



The following Good Safety Practices were developed from the 2022 Innovation in Safety Award submittals.

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Anti-Cutting Protector for Profiler Head

Resolute – Larouche

Contact: Jessica Dubois-Martel, General Manager

Email: jessica.dubois-martel@resolutefp.com

1. *Describe in detail the innovative/novel solution that was developed and implemented.*

Each shifts, maintenance crew must change profiler head using an overhead crane. Over the production hours, knives of these heads wear, which could have an impact on the quality of the profiling. Despite an appropriate method of work defined, in order to proceed the changes of these heads, one of our employees declared a risk and according to him, of being struck by the knives (heads) of the moving load and reaching a part of the worker's body if it oscillates or moves unexpectedly. Our team of mechanics have manufactured a head cover to protect the knives, so we have reduced the risk of cutting to the maximum.

2. *How was this innovation developed and implemented? (How was it introduced, process used, people/positions/teams involved, etc.)*

It was first the plant superintendent who brought the first idea. He tried something alike in his last plant to protect the planer cutting head. With the mechanical team, they designer a protector that can fit on profiler head.

3. *Describe the improvements that have been achieved by the implementation of this innovation. (Explain how the solution has reduced injuries/illnesses or the risk thereof, improved safety awareness on or off the job, improved safety systems, advanced the safety program, and/or improved the flow/reliability of the production process. Provide supporting facts/data, where available).*

The protector prevent the mechanic hands to be crushed between the structure and the knives. As the knives are not in direct with the hand, the cutting risk is eliminated.

2022-2023 safety corporate objectives were focused on hands injuries. With this innovation, we are sure that we can decrease incident related to hands.

4. *When was this innovation implemented and when were positive results first apparent (provide month and year for each)?*

The first version of the protector has been completed in fall 2022. In December 2022, we found the right version to keep the protector from the casing into the machine. Positive results were seen immediately when using the protector. The protector prevent the cutting risk all the time the profiler head is on motion.

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Air Canon System

Tolko – Meadow Lake

Contact: Sanmi Davids (Safety & Asset Protection Advisor)

Email: Sanmi.davids@tolko.com

1. *Describe in detail the innovative/novel solution that was developed and implemented.*

The press at Meadow Lake OSB Plant requires routine blow down during shift to reduce debris build up and fire potential. To adequately blow down the press, an air wand with a long extension arm is used to reach into the press and clear debris out to prevent fires and sparks. A serious near miss occurred in 2021 where the air wand extension became accidentally caught in the closing press. The wand ruptured a thermal oil line causing superheated oil to spray out, narrowly missing the operator who struggled to keep control of the wand. It was at that time that the site manager challenged the Meadow Lake Team to find a solution to reduce operator exposure to heat, fire and ergonomic hazards. Based on technology seen used in mining, a team was put together to ultimately come up with the innovation of mounting air cannons on the top the press to periodically blow air down through the press reducing the frequency and duration of press cleanings.

2. *How was this innovation developed and implemented? (How was it introduced, process used, people/positions/teams involved, etc.)*

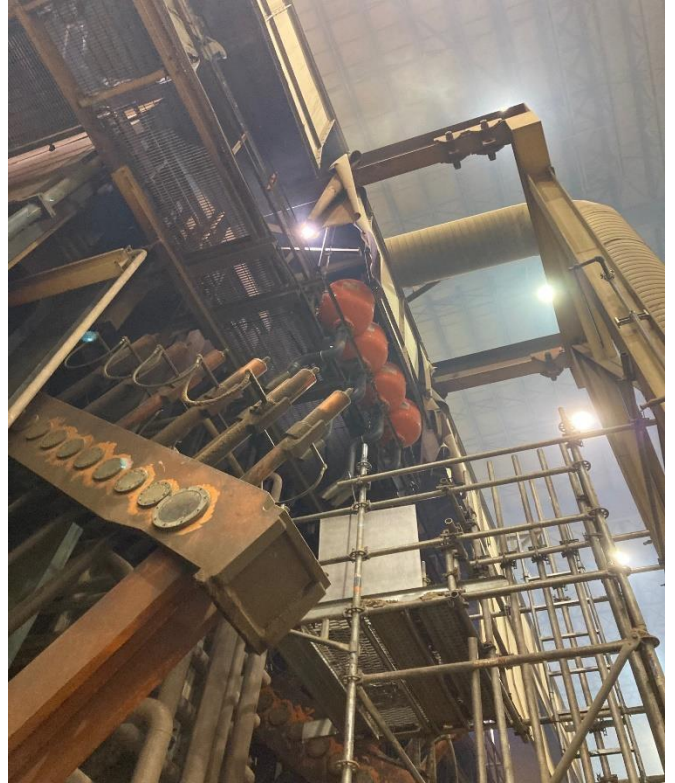
The idea was brought to fruition through Augustine Klarnar, (functional area leader) with Chris Reid (Electrician) who took the project on to investigate whether air cannons, like those used in mining to prevent bin build up, could be mounted on the top of the press to prevent dust and debris build up. The team looked online and saw how air cannons were being utilized in other industries. They worked with engineering company that builds them to come up with a design. Augustine sent drawings of our press, and worked with them to determine where we should mount them based on what areas were needed to keep clean. Additionally, trial and error was required to know how to direct the nozzles to clean the most problematic areas. The Air Canon System is a series of pressurized air vessels that discharge between 25-150 PSI, reducing the material build up on Press and reducing the risk of fire on the Press. The air cannons were mounted only on one side of the press to prove out the technology over trial period.

3. *Describe the improvements that have been achieved by the implementation of this innovation. (Explain how the solution has reduced injuries/illnesses or the risk thereof, improved safety awareness on or off the job, improved safety systems, advanced the safety program, and/or improved the flow/reliability of the production process. Provide supporting facts/data, where available).*

The Air Cannons were installed in August of 2022. At that time, the press would be shut down for an average of 20 minutes for a blowdown, requiring operators to spend considerable time blowing down hard to reach areas. Additionally, hourly blow downs were occurring during operation. In September, an immediate 90% reduction in Class I fires were seen (small fires/sparks). Slowly over time, as the nozzles and positioning are being optimized, a gradual reduction has been realized in operator dependent press cleaning activities. Although the press is still being shut down once per shift for blow down, the downtime is down to roughly half (10 minutes), and the operator interface is reduced. The hourly cleans have become more inspectional and less cleaning. The team sees more gains on the horizon. The Meadow Lake team is planning to install the air cannons on the remaining side of the press. Once this occurs, the team fully expects to reduce user exposure to heat, fires, thermal oil, and ergonomic hazards by cutting the cleaning activities by 1/3.

4. *When was this innovation implemented and when were positive results first apparent (provide month and year for each)?*

The air cannons were installed August 2022, and the reduction in press fire was observed immediately in September 2022. The remaining gains, including worker exposure to heat, ergonomic hazards, and air wand use is expected to reduce even further once the second half of the press is complete.



