
- Carrying an object/no free hands
- Vehicles not properly equipped for entry and exit (Lack of infrastructure to help drivers use 3-point contact)

Table 4 – Survey responses: What might stop operators from using proper 3-point contact? (Check all that apply)

Response	Chart	Percentage	Count
Don't know about it		13%	10
Forget to do it		37%	29
In a hurry		85%	67
Don't think it is important		38%	30
Don't think they will get hurt		44%	35
Other, please specify		10%	8
	Total Responses		79

5. Removing barriers for using 3-point contact

In order to help us identify the best ways to remove barriers preventing operators from using 3-point contact, respondents were asked to identify the most effective ways to convince operators to use it, followed by the best ways to reach and ultimately get them use 3-point contact.

Some responses were the same for each question; but the answers did vary between the two. For example, several respondents said operators would be convinced to use 3-point contact only *after* they fell or got hurt. However, they didn't mention accident, incident, or injury when asked the best way to reach an operator to convince them to use 3-point contact. Instead, they suggested more meetings, training, and education would be the best ways to reach and convince them to use 3-point contact. Other responses are summarized by the following list:

- Using alerts and reminders in and around the vehicles to prompt drivers to use 3-point contact
- Improving handles and steps for entering and exiting vehicles

- Threatening of pay reduction as a consequence of non-compliance

6. Workplace injuries

The final two questions of the survey focused on gathering information about any respondents' experience with workplace injuries. First, they were asked if they every got hurt at work, specifically while getting in and out of their vehicle. Eight percent of respondents indicated they fell into this category.

Second, and lastly, respondents were asked if they ever had to take time off of work due to any kind of workplace injury – not just the ones sustained getting into or out of a vehicle. Here, 27% said they have been hurt while at work. The majority of those respondents have over ten years experience operating equipment. These respondents think being in a hurry, and thinking they can't get hurt, are the main barriers preventing operators from using 3-point contact.

7. Summary of findings

The results of this survey suggest BC forestry workers are conscious of 3-point contact, and know how it can be used for entering and exiting vehicles. Most of their information about 3-point contact comes from on-the-job training sessions, but include other avenues, such as publicized material, and general experience in the industry. However, just because it's a well-*known* technique, does not mean it's a well-*used* one. Respondents didn't think other operators use 3-point as much as they use it themselves, and, one of the ways operators will finally use 3-point contact every time they enter or exit a vehicle only after they get hurt. Additionally, a further 27% of respondents indicated they have been hurt at work another way. Even though the perceived and personal use of 3-point contact is quite high, there is still an obvious gap between understanding and compliance.

Being in a hurry, not thinking its important, not thinking they can get hurt, or simply forgetting seem to be the biggest barriers currently preventing operators from using 3-point contact. The one thing in common these barriers share? A lack of conscious awareness of the task at hand: getting into and out of a vehicle safely. Respondents felt more on-the-job training would be a good way to increase overall awareness of the importance of using 3-point contact. They also addressed other barriers that could be addressed – like adding more steps or handles to the vehicles to make it easier for drivers to get in and out of their vehicle, or, adding decals, signs, and/or warning systems to the vehicle as 3-point contact reminders.

Further recommendations based on the results of this survey can be found within the associated CBSM strategy.

APPENDIX 1: Survey responses

BC Forest Safety Council CBSM Survey Report

(Completion rate: 76.24%)

Are you a supervisor or manager of people who operate heavy equipment (logging truck, low-bed, machine) as part of their work?

Response	Chart	Percentage	Count
Yes		61%	57
No		39%	36
	Total Responses		93

Do you operate heavy equipment (logging truck, low-bed, machine) as part of your work?

Response	Chart	Percentage	Count
Yes		59%	54
No		41%	37
	Total Responses		91

What type of heavy equipment do you run?

Response	Chart	Percentage	Count
Logging truck		25%	13
Low-bed		6%	3
Skidder, processor, fel buncher	ler-	28%	15
Other, please specify		42%	22
	Total Responses		53

What type of heavy equipment do you run? (Other, please specify...)

