



MAG Companies Establishing System to Predict and Eliminate High Severity Events

By Lana Kurz, RPF, Safety & Environment Manager, Interfor, Western Operations and David Murray, CRSP, Corporate Safety, HR & Environment Manager, Gorman Group

The forest industry needs to get ahead of the next crisis in safety. We need to predict injuries and proactively respond. One way is to look at how workers are getting hurt and to assess and respond to all recordable injuries, including minor injuries.

But what about those **incidents** that had potential to be much more serious but where no one was actually hurt? Do we go far enough to identify and investigate these events - where a life-altering injury or fatality was thankfully dashed? Or do we spend our time and resources investigating incidents where the worst possible outcome was only the relatively minor injury that actually occurred?

For years, the forest industry has paid close attention to the Medical Incident Rate (MIR) as well as the recordable injuries that contribute to this statistic. However, some Manufacturing Advisory Group (MAG) companies are looking at different ways to prioritize safety resources, based on Significant Incident Failure Potential events, or SIFp events.

“As an organization matures, they don’t shy away from safety events that are downright scary. Treating SIFp events like any other incident is a mistake. Instead, if you treat SIFp events as if they did result in a life altering injury or a fatality, you will discover a deeper level of preventative corrective actions will result.” - Andrew Horahan, Vice President, Western Operations, Interfor

What is a SIFp event? It’s another metric intended to draw attention to significant events which may be overlooked or

excluded from the Medical Incident Rate (MIR) statistic. Identifying SIFp events is intended to red flag events which are categorically higher risk and deserve focus and attention through robust investigations on causal analysis and recommendations to prevent re-occurrence.

The difference is focusing efforts on high-risk EVENTS rather than on medical INJURIES.

To determine if an event falls into the SIFp category, answer positively to either/both of these two questions:

1. Had circumstances been slightly different, is it reasonable to believe that the event could have resulted in a significant injury or fatality?
2. If the situation was repeated one hundred times, is it reasonable to conclude the outcome could eventually be a significant injury or fatality?

If yes, then the event is an SIFp.

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Here are some examples:

Event in MIR Category, but not in SIFp	Event in SIFp Category, but not in MIR
Scratched arm against a metal railing burr while walking by, requiring two stitches. (Medical Treatment injury)	Hoist equipment falling when strap broke, narrowly missing crushing the worker who was scratched on arm during the event.
Strained back while pulling a board, 5 days off work. (Lost Time injury)	Strained back due to falling off deck of tugboat into icy winter water. Worker returns to work after first aid visit.
Twisted ankle due to loss of 3-point contact when exiting machine, requiring one day off work. (Lost Time injury)	Forklift spilled three lumber packages across the main designated crosswalk.
Broken rib due to slip and fall on ice at same level. (Medical Treatment)	Sore rib due to fall from height of 18 feet when fall protection lanyard failed. Worker returns to work after first aid visit.

Welcome to the Spring edition of Forest Safety News, covering news about safety topics in forestry. This is YOUR safety newsletter. We look forward to your input and feedback! Email the editor at editor@bcforestsafesafe.org or call 1-877-741-1060.

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MAG companies are looking at “High Risk” areas of exposure and are putting potential SIFp exposures into categories to make identification, classification and tracking of SIF’s easier for their organizations.

“MAG’s mandate is to drive the risk of serious injuries and fatalities out of our industry. I have seen firsthand the alignment with that mandate through Gorman Group shifting how it measures and manages critical safety risk by using the SIFp process. I see the industry adoption of this metric as a continuity of MAG moving towards our risk-based MAG-SAFE safety audit from prior administrative-focused audits.” - David Murray, Gorman Group Safety Manager / MAG Chair

Here are some examples of SIFp categories being focused on:

	<p>Combustible Dust</p> <ol style="list-style-type: none"> 1. Explosion or fire 2. Excessive accumulations of wood dust
	<p>Fire or Explosion</p> <ol style="list-style-type: none"> 1. Hot work-related fire start or smolder 2. Fire or explosion requiring extinguishment, regardless of cause
	<p>Lockout</p> <ol style="list-style-type: none"> 1. Failure to identify and isolate all energy source(s) 2. Disconnect labeled incorrectly allowing potential for isolation of wrong equipment 3. A lockout procedural error is made, and employee(s) enter the bite or restricted area
	<p>Lifting or Rigging</p> <ol style="list-style-type: none"> 1. Crane tip-over, hoist failure 2. Use of damaged lifting/rigging equipment 3. Dropped load 4. Unsafe rigging
	<p>Fall from Elevation</p> <ol style="list-style-type: none"> 1. Actual falls with exposure to unprotected work surfaces or edge 2. Potential falls with exposure to unprotected work surfaces or edges 3. Exposure to a fall
	<p>Water Activities</p> <ol style="list-style-type: none"> 1. Fall into water 2. Marine or barge capsizes or evacuation event
	<p>Mobile Equipment</p> <ol style="list-style-type: none"> 1. Collision with infrastructure or other mobile equipment 2. Speeding, tip-over, rollover, mechanical failures 3. Operating in a prohibited area 4. Carrying logs/product/materials beyond safe capacity, incorrectly and/ unrestrained 5. Carrying material not intended for equipment
	<p>Hazardous Materials</p> <ol style="list-style-type: none"> 1. Hazardous chemical inhalation or contact with face/torso 2. Significant hazardous chemical spill or release 3. Exposed or engulfed by a hazardous product 4. Unintended injection of hazardous substance under the skin
	<p>Pedestrian</p> <p>People outside a protective structure and exposed to these hazards:</p> <ol style="list-style-type: none"> 1. Mobile Equipment – struck by/against/between risk 2. Overhead Hazards – struck from above risk 3. Unstable Material – load spill, engulfing risk