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Blue Ticket Elimination

Weyerhaeuser - Elkin

Contact: Jody Seaver, Safety Manager

Email: jody.seaver@wy.com

1. *Describe in detail the innovative/novel solution that was developed and implemented.*

A safety hazard was identified that log truck drivers were approaching our Sennebogen log loaders during the last grab of wood to obtain a “blue” ticket. Despite numerous interventions and training human nature of the truckers were to ‘rush’ and not follow process of only approaching machine when at zero energy. The information listed on the ticket was comprised by a Weyerhaeuser log loader operator and personally hand delivered to the driver. The information identified was wood placement location, wood species, log truck number or identify characteristics, special load notes, etc. The objective with this innovation was to eliminate the interaction between a log truck driver and our mobile equipment, totally eliminating a truck driver from entering the operational area (at least 50 feet radius) while loader machines are working.

2. *How was this innovation developed and implemented? (How was it introduced, process used, people/positions/teams involved, etc.)*

This innovation was developed by a cross functional team consisting of mill operations, raw materials, and scale staff. This group brainstormed ideas for a win-win solution for all individuals involved. A solution in eliminating mobile equipment/pedestrian interaction in this process was designing a communication structure via mobile radios. A method of providing vital information that scale house attendants need to close out each load was executed by mobile radios. The use of mobile radios were in place prior to this process change. From a financial impact was no cost to implement this innovation, however expanding the communication structure and training was challenging. The element of notifying all parties involved of the change and consistently providing the vital required information took some time to smooth out. For example, a notification was sent through our raw materials division to all contract log truck drivers that visit our mill for log deliveries. However, the notification cycle takes an extended time frames because the use of sub-contract drivers or individuals that rarely deliver product to a Elkin. The other challenge was the ‘extra’ radio communication – team worked system to streamline by only communicating critical information as for example for several loads the tier location did not change.

3. *Describe the improvements that have been achieved by the implementation of this innovation. (Explain how the solution has reduced injuries/illnesses or the risk thereof, improved safety awareness on or off the job, improved safety systems, advanced the safety program, and/or improved the flow/reliability of the production process. Provide supporting facts/data, where available).*

The greatest success from this innovation is the obvious application of removing log truck drivers from close proximity to mobile equipment, keeping them farther away from the machines. This isolation reduces the risk of a truck driver suffering injuries of invert contact from not only the machine but wood debris as well. By average our site receives approximately 100 log truck deliveries each day (Monday-Friday). This new method helps eliminate the likelihood of a serious incident each delivery.

Another positive attribute of this process is streamlining communication by eliminating the information going through another person. For example, often times the “blue” ticket could be damaged or lost by a truck driver before closing out the load at the scale house. So, the scale attendant had to close out the delivery based on the truck driver’s memory in lieu of getting the information needed directly from the loader operator that unloaded the truck.

4. *When was this innovation implemented and when were positive results first apparent (provide month and year for each)?*

The implementation phase began in March of 2022, immediate success was recognized as truck drivers were not physically interacting with mobile equipment during periods of operation. As with any process, personnel are monitoring to make improvements and or modifications as needed. Overall, this innovation has been successful at Elkin and other sites could replicate if they experience a similar process.

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Catwalk at #1 Lathe

Boise Cascade - Florian

Contact: Charles Derr, Safety Coordinator

Email: charlesderr@bc.com

1. *Describe in detail the innovative/novel solution that was developed and implemented.*

Installed catwalk at the belt in the hole on #1 lathe.

2. *How was this innovation developed and implemented? (How was it introduced, process used, people/positions/teams involved, etc.)*

Catwalk was built in house by fab shop/welders and installed in October 2022.

3. *Describe the improvements that have been achieved by the implementation of this innovation. (Explain how the solution has reduced injuries/illnesses or the risk thereof, improved safety awareness on or off the job, improved safety systems, advanced the safety program, and/or improved the flow/reliability of the production process. Provide supporting facts/data, where available).*

These improvements improved safety by:

1. Less interaction with equipment by employees lessens the chance for injury.
2. No longer having to put employees in harms way regarding the ribbon conveyor.
3. No longer using compressed air to clean the area for belt installation because this area can be cleaned from the catwalk when down with a pike pole.

Production was improved:

- 15 min./24 hr. period x 350 days = 91.25 hrs. of increased run time. At our current run rate that equals 3/8 3,558,750 increased production annualized.

4. *When was this innovation implemented and when were positive results first apparent (provide month and year for each)?*

10/22 Completed

10/22 Improvement in Safety and Production Observed.



From the ground you can tell the structure is big. It is also removable so that any repairs can be made as normal.



Each entrance onto the walkway has an interlock where if disconnected the equipment stops running.



Pike Pole Tip is placed where the plug ups occur to give a general location of the task/plug up.



Employee demonstrating the safe location while performing the task.

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Caul Screen Winch

Weyerhaeuser - Sutton

Contact: Christopher Corder, Safety Manager
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1. *Describe in detail the innovative/novel solution that was developed and implemented.*

A winch was installed as a safety improvement for dealing with a common upset condition at the Sutton mill. The winch simply hooks to the center of a headbar and pulls dropped screens from the bottom of the formline to the top section with minimal effort. Caul screens weigh approximately 300lbs and create a challenge dealing with the weights in addition to pinch point exposure. The task previously required 4 team members to complete and now only requires 2 team members. This was a great safety improvement that also improved the time to correct the issue. Quality and reliability impacts have also been achieved.



Winch mounted at tail of formline



Top view of tail of formline where screens are placed back in



Side view of tail of formline and winch



Caul Screen with headbar attachment point

2. *How was this innovation developed and implemented? (How was it introduced, process used, people/positions/teams involved, etc.)*

Debra Jarrett, Richard Pritt, Anthony Edwards, Zac Morrison, Greg Luzader and Jeremy Johnson collaborated and came up with this solution to remedy the hazards of having a dropped caul screen.

3. *Describe the improvements that have been achieved by the implementation of this innovation. (Explain how the solution has reduced injuries/illnesses or the risk thereof, improved safety awareness on or off the job, improved safety systems, advanced the safety program, and/or improved the flow/reliability of the production process. Provide supporting facts/data, where available).*

Safety Improvements from this innovation:

- 1 - Elimination of team members having to lift a 300lb caul screen.
- 2 – Eliminates awkward body positioning.
- 3 – Eliminates exposure to sharp objects and pinch points
- 4 – Reduces the amount of manpower needed to address upset condition
- 5 – Reduction of downtime that significantly reduces the potential of fire and hot loads

4. *When was this innovation implemented and when were positive results first apparent (provide month and year for each)?*

Innovation implemented in September of 2022 and positive results were apparent in October of 2022, first dropped caul screen, since implementation.