#	Response
1.	Lowbed. Dozer. Hoe.
2.	Cable system
3.	? truck
4.	dozer/hoe
5.	D6R Cat
6.	dump truck/hoe
7.	excavator/dozer
8.	excavator/dozer
9.	all types of road building equipment
10.	all logging & construction machinery
11.	excavator/dozer
12.	excavator
13.	excavator
14.	wagner, wholeloader
15.	skidder, disc trencher
16.	All equipment and lowbed
17.	grader
18.	crawler tractor
19.	hoe chucker
20.	hoe, loader
21.	cat
22.	grader

Are you familiar with the term 3-point contact?

Response	Chart	Percentage	Count
Yes		95%	83
No		5%	4
	Total Responses		87

What is your understanding of 3-point contact?

#	Response
1.	Always three point contact with vehicle
2.	three points of contact while entering or exiting the truck
3.	A balanced and safe method of entering and exiting equipment.
4.	3 of your four appendages must be contacting the heavy equipment/vehicle in order to be entering/exiting safely
5.	3 limbs making contact simultaneously at all times during mounting and dismounting
6.	When getting out of a machine or negotiating difficult terrain, you should always maintain 3-points of contact. You must have contact with both feet and one hand or 2 hands and 1 foot before moving.
7.	Having 2 feet and 1 hand or 2 hands and 1 foot in contact while mounting/dismounting equipment
8.	When mounting or dismounting equipment, always have a combination of 3 out of 2 feet, 2 hands in contact
9.	Turn around and always have 3 points on contact at all times
10.	two hand one foot, two feet one hand
11.	always ensure that where conditions warrant such a climbling up/down, maintain 3 point contact
12.	1 hand - 2 free, 1 foot - 2 hands
13.	having 3 points of contact on a machine when working with the machine
14.	always maintain 3 point contact when entering or leaving equipment
15.	reduce slips or falls by using 3 point contact
16.	reduces slips and falls
17.	maintain 3 points contact at all times when climbing in and out of machinery
18.	3 points at all times when mounting and dismounting equipment and ladders
19.	1 hand, 2 feet
20.	2 hands, 2 feet = 4 points. Pick any 3
21.	always have 2 feet, 1 hand in touch with machine
22.	when climbing up or down from equipment, 2 hands - 1 foot or 2 feet and 1 hand on contact at all times
23.	3 body parts contracting steps/rails. 2 hands 1 foot, or 2 feet and 1 hand

- 24. having 2 feet on a stable surface and 1 hand grippking a stable object or 2 hands and 1 foot on stable objects while climbing into or getting our of vehicle
- 25. maintaining 2 hands and one foot or 2 feet and one hand in contact with equipment when entering or exiting machine
- 26. hands, feet, brain
- 27. 3 of 4 limbs always contact machine
- 28. 2 hands-1 foot, involved in our safety program
- 29. always maintain 3 pont of contact when ascending or decending machine or work surfaces
- 30. 1 hand 2 feet, 1 foot, 2 hands, 3 points at all times
- 31. 1 hand 2 feet, 1 foot, 2 hands, 3 points at all times
- 32. must have 2 hands and 1 foot contact when climbing on and off equipment
- 33. must have 3 point of contact when climbing on or off equipment
- 34. any 3 point combination of hands/feet in contact with machine
- 35. complete contact with truck when entering or exiting
- 36. 3 points of contact touching machine at all times
- 37. 2 hands 1 foot or 1 hand 2 feet on a surface at one time
- 38. 3 points in contact with equipment while getting in or out
- 39. 2 hands 1 foot or 1 hand 2 feet on a surface at one time
- 40. when climbing up or down from equipment, 2 hands 1 foot or 2 feet and 1 hand on contact at all times
- 41. 2 hands 1 foot or 1 hand 2 feet on a surface at one time
- 42. have 3 limbs on solid contact when climbing up and down equipment
- 43. climbing in and out of truck to have 1 foot 2 hands or 2 feet, 1 hand contact
- 44. 2 hands held firmly and foot positioned
- 45. When climbing onto equipment you must have 3 points of contact at all times.
- 46. always usehandles and steps when exiting or entering machine,both hands&good footing
- 47. There must be at least 3 points, two feet and one hand ect, when accending or decending
- 48. As you mount or dismount, you must have at least 2 feet and one hand, or two hands and one foot hanging on at all times.
- 49. one hand on handle.one foot on ground and one foot on step