	<p>Electrical</p> <ol style="list-style-type: none"> 1. Electrical shock 2. Arc flash or blast 3. Exposure to live electrical (unintended and/or open) 4. “Touching before testing” circuit 									
	<p>Safeguarding</p> <ol style="list-style-type: none"> 1. Exposure to unprotected hazards or point of operation nip/pinch/crush points 2. Unguarded belt head and tail pulley 3. Exposure to uncontrolled release of product from equipment 4. Projectile risk 									
	<p>Confined Space</p> <ol style="list-style-type: none"> 1. Entry without required permit 2. Condition requiring evacuation 									
	<p>Other significant incident involving the following:</p> <table border="0"> <tr> <td>1. Weather Illness</td> <td>2. Violence</td> <td>3. Natural Disaster</td> </tr> <tr> <td>4. Wildlife</td> <td>5. Aviation</td> <td>6. Railcar</td> </tr> <tr> <td>7. New or Young Worker</td> <td>8. Tools or Equipment</td> <td></td> </tr> </table>	1. Weather Illness	2. Violence	3. Natural Disaster	4. Wildlife	5. Aviation	6. Railcar	7. New or Young Worker	8. Tools or Equipment	
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“Focusing on SIF potential brings more awareness to those connected to safety to remove the “we were lucky” from an incident. It now becomes: if the circumstances had only been slightly different, we could have experienced a fatality. It focuses all efforts on eliminating those root causes.” - Nick Arkle, Gorman Group CEO

These companies want to focus energy and resources on incidents that had potential to have much more dire consequences so that they can find ways to prevent a similar recurrence. Tracking SIFp events and determining incident trends aids in the development of resources to eliminate or reduce exposures to employees. They also want to share what they learn with others in industry. If one of these SIFp events has learnings that the rest of industry can benefit from, they can share it with BCFSC to distribute through the Manufacturing Safety Alert process. The Safety Alert includes a brief description of the incident, suggested actions and key takeaways. In this process, BCFSC reviews each incident and removes all identifying information to protect privacy.

“Using the SIFp metric within West Fraser has helped us by focusing our resources and activities on events that could have had much more serious consequences” - Troy Withey, West Fraser Safety Manager

If you would like to sign up for the weekly manufacturing safety alert distribution, please follow this link: www.bcfestsafe.org/node/3409

The Cary White Memorial Award for Commitment to Safety Excellence – Ron Judd

Leadership in Safety Awards are presented annually to celebrate safety achievements in the forest industry. Nominations are invited from anyone in industry, who knows someone – an individual, crew, contractor, company, supplier, consultant, etc. – who deserves to be recognized for their outstanding safety achievements. Someone who has made, or continues to make, a difference in supporting our shared goal to see every worker return home safely at the end of the day.

The Cary White Memorial Award for Commitment to Safety Excellence is awarded to an individual or company who demonstrates an unwavering commitment to improving awareness, expanding safety knowledge and developing safety skills on the ground in the forest sector. Above all else, this individual helps to build a lasting culture of safety for every worker in the industry.

It was created in honour of one of the BC Forest Safety Council's first Safety Advocates, Cary White, who passed away in 2008. With more than 30 years experience in the forest industry – including 23 years with WorkSafeBC (WCB), Cary was an individual often described as someone who had forestry and the safety of workers in his blood.

The selection criteria for the Cary White Memorial Award for Lifetime Achievement includes:

- A long-standing career in forestry safety
- Proven commitment to safety culture
- An established trainer/mentor/communicator

2019's recipient **Ron Judd** was nominated for this prestigious award by the Coast Harvesting Advisory Group (CHAG) for his contribution to improving safety for coastal logging and forestry operations. Ron has worked as an Occupational Safety Officer with **WorkSafeBC** for 29 years. CHAG members commended Ron on his willingness to work with employers to solve challenging safety issues.