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Employee Advocate Program

Winston Plywood and Veneer

Contact: Calvin Hackney, EHS Manager
Email: khackney@winstonplywood.com

1. *Describe in detail the innovative/novel solution that was developed and implemented.*

Winston Plywood shipped its first truckload of plywood in 2016. The mill continued to successfully produce plywood, but the safety performance was struggling. An average of 19 employees were injured every year with at least 2 life changing injuries included. Multiple solutions were implemented to solve the problem, but none were working. Policies and procedures were added or changed. People were removed but we did not see changes in our safety and people continued to get injured. We had to change, and we knew the focus had to be at the hourly level. The employee Advocate Program was born and implemented. The program was designed to attack the culture of the mill at the hourly level. We wanted to retain the employees that helped get the mill going, but also attract and recruit the right employee to help us get to the next level. Advocate interaction through safety was the targeted approach to stop the yearly injuries in the mill.

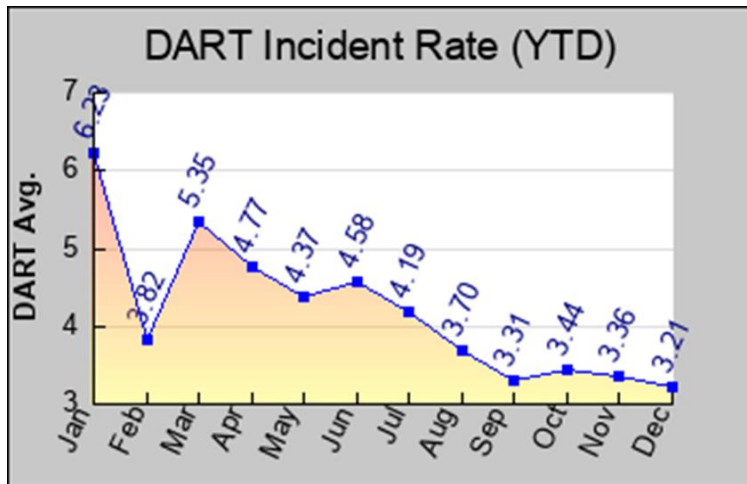
2. *How was this innovation developed and implemented? (How was it introduced, process used, people/positions/teams involved, etc.)*

The Implementation group started with "Why do we need these positions in the mill" and the answer was in the data. 19 employees were getting injured each year. We were experiencing life changing injuries every year. Our incident rate was among the worst in the industry and the community did not trust us to keep their family safe. Our objective was to stop injuring our employees and to give them a safe positive place to work. Members of the team researched and developed questionnaires to support the program. Positions were created with the titles of Employee Advocate. This team would interact with employees in every stage of the Winston Plywood experience – recruitment, orientation, and training. Early 2022, an additional portion of the Orientation process was implemented. Entitled, "Why Take the Risk – the Psychology of Safety" and promoted by the Leadership Training and Development division, awareness, and insight into the root causes of risky behavior and simple solutions for success such as Self-Awareness – Lead Your Self First; Situational Awareness – Look up, Look around; and the Courage to Care – If you see something, say something were educated and encouraged. The team would identify employees every week, categorize them by tenure, follow their safety training knowledge and progression given the time they have been with the company. If issues were identified the employee would be directed to the appropriate department to resolve the issue. Safety hazards were eliminated, and some process changes implemented because of these interactions.

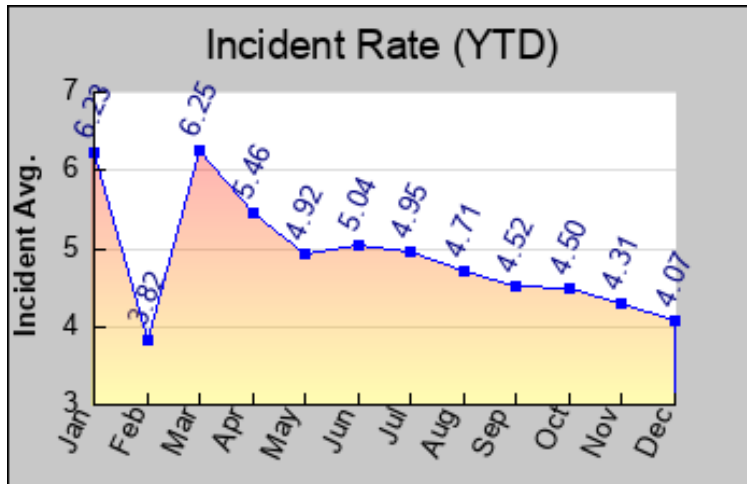
3. *Describe the improvements that have been achieved by the implementation of this innovation. (Explain how the solution has reduced injuries/illnesses or the risk thereof, improved safety awareness on or off the job, improved safety systems, advanced the safety program, and/or improved the flow/reliability of the production process. Provide supporting facts/data, where available).*

After the program was implemented and we had boots on the ground, the safety performance slowly started to change. It took over a month to begin seeing the changes in the numbers, but the data was supporting the work the team was doing. The employees were listening, and the numbers were gradually declining. Trust in the advocate's was building; and as a result, more of the team were interacting with the Advocates. Based on reports from the employees, per the Advocates, we were able to add guarding, modify or change processes, and monitor areas of concern. The overall safety in the mill improved.

2021



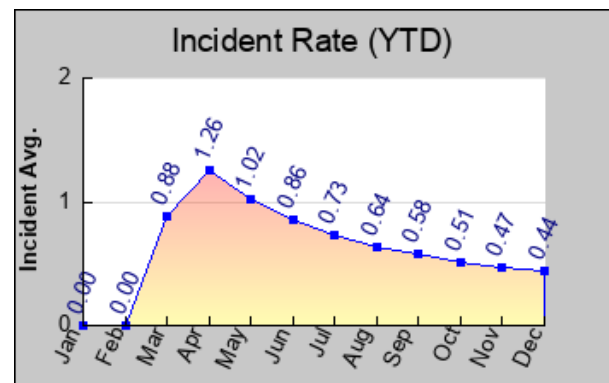
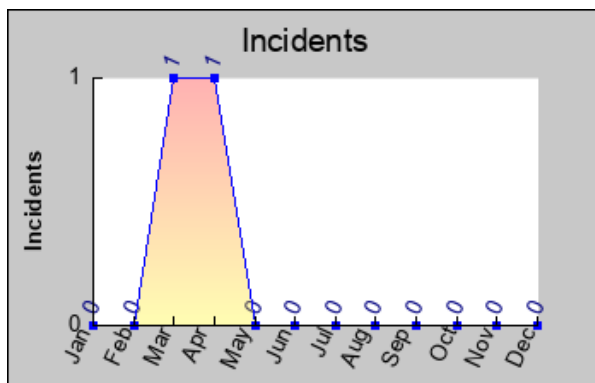
2021



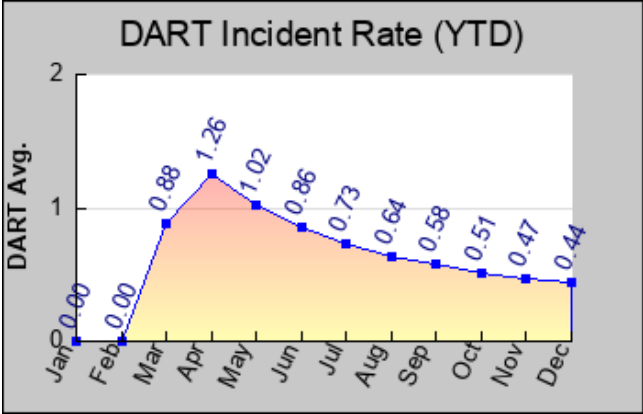
4. When was this innovation implemented and when were positive results first apparent (provide month and year for each)?