50.	3 points of contact to hold on to whatever you are holding onto, e.g 2 arms, 1 leg
51.	3 PARTS OF BODY MUST HAVE GOOD CONTACT TO OBJECT YOU ARE MOUNTING AT ALL TIMES, OTHERWISE, YOU ARE AT RISK OF A SERIOUS FALL. IE: GETTING IN AND OUT OF TRUCK, DRIVER MUST HAVE 2 ARMS AND A LEG ON TRUCK AT ALL TIMES, OR TWO LEGS AND ONE ARM, WHILE GETTING IN/OUT OF VEHICLE.
52.	to have at least three points of contact when climbing in and out of machine / truck. example 2 hands and a foot
53.	always use 3 point contact when climbing up to get in equipment or walking up or down stairs
54.	two hands and a foot, two feet and a hand is safest way down off equipment
55.	1 hand, 2 feet or reverse
56.	two feet one hands at all times entering & exiting equipment
57.	maintaining at least 3 point of contact while entering or exiting machine
58.	Three points, two arms and foot, two feet one arm hanging on while mounting or dismounting from equipment/truck
59.	3 points are secure to ground or vehicle while repositioning the 4th
60.	That you must maintain contact with the machine at 3 different points of your body at all times when climbing on or off.
61.	maintian 3 points of contact when climbing in or out of machinery
62.	At all times be connected. One hand - two feet. One foot - two hands.
63.	One foot and two hands, or one hand and two feet (three limbs touching a piece of equipment when etering or exiting at all times)
64.	two hands, one foot or one hand two feet
65.	One foot & two hands or two feet & one hand to be used when entering or exiting equipment
66.	use two feet, 1 hand or two hands and one foot at all times
67.	never heard of it in this term
68.	3 points of contact at 1 time
69.	common sense
70.	getting in and out of equipment
71.	2 hands-1 foot/2 feet- 1 hand to get in or out of equipment
72.	when you get in your machine, you touch with feet and both hands while getting in
73.	always use 2 hands & one foot or 2 feet 1 hand for getting on or off your machine

- 74. 2 feet and 1 hand or 2 hands and 1 foot contact at all times
- 75. always make sure hands and feet have contact on machine
- 76. 2 feet 1 hand or 2 hands and 1 foot
- 77. both hands and feet contact to machine

Where did you receive your information about 3-point contact? (Check all that apply)

Response	Chart	Percentage	Count
On-the-job training		73%	63
Off-the-job training session		16%	14
Safety poster, sign or leaflet		29%	25
Other, please specify		27%	23
	Total Responses		86

Where did you receive your information about 3-point contact? (Check all that apply) (Other, please specify...)

#	Response
1.	safety training
2.	meetings, experience
3.	Tolko safety meetings
4.	40 yrs experience
5.	don't remember
6.	Many places since High school
7.	common sense
8.	thru implementing safety program
9.	weyco manditory program
10.	I heard the term the first time at a tour of logging in Oregon in 1987
11.	safety meeting
12.	45 years experience

How many operators like you do you think use proper 3-point contact when getting in and out of their truck or machine? Would you say....

Response	Chart	Percentage	Count
All		5%	4
Most		54%	47
About half		33%	29
Few		6%	5
None		0%	0
Don't Know		2%	2
	Total Responses		87

How often do you feel that you get in or out of your truck/machine using 3-point contact?

Response	Chart	Percentage	Count
Always		40%	34
Almost always		49%	41
Sometimes		5%	4
Rarely		1%	1
Never		0%	0
Don't Know		5%	4
	Total Responses		84

What might stop operators from using proper 3-point contact? (Check all that apply)

Response	Chart	Percentage	Count
Don't know about it		13%	10
Forget to do it		37%	29
In a hurry		85%	67
Don't think it is important		38%	30
Don't think they will get hurt		44%	35
Other, please specify		10%	8
	Total Responses		79

What might stop operators from using proper 3-point contact? (Check all that apply) (Other, please specify...)

- # Response
- 1. older drivers that have hard time to break the habit and that got lucky and have never been hurt
- 2. worker attitude towards safety, its not manly to use 3-point contact, work culture needs to change
- 3. Carrying an object
- 4. young employers take more role
- 5. stupidity
- 6. carrying lunch kit, load book, flashlight
- 7. don't know about the results of age
- 8. vehicles not equipped properly

What might convince operators to use proper 3-point contact?