Before Ron started work as a prevention officer with WorkSafeBC, he worked as a Logging Camp Manager on the Sunshine Coast. During that time, he was part of a group of collaborators who developed the *Fallsafe Program*, the precursor to the *Falling and Bucking Standard*. Ron knew and worked with Cary White, so receiving this award is especially meaningful. Ron met Cary when he did a safety audit on his logging operation and shortly after, Ron decided to join WorkSafeBC as a prevention officer.

Ron was unable to receive his award at the Vancouver Island Safety Conference



Shown L-R: Rob Moonen - CEO BCFSC, Ron Judd – WorkSafeBC, Mike Ross - WorkSafeBC

last October, so we caught up with him to present this prestigious award on December 19, 2019 in Victoria, BC

"I am honored to receive this award. I have always strived to communicate with workers, supervisors and owners in a respectful manner. With my officers, I tell them they have not been successful until employers and workers phone to ask questions without the fear of being judged. I hope that will be my legacy to them." 🙏

Workers Compensation Act - A new version comes into effect April 6, 2020

The new version of the Worker's Compensation Act does not fundamentally change the content of the existing Act, but it does re-organize the components, changes some wording and removes parts that have been repealed or are out-of-date. One area to note is the Occupational Health and Safety provisions previously in Part 3, will now be in Part 2 of the new 2019 version. This

change includes the sections on General Duties of Employers, Workers and Others, and on Joint Committees and Worker Representatives.

To find a summary outlining these changes, visit the WorkSafeBC website and download the *Link changes for OHS Provisions of the Workers Compensation Act 2019* document.

www.worksafebc.com/en/resources/health-safety/ohsr-searchable/link-changes-ohs-provisions-workers-compensation-act-2019?lang=en

If you rely on web links to access the Worker's Compensation Act, you will have to update these links or they will not work after April 6, 2020.

BCFSC will be updating our training materials and other publications to reflect these changes over the next few months. 🙏



Key takeaways from WPAC’s bow tie analysis workshop

The Wood Pellet Association of Canada (WPAC), in co-operation with WorkSafeBC and media partner Canadian Biomass, held the Process Safety Workshop on Bow Tie Analysis at the Prince George, BC, Civic Centre on Nov. 13, 2019. Fifty participants, including pellet plant operators, maintenance personnel and representatives from insurance companies, universities, fire detection equipment suppliers, BCFSC and WorkSafeBC attended the event. The workshop was facilitated by WorkSafeBC’s Jenny Coleman, ergonomist/human factors specialist, Mike Tasker, occupational safety officer, Geoff Thomson, occupational hygiene officer and Jennifer Fung, senior engineer.

Bow tie analysis is a method of predicting all the potential causes of catastrophic incidents and putting in place critical controls to prevent such catastrophes from occurring. The bow tie visualizes the relationship between an undesirable event, its causes, accidental scenarios, and the prevention and mitigation measures to limit their consequences. It also demonstrates the effectiveness of existing controls. A critical element of a successful bow tie analysis is to assemble a diverse team with varying expertise.

The workshop started with an introduction to bow tie analysis, followed by hands-on experience for all participants. They worked in small groups (under the direction of WorkSafeBC facilitators) to develop bow ties for some of the largest potential catastrophes that could occur in any pellet plants:

- Combustible dust explosions at the size reduction hammer mill equipment/pelletizing equipment
- Combustible dust explosions in conveyance (any after the dryer)
- Fire within a belt dryer
- Combustible gas explosion in a dryer or in the system downstream of the dryer/ID Fan failure

As seen in the figure below, in the centre of the bow tie is ‘hazard,’ which is an operational activity or materials that have the potential to cause harm. The hazard could lead to the ‘top event.’ The top event is the moment when control over the hazard is lost, releasing harmful potential. On the right side of the bow tie are ‘consequences’ that are direct outcomes of an accident sequence that results in harm. ‘Threats’ are also listed on the left side. They are initiating events that can potentially release a hazard and produce the top event. ‘Controls’ are listed in between the threat and hazard, as seen in the figure below.

Though they are extremely important, critical controls can fail. Consequently, continuous inspection, maintenance and training are very important. One way for getting the right level of detail for controls is to make sure they follow the ‘detect, decide and act’ guideline.

“We’ve done a lot of work at Lavington Pellet to improve our safety performance and I’m proud of this. This bow tie analysis helped me see where we need to be to take safety to the next level” said Eric Jarvis, Operations Team Lead for Lavington Pellet.



Jenny Coleman (left) and Geoff Thomson facilitate one of the groups developing bow ties for some of the largest potential catastrophes.



Jennifer Fung (left) and Mike Tasker facilitate the other group developing bow ties for some of the largest potential catastrophes.



To see examples of the bow tie analysis and to download the full WorkSafeBC presentation, visit: www.bcforestsafesafe.org/node/3433