The Advocate Program was initiated in May of 2021. We saw the numbers begin to decline in July of 2021 and continue to trend down as the mill progressed throughout the year. We carried this program into 2022 and the results were astronomical. A stellar year with a safety performance that was one for the record books; 2 incidents of which were not life changing and an end of the year report with an incident rate of 44. Without a doubt, the proof positive of Program success was secured and reflected in the Data!

2022



2022



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Facility Cooling / Heat Mitigation

Boise Cascade – Havana

Contact: Lee Pauli, Safety Coordinator

Email: LeePauli@bc.com

1. *Describe in detail the innovative/novel solution that was developed and implemented.*

Hot North Florida temperatures and the heat generation of veneer dryers and hot presses raised temperatures inside our facility to 130°+ at the roof line. With all of our heat stress prevention measures in place, we still averaged 2.25 heat stress incidents per year from 2018-2021. We worked with Moffitt Natural Ventilations Solutions to design a system to lower the ambient air temperature within our facility. In July 2022, we installed a total of thirteen Matrix vents in the roof over our dryers and hot presses to allow heat from operations to vent out of the facility. Four thirty-six-inch roof supply fans were installed over our glue line to lower air temperature for employees working on the glue line's elevated work platform.

2. *How was this innovation developed and implemented? (How was it introduced, process used, people/positions/teams involved, etc.)*

We worked with Moffitt to map out temperature zones and high-heat areas within the facility. A plan was devised on where ventilation and the addition of fans would be beneficial. Moffitt installed the vents and fans while our in-house electricians ran the conduit and wired the fans.

3. *Describe the improvements that have been achieved by the implementation of this innovation. (Explain how the solution has reduced injuries/illnesses or the risk thereof, improved safety awareness on or off the job, improved safety systems, advanced the safety program, and/or improved the flow/reliability of the production process. Provide supporting facts/data, where available).*

The temperature inside our facility has decreased significantly. Prior to this project, our facility averaged 2.25 heat stress incidents per year. Since the completion of this project, we have only recorded one heat stress first aid.

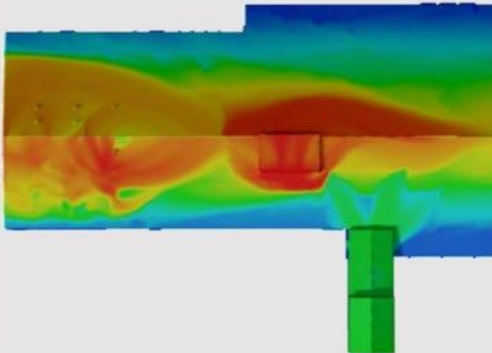
4. *When was this innovation implemented and when were positive results first apparent (provide month and year for each)?*

Innovation was completed in July 2022. During that Summer the employees working in the targeted areas of the facility commented that it was a lot cooler than years past. We were also able to lower our heat stress incident rate from an average of 2.25 to 1.

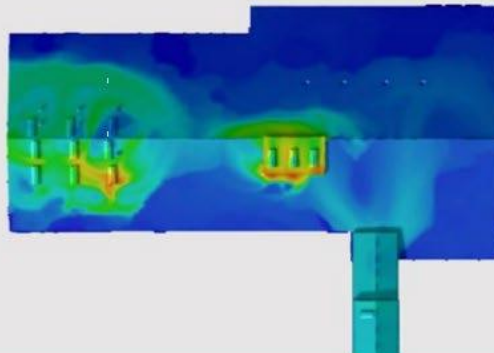
Roof Temperature



Baseline



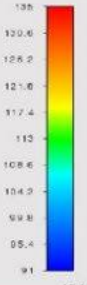
Proposed
Matrix Vent & Supply Fans



Outdoor Ambient Temperature

91°F

Static Temperature



4 fans added on glue line



Fans ducted toward workstations



View of vent from inside



View of vent from rooftop

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Glue Tank Radar Monitoring Project

Roseburg - Riddle

Contact: Dale Thorp, Safety Professional

Email: daleth@rfpco.com

1. *Describe in detail the innovative/novel solution that was developed and implemented.*

We installed an electronic level sensor that uses radar to give precise measurements on our glue tank volume. This allows for accurate continuous monitoring of our glue tank levels and real-time display on screens in glue pump area.

2. *How was this innovation developed and implemented? (How was it introduced, process used, people/positions/teams involved, etc.)*

In our industry, glue level monitoring levels are difficult due to container type and physical attributes of the glue. Previous sensors, photo electric sensors were inaccurate and inconsistent due to formaldehyde off gases and glue opacity. Radar sensors otherwise are not impacted by these attributes. It was used by reviewing current technology, contacting suppliers and utilizing electrical and controls team members to install and program.

3. *Describe the improvements that have been achieved by the implementation of this innovation. (Explain how the solution has reduced injuries/illnesses or the risk thereof, improved safety awareness on or off the job, improved safety systems, advanced the safety program, and/or improved the flow/reliability of the production process. Provide supporting facts/data, where available).*

For years we had team members climbing a ladder to check glue levels on a 20ft high tank. Since then we've improved to having a staircase to ascend. However the top of the glue tanks are a spherical shape and awkward at best to traverse while checking glue levels. These sensors prevent daily exposures to these risks, as well mitigating possible over flow and spills creating an environmental hazard along with a safety hazard when cleaning them up. The accuracy of this sensor enables us to fill the tanks accurately (within a quarter of an inch and maximize the capacity in the tank.

4. *When was this innovation implemented and when were positive results first apparent (provide month and year for each)?*

This was implemented in quarter 4 of 2022 and the use has been found extremely effective and plans are in place to use this process throughout the mill in other storage vessels.



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Gravity Operated Doors to Cover Bottom of Chutes

RoyOMartin - Oakdale

Contact: Scott Blood, Safety Manager
Email: scott.blood@royomartin.com

1. *Describe in detail the innovative/novel solution that was developed and implemented.*

The blender building at Oakdale OSB is designed with dry bins on the 4th floor. If material must be emptied, operators reverse the bottom belt and dump the material out of the building through a chute. This chute was originally open to atmosphere and had a constant updraft, especially in summer months as it is south facing. As the dry bins run to production, material constantly falls from the belts, tubing and chain into this chute. The updraft in these chutes takes this falling material and distributes it to the floors above the dry bin levels. This created housekeeping opportunities that have contributed to several fires.