#	Response
1.	Falling
2.	a fall
3.	Continual reminders and the reasoning behind proper 3- point contact.
4.	Less pay for not doing their job properly
5.	safety alerts and stats to prov that people get hurt. Testimonials from experienced

	drivers that have hurt themselves
6.	more training
7.	Leadership examples, normalization, and consequences as a last resort
8.	a sticker reminding them to hold on to the ladder or a sign.
9.	Repetition of training, discuss previous incidents of people not using 3 points
10.	More awareness
11.	other workers being injured by not using 3 point contact
12.	understanding risk and stats of slipping or falling
13.	handles, meetings
14.	seeing what can happen if you slip and fall
15.	better handles or steps
16.	constant awareness - injuries
17.	awareness, training, supervision, injury stats
18.	falling off
19.	regular updates at safety meetings, tv advertising. safety training as part of school curriculum
20.	education
21.	continual reminders
22.	near misses but hopefully training through tailgate meetings
23.	safety alerts relating to incidents that occurred after not using 3 point contact
24.	on site discussions with fellow workers and supervisors
25.	falling out of truck
26.	remind them
27.	education, inspection, coaching, sharing hazard report
28.	getting hurt
29.	getting hurt
30.	explaining and showing actual injuries
31.	a full education
32.	informing/warning of injury and suitable corrective disciplinary actions
33.	warning sticker
34.	education

35.	stats
36.	safety culture
37.	visual aids of what can happen it its not done
38.	experience, injury
39.	get them to understand to go in and out is a procedure
40.	a slip causing a bad injury
41.	Falling from not doing it. A sore ass is a good reminder.
42.	Better awareness and education, through tailgate meetings and open discussion.
43.	slippery
44.	a previous accident, more training
45.	SAFETY ALERTS, MORE EMPHASIS AT SAFETY MEETINGS
46.	a fall
47.	seeing and showing what happens when you forget
48.	continual pointing our/watch report
49.	force full disclosure with supervisor
50.	unsafe = unemployed
51.	regular reminders/meetings
52.	Once they are injured for NOT using it.
53.	Safety Alert with a few examples of workers that didnt use it and the cost of claims/lost time
54.	Knowing of examples where operators have gotten hurt when not using 3 point contact.
55.	let them know that they dont need to rush
56.	Loosing their job if they don't.
57.	watching and hearing of other people getting hurt, safety education (meetings/videos)
58.	education
59.	Unfortunately, Knowing somene who was injured. Reminders at safety meetings. Peer Pressure
60.	get hurt
61.	getting hurt
62.	not get hurt

63. painful groin pulls
64. have an accident
65. fall a few times
66. by falling and getting hurt
67. warning decals at point of getting in or out or machine
68. safety talks, info, stats
69. when they slip and fall
70. having a near miss or getting hurt
71. more training or fall once and get hurt

What do you think would be the best way to reach operators like you to convince them to use 3-point contact?

#	Response
1.	safety meetings
2.	Reminders to employees about the system when observed not using 3-point. Monthly Safety meetings.
3.	meeting, written, verbal, less pay
4.	Inspections that point out their non compliance and safety meetings to reinforce 3 point contact practice
5.	safety meetings
6.	normalization
7.	a slide show or short video of common injuries
8.	Training sessions
9.	communication
10.	individual time to discuss safety (one on one) plus meetings
11.	more handles to hold on to, better footing
12.	stats, past injuries, co-workers injuries - awareness
13.	keep telling them
14.	decals in machines, accountability in safety eg. reduced WCB rates
15.	safety meetings, incidents investigations, dicipline reminders, worker observations, training

16.	tailgate and general safety meetings
17.	ensuring that management supports the time spent on equipment maintenance
18.	regular tool box meetings
19.	poster
20.	examples of accidents
21.	safety training done annually
22.	contact meetings with supervisor, observational audits, training
23.	enforcing procedures
24.	education
25.	meetings, hand outs
26.	education
27.	stats
28.	coaching & culture
29.	video presentation
30.	keep training and talking about it
31.	make clear that the most common and easiest task is always the most dangerous
32.	person to person - word of mouth
33.	more awareness like this quiz for instance
34.	Inform of some major injuries from not using it.
35.	Tailgate meetings and open discussions with crew.
36.	keep drilling it into us
37.	poster at scale house, brought up at safety meetings
38.	SAFETY MEETING DISCUSSION, FRIENDLY REMINDERS FROM EVERYONE
39.	i talk about it during safety meetings
40.	remind them at our safety/tailgate meetings
41.	the results of jumping when you get old
42.	supervisors during safety meetings
43.	supervisor reminding operators/ on-site observations
44.	continually reminding them at meetings and orientations.
45.	Safety meetings