2. *How was this innovation developed and implemented? (How was it introduced, process used, people/positions/teams involved, etc.)*

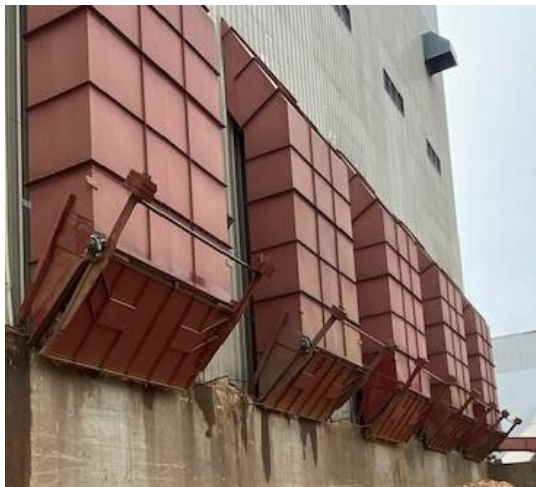
While this concept was not entirely new, Charles Lessing designed the final working model that was installed, as also led in its fabrication and installation. The gravity operated doors cover the bottoms of these chutes and eliminate this updraft.

3. *Describe the improvements that have been achieved by the implementation of this innovation. (Explain how the solution has reduced injuries/illnesses or the risk thereof, improved safety awareness on or off the job, improved safety systems, advanced the safety program, and/or improved the flow/reliability of the production process. Provide supporting facts/data, where available).*

The completion of this project has significantly reduced the amount of dust on the machinery and surrounding structure of the blender building. This prevents slip hazards, dust in eye hazards, respiration hazards and fire hazards.

4. *When was this innovation implemented and when were positive results first apparent (provide month and year for each)?*

In early 2023 this was implemented, and this addition immediately generated positive impacts to the hazards that this was intended to remove/limit.



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Hot Work Impairment Board

Tolko – High Prairie

Contact: Kaitlyn Stacey, Safety and Asset Protection Advisor

Email: marsha.bell@tolko.com

1. *Describe in detail the innovative/novel solution that was developed and implemented.*

After a catastrophic fire on the press in High Prairie in March led to the closure of the High Prairie OSB mill, the team of production and maintenance staff members quickly were redeployed to clean up the damage and debris caused by the fire and slowly prepare to deconstruct the press for removal. Much of the tasks associated involved disassembling unstable equipment, removing materials from confined spaces and rebuilding the plant. A variety of activities began taking place in a short period of time requiring co-ordination, supervision, permitting and auditing. With hundreds of contractors on site, and a new Safety Advisor to the plant, a visual hot work impairment board was created.

2. *How was this innovation developed and implemented? (How was it introduced, process used, people/positions/teams involved, etc.)*

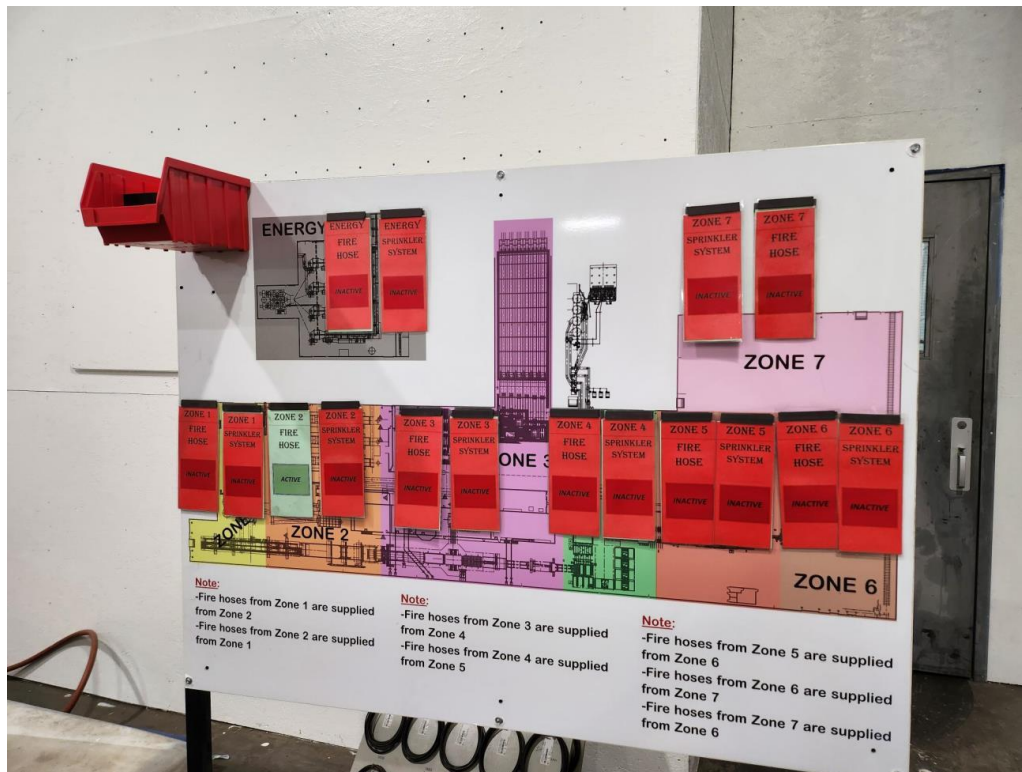
The innovation resulted because due to the volume of high-risk activities taking place concurrently, requiring a method of tracking sprinkler system impairments. The idea was raised by the safety advisor and safety facilitator and was discussed with members of the joint health and safety committee. The impairment board allows work to be tracked throughout the mill with a map and location for everyone to see, and once the impairment board was in place, it started to become the hub for tracking.

3. *Describe the improvements that have been achieved by the implementation of this innovation. (Explain how the solution has reduced injuries/illnesses or the risk thereof, improved safety awareness on or off the job, improved safety systems, advanced the safety program, and/or improved the flow/reliability of the production process. Provide supporting facts/data, where available).*

Because the site houses hundreds of contractors participating in the plant rebuild, the board offers a visual communication hub, where workers can clearly identify where impairments are taking place that may impact work planning. The board has also allowed fire watch personnel and hole watch and rescue personnel to have a clear understanding of where emergency rescue people should be deployed to in the event of an emergency. This has also created a more streamlined process for ensuring that impairments are closed out, and audits completed.

4. *When was this innovation implemented and when were positive results first apparent (provide month and year for each)?*

Implemented in July 2022, the results are that the visibility of the board makes it easier for all workers, supervisors and contractors to keep track of impairments, but has since led to the suggestion of adding Confined Space, Work at heights and other high risk activities that require permitting, temporary barricades and traffic redirection. The addition of these activities may make site co-ordination, with the large amount of contractors on site, a more visual communication tool to enhance the regular toolbox talks.



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Lathe Fire Suppression System

Boise Cascade - Thorsby

Contact: Ronnie Morris, Safety Coordinator

Email: ronniemorris@bc.com

1. *Describe in detail the innovative/novel solution that was developed and implemented.*

Thorsby EWP wanted to lower the risk of lathe fires and protect our employees. A major fire event at the lathe would cause considerable damage and put our employees at risk. After reviewing fire incidents at different wood production locations, it was clear that an engineering control with the ability to detect and automatically extinguish a fire using a clean agent effective on class A, B, and C fires was key to successfully reducing this risk. A CO₂ system designed to comply with all applicable NFPA standards and approved by FM Global was designed for our machine center. The system had to be engineered for the lathe to meet the regulatory and other requirements, and an out-of-the-box solution was not available. Adding an additional layer of protection to our existing sprinkler fire protection system placed us in a better position to safeguard against fire damage to a critical machine center and enhance employee safety by reducing the threat of fire.