46.	Showing them what can happen if they don't use it as much as possible.
47.	leading by example
48.	Loosing their job if they don't
49.	education meetings
50.	text/video
51.	Supervisors, Radio contact with other operators - gentle reminder, safety meeting discussions
52.	don't hurry
53.	education
54.	getting hurt
55.	reminding not having to be rushed
56.	they are going to do it themselves or they aren't
57.	safety meetings
58.	safety talks
59.	education
60.	give examples of people who have been injured, lead by example
61.	more training

How many years have you been operating machinery or logging trucks?

Response	Chart	Percentage	Count
Less than 1 year		6%	4
Less than 5 years		5%	3
Less than 10 years		11%	7
More than 10 years		78%	50
	Total Responses		64

Have you ever had time off work due to an injury from climbing into or out of your truck/machine?

Response	Chart	Percentage	Count
Yes		8%	6

No		92%	71	
	Total Responses		77	

Have you ever had time off due to other injuries at work?

Response	Chart	Percentage	Count
Yes		27%	21
No		73%	57
	Total Responses		78

Please enter your postal code.

#	Response
1.	VON 2H0
2.	v0n2p0
3.	V0E 2W1
4.	V1W 2K4
5.	V9P 2B2
6.	VOJ 1E1
7.	V0A 1H7
8.	V0G 1H2
9.	V0B 1G1
10.	v2k5t9
11.	V1Z 3J9
12.	V0R2G0
13.	V0A 1E0
14.	V1K1R6
15.	v0k2z0
	V0C1J0
17.	v0x1c1
18.	V2J 5Z5
19.	V9T6E8
20.	V9W 7X8

Would you like to be entered into a draw for a Hi-Vis, Waterproof Jacket?

Response	Chart	Percentage	Count
Yes		91%	51
No		9%	5
	Total Responses		56

BC Forest Safety Council 3-Point Contact

Appendix B - Survey Questions

BC Forest Safety Council

Thank you for agreeing to take this three-point contact survey for the BC Forest Safety Council.

Knowledge and Attitudes

Are you a supervisor or manager of people who operate heavy equipment (logging truck, low-bed, machine) as part of their work?

- O Yes
- O No

Do you operate heavy equipment (logging truck, low-bed, machine) as part of your work?

- O Yes
- O No

What type of heavy equipment do you run?

- O Logging truck
- O Low-bed
- O Skidder, processor, feller-buncher
- O Other, please specify...

Entering and Exiting

Are you familiar with the term 3-point contact?

- O Yes
- O No

What is your understanding of 3-point contact?

Where did you receive your information about 3-point contact? (Check all that apply)

- □ On-the-job training
- □ Off-the-job training session
- □ Safety poster, sign or leaflet
- □ Other, please specify...

3-Point Contact Definition

3-points of contact is defined as always having one foot and two hands or one hand and two feet in contact with a piece of the equipment or vehicle when entering or exiting.

How many operators like you do you think use proper 3-point contact when getting in and out of their truck or machine? Would you say....

- O All
- O Most
- O About half
- O Few
- O None
- O Don't Know

How often do you feel that you get in or out of your truck/machine using 3-point contact?

- O Always
- O Almost always
- O Sometimes
- O Rarely
- O Never
- O Don't Know

Behaviours, Barriers and Motivators

What might stop operators from using proper 3-point contact? (Check all that apply)

- Don't know about it
- □ Forget to do it
- □ In a hurry
- □ Don't think it is important
- □ Don't think they will get hurt
- □ Other, please specify... _____

What might convince operators to use proper 3-point contact?

Communications

What do you think would be the best way to reach operators like you to convince them to use 3-point contact?

Demographics

How many years have you been operating machinery or logging trucks?

- O Less than 1 year
- O Less than 5 years
- O Less than 10 years
- O More than 10 years

Have you ever had time off work due to an injury from climbing into or out of your truck/machine?

O Yes

O No

Have you ever had time off due to other injuries at work?

- O Yes
- O No

Please enter your postal code.

Draw for Jacket

Would you like to be entered into a draw for a Hi-Vis, Waterproof Jacket?

- O Yes
- O No

Enter your name.

Enter your address.

Enter your phone number.