Main controller and CO₂ cylinders and back up Cylinders



The extinguisher nozzle directed at the Lathe DC drive motor



Lathe end frame view during the test discharge



Lathe front view during the test discharge

2. *How was this innovation developed and implemented? (How was it introduced, process used, people/positions/teams involved, etc.)*

The process started with a region wide initiative to improve lathe Fire protection systems. We started with a review of current cleaning practices and fire protection equipment. Thorsby EWP is unique having one lathe and dryer to manufacture veneer for our LVL layup line. A down time event on the lathe from a fire incident could significantly impact the mill. The Thorsby team started researching options for additional layers of protection. In 2022 we install our CO2 system. Our maintenance team complete the pre-work needed for this project during scheduled down days. This work involved installing temperature sensors and programing work that would detect a rise in temperature due to a fire and trigger the CO2 fire suppression.

We installed audio and visual alerts to active prior to a discharge which gives employees in the area time to react. A manual pull station was installed to manually activate in any event. The result was a clean, safe, and effective fire protection system that would minimize clean up and downtime should a discharge occur.

To mitigate concerns of employee exposure to CO2 a team of safety leaders set up monitors during a test discharge. All the results were well below the exposure limits for CO2 gas.

3. *Describe the improvements that have been achieved by the implementation of this innovation. (Explain how the solution has reduced injuries/illnesses or the risk thereof, improved safety awareness on or off the job, improved safety systems, advanced the safety program, and/or improved the flow/reliability of the production process. Provide supporting facts/data, where available).*

A clean, safe, and effective fire suppression which lowers our risk for property loss and employee injury from a lathe fire. The system requires little maintenance and is cost effective compared to damage that could occur during a fire. If a discharge occurs maintenance can reset the system within minutes due to our reserve CO2 cylinders. The vendor can refill the CO2 cylinders the within 48 hours. Other facilities in our division have reached out for more information to possibly install something similar on their lathes.

4. *When was this innovation implemented and when were positive results first apparent (provide month and year for each)?*

Implementation of the project was in August of 2022 resulting in immediate positive results to employee safety and a fire prevention standpoint.

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Light and Sound Bar Innovation

RoyOMartin - Chopin

Contact: Joey Norment, Safety Manager

Email: joey.norment@royomartin.com

1. *Describe in detail the innovative/novel solution that was developed and implemented.*

In an effort to reduce equipment damage / personal injury from forklifts and contact with overhead electrical tray installations; our front-line leadership worked with the electrical department in the problem-solving process. The Electrical / Leadership Team designed a system to detect when a forklifts boom is too high. The boom contacts the PVC pipe which swings, causing the proximity switch to unmake, triggering an alarm, and flashing lights. The units will be installed where low clearance cable trays or other objects that may be stuck.

2. *How was this innovation developed and implemented? (How was it introduced, process used, people/positions/teams involved, etc.)*

The team utilized a piece of 6" PVC pipe that was hung with cables and placed directly in front of overhead conduit lines. The system works off a proximity device that looks down at a metal placard mounted on the PVC pipe itself. If that metal placard moves at all; to where the proximity switch can't see it (meaning the bar has been hit or bumped by something), it will sound a Loud Audible Alarm that will continue to sound until the pipe has quit swaying or the metal placard is back at non motion. Additional LED light strips were installed on the front of the PVC pipe that can easily be seen by lift drivers, mobile equipment operators and crane operators that must travel of work within close proximity of overhead conduit lines.

3. *Describe the improvements that have been achieved by the implementation of this innovation. (Explain how the solution has reduced injuries/illnesses or the risk thereof, improved safety awareness on or off the job, improved safety systems, advanced the safety program, and/or improved the flow/reliability of the production process. Provide supporting facts/data, where available).*

The placement of these physical impact - motion detectors has eliminated damage to overhead conduit trays and lines in two separate locations in which they have been installed. The units visual awareness as well as the motion sensing proximity device has prevented potential injury, costly damage and down time associated with repairs to overhead electrical components and structures previously experienced within these areas.

4. *When was this innovation implemented and when were positive results first apparent (provide month and year for each)?*

The light bar – motion sensing devices were installed during the last quarter of 2022 and since installation has effectively worked and prevented any additional damage and or down time in these areas preventing potential injury, damage, or unnecessary downtime. Attached below are pictures of the installed early warning devices.



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Mobile Fall Protection System

Roseburg - Riddle

Contact: William Hill, Safety Manager

Email: William.hill@rfpco.com

1. *Describe in detail the innovative/novel solution that was developed and implemented.*

Roseburg Forest Products / Riddle Plywood has historically struggled to identify the safest methods for conducting tasks at heights that require fall protection. As the extremely large plywood mill has many production machine centers, that often limit the opportunities for engineered overhead tie off points for fall protection, we have purchased and began implementing the incredibly innovative safety procedure of utilizing a mobile fall protection system.

2. *How was this innovation developed and implemented? (How was it introduced, process used, people/positions/teams involved, etc.)*

This equipment was researched and identified by Riddle Plywood Maintenance and Reliability Managers. After having a close call related to improper fall protection, these two managers began to brain storm ideas to provide true engineered solutions to keep our crews safe and provide the ability to complete many tasks while meeting state OSHA, and company fall protection standards. Riddle Plywood quickly used funds that were allocated as safety discretionary funds to purchase and outfit our team with this innovative safety feature of a mobile fall protection system that can be used with up to five people tied off at one time.

3. *Describe the improvements that have been achieved by the implementation of this innovation. (Explain how the solution has reduced injuries/illnesses or the risk thereof, improved safety awareness on or off the job, improved safety systems, advanced the safety program, and/or improved the flow/reliability of the production process. Provide supporting facts/data, where available).*

Because of the implementation of this equipment, Riddle Plywood has been able to complete many tasks and preventative maintenance items that historically would only be able to be completed once a year. Because of this innovative safety feature, we have been able to work above machine centers that would have required the entire department to shut down for multipole days in order to install temporary scaffolding or use mobile equipment such as man lifts that often times could only partially reach the areas that needed to be reached for the projects. Since installing the equipment, Riddle Plywood has had zero incidents or near misses, and have increased the preventative maintenance percentage in these hard to access areas by more than 65%.

4. *When was this innovation implemented and when were positive results first apparent (provide month and year for each)?*

Equipment was implemented in September of 2022. Results were identified as soon as the equipment was put into use.





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Mobile Lifeline

Resolute – St-Prime

Contact: Jessica Dubois-Martel, General Manager

Email: jessica.dubois-martel@resolutefp.com

1. *Describe in detail the innovative/novel solution that was developed and implemented.*

In our Ijoist plant, we do rail shipments, (approximately 20 rail cars a week). After a railcar is loaded, operator has to go on top to fix wires. We did not have any fixed lifeline. Operators had to fasten his lifeline directly to each rail car. He had to climb with a section of his line on his shoulder. He had to go up and down three times on the railcar to secure his lifeline and start to fix the wires with help of a co-worker. Another safety issue with this method is that the employee at the top of the rail car had his attachment point near his feet. There was a tripping risk. We decided to work on those safety issues by trying to eliminate risks at sources. We had 4 constraints to keep in mind.

1. We can not move railcar by ourselves, so a permanent structure wasn't an option
2. Decrease tripping and falling risks
3. Increase efficiency (decrease time to secure a railcar)
4. Budget. (a permanent lifeline cost was around 200 000\$)

We worked with an engineering firm to develop a portable lifeline that we can move with our machines. The lifeline will be developed with a special connector to fit on our Volvo, to permit a safe handling.

2. *How was this innovation developed and implemented? (How was it introduced, process used, people/positions/teams involved, etc.)*

This innovation was develop jointly with the yard supervisor, the project engineer and the engineering firm. The yard supervisor implemented it with all the employees related to yard department. We built a committee to maximize the implantation. There was an actions log to go through all steps for a safe usage. (We had to move light poles, find a way to remove ice on winter, find a place to park the lifeline when we are not using it etc.)

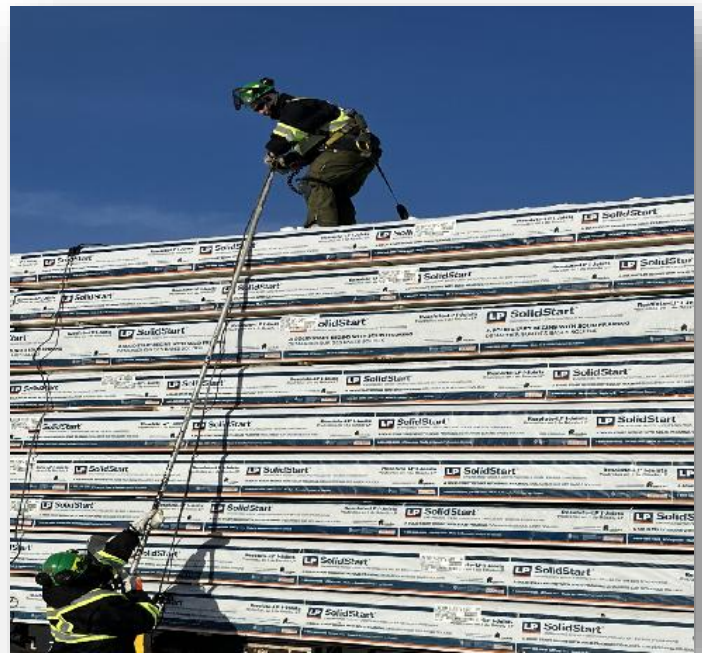
3. *Describe the improvements that have been achieved by the implementation of this innovation. (Explain how the solution has reduced injuries/illnesses or the risk thereof, improved safety awareness on or off the job, improved safety systems, advanced the safety program, and/or improved the flow/reliability of the production process. Provide supporting facts/data, where available).*

After the lifeline implementation, time to secure a railcar decrease of 15 minutes. The numbers of times operators had to go up or down in ladder decrease of 66%. Operator does not have the line at his feet, significantly reducing tripping risk.

4. *When was this innovation implemented and when were positive results first apparent (provide month and year for each)?*

The full usage of the mobile lifeline started in November 2022. Instant improvements were found.

Old process:



Mobile Lifeline



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New Hire Mentorship Program

Boise Cascade - Alexandria

Contact: Shaun Gardner, Safety Coordinator

Email: shaungardner@bc.com

1. *Describe in detail the innovative/novel solution that was developed and implemented.*

We created a new process to make onboarding and training our new team members more efficient. The process outlines the training objectives for the new hire's entire probation period. Those outlines are broken down into weekly goals. This ensures that all new hires are receiving all the same relevant information for their department. Throughout this process new hires are having bi-weekly meetings with the plant manager and safety coordinator, where the new hire can ask any questions he or she may have. At the end of the mentorship program the new hire will have a one-on-one lock out tag out interview with the plant manager. During the interview they discuss the different lock out points at the new hire's station while also confirming the new hire is familiar with the different parts of the equipment.

2. *How was this innovation developed and implemented? (How was it introduced, process used, people/positions/teams involved, etc.)*

It was a collaborative effort with input from multiple facets of the facility. The plant manager provided his overall vision for the program, supervisors provided detailed outlines of what they expect team members to know and when, the plant safety team provided first hand insight on what they wished they would've known and things they noticed new hires didn't know when working with them and the safety coordinator took all the data and created a digestible and easy to follow mentorship program. It was first introduced and explained to the supervisors and leads, where they were instructed of their roles in the program. After that, new hires were introduced to the process during orientation.

3. *Describe the improvements that have been achieved by the implementation of this innovation. (Explain how the solution has reduced injuries/illnesses or the risk thereof, improved safety awareness on or off the job, improved safety systems, advanced the safety program, and/or improved the flow/reliability of the production process. Provide supporting facts/data, where available).*

We noticed a decline in first aids and recordables among our new hires. Team members were more comfortable during the lockout process and less likely to make mistakes. By putting new hires with a mentor, it expedited the process of new hires feeling like part of the team. New hires having the ability to speak directly with safety coordinator and plant manager also provided comfort. It also gave us opportunities to coach and reinforce good habits within our team members. Recordables were cut over 50 percent, going from 7 in 2021 to 3 in 2022. Overall injuries were down from 51 in 2021 to 37 in 2022.

4. *When was this innovation implemented and when were positive results first apparent (provide month and year for each)?*

The process was implemented in February of 2022. We were unable to see the full results until the end of the year. Then we could look at our injury and incident records based on date of hire. However, subtle changes could be noticed starting in June or July, when going over data I could see that our injury numbers and our lagging indicators were trending in positive directions.

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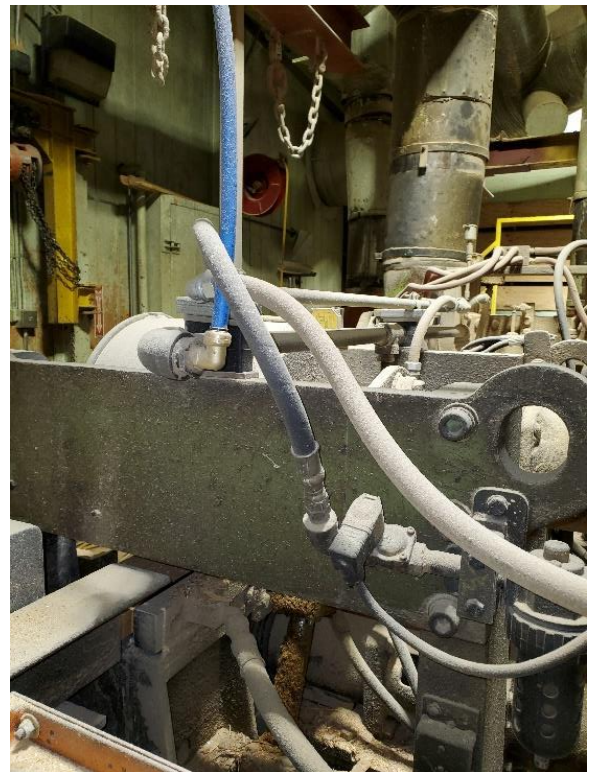
Planer Fire Prevention System

Weyerhaeuser - Kalispell

Contact: Ethan Mahrt, Safety Manager
Email: ethan.mahrt@weyerhaeuser.com

1. *Describe in detail the innovative/novel solution that was developed and implemented.*

We installed a misting system at the planer to moisten wood and wood debris as it passes through the planer. This system will come on every 5 minutes for 20 seconds misting any wood debris build up. Reducing the risk/ potential of friction fire and general fires at the planer. Picture 1 is the actual misting head, pictures 2 is the misting head water supply as it enters the planer, pictures 3 is remaining water line leading into the planner, and picture 4 is a close-up picture of the misting head.





2. *How was this innovation developed and implemented? (How was it introduced, process used, people/positions/teams involved, etc.)*

After a fire event in the planer the mills investigative team which consisted of Ethan Mahrt Safety Manager, Steven Schaller Maintenance Supervisor, Jerry Dotty Superintendent, and Bill Berge Maintenance Superintendent. This team developed the mister as a solution to reducing the risk of fire in this area. The original idea was brought up by Steven Schaller the Maintenance Supervisor. Once the solution was discussed as an investigative team, the process to develop a work plan was written up again by Steven Schaller. The idea and work plan were discussed with Weyerhaeuser's fire protection manager Joel Gaither as an investigative team. Once this idea was approved as an effective means for fire prevention at the planer the project to install the mister was under way. In November 2022 Hank Pieper and Cory Lengstorf installed this system. This innovative idea is being discussed as company standard for all other Weyerhaeuser planers.

3. *Describe the improvements that have been achieved by the implementation of this innovation. (Explain how the solution has reduced injuries/illnesses or the risk thereof, improved safety awareness on or off the job, improved safety systems, advanced the safety program, and/or improved the flow/reliability of the production process. Provide supporting facts/data, where available).*

Since the installation there was a change in the moisture content of the wood debris in the planer. This moisture has significantly reduced the risk/ potential of fires in the planer room. The observations were immediate. It has also been noted that the moisture has helped expand the sharpness and life span of the planer blades.

4. *When was this innovation implemented and when were positive results first apparent (provide month and year for each)?*

November of 2022 this innovated idea was installed at the planner by Hank Pieper, Millwright, and Cory Lengstorf, Electrician. The results were immediate. The moisture content of the wood debris had increased, which reduced the risk of fires. It was also noted that the moisture is helping expand the lifespan of the planer blades.

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Planer Side Head Project

Boise Cascade – Homedale

Contact: Antonia Vasquez, Safety Coordinator

Email: antoniavasquez@bc.com

1. *Describe in detail the innovative/novel solution that was developed and implemented.*

The central safety committee used safety data based on past incidents, to create a Safety Action Plan. They found data that showed that most of the past incidents involved fingers, hands, and arms. To prevent more injuries to these body parts they decided to audit departments and created action plans to eliminate contact with the product.

The old design of the Finish 1 Planer required the Operator to manually hold the side head for every beam causing overexertion. A second employee was also needed and at times caused near misses due to poor communication with the Operator.

A design was created to automatize the planer side head and eliminate the need for the operator to remain inside the planer as well as the need for the additional employee. This reduced the possibility of an incident from miscommunication between the two employees as well as a reduction in muscular strain exposure.



In the past, every piece of equipment inside the planer had a startup button. With the innovation they added a panel that includes all the startup buttons, so they are all in one spot.



Outside of the planer a panel with Emergency Stop buttons, Start/Stop, and Reverse/ Forward were installed so the planer operator can control it without having to be inside all the time.



Once the beam exits the planer it goes to the Beam Saw Operator to be checked for squareness, measured, and cut as needed. A screen was placed with the innovation to assist the Planer Operator see when it is clear to feed the next beam.



Planer Operator feeding the planer.

2. *How was this innovation developed and implemented? (How was it introduced, process used, people/positions/teams involved, etc.)*

A startup checklist was completed by the startup team which included a CSC member, planer operator, supervisor, and plant manager. (See attachment) The Planer SOP was revised, and operator trained on the new changes.

3. *Describe the improvements that have been achieved by the implementation of this innovation. (Explain how the solution has reduced injuries/illnesses or the risk thereof, improved safety awareness on or off the job, improved safety systems, advanced the safety program, and/or improved the flow/reliability of the production process. Provide supporting facts/data, where available).*

In the past, planer operator had to manually hold side head inside planer, putting them at risk for strain on their hands. They were also exposed to long hours of high noise levels; with the innovation the planer operator does not have to remain inside the planer during the work process. The planer operator is now able to feed and run the planer from outside of the planer room, thus eliminating the human to product contact.

4. *When was this innovation implemented and when were positive results first apparent (provide month and year for each)?*

The innovation was implemented 9/22, after the completion of a startup inspection and revision of the SOP. Positive results were instantly apparent with the Planer Operator/feeder no longer having to remain inside the planer for most of the day, where noise levels are high. Also, eliminating the human to product contact.

Safety Start-Up Checklist for New or Modified Equipment

Equipment L1 PLANER SIDEHEAD

Date 9-19-22

START-UP INSPECTION TEAM MEMBERS

Jose Lomeli Roberto Ameyrita
Paulo DeCastro

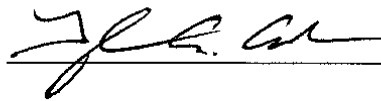
COMPLETE CHECKLIST PRIOR TO PRODUCTION START-UP.

- ☒ YES ☐ NO ☐ N/A 1. All drives, sprockets, pulleys, and gears are guarded with either permanent or temporary guards.
- ☒ YES ☐ NO ☐ N/A 2. Shielding has been provided to protect against flying or falling materials.
- ☒ YES ☐ NO ☐ N/A 3. Adequate, safe access is provided for routine maintenance work on all motors, bearings, drives, photo cells, and areas that require regular cleaning.
- YES NO ☒ N/A 4. Stairways or floor surfaces able to carry 5 times normal live weight or minimum of 100 lbs. moving concentrated load
- YES NO ☒ N/A 5. All overhead obstacles are guarded, padded, or appropriately marked.
- ☒ YES ☐ NO ☐ N/A 6. The area has been inspected for sharp objects that could cut or bruise if bumped.
- ☒ YES ☐ NO ☐ N/A 7. Equipment and personnel are guarded from main rolling stock aisles and roadways with permanent or temporary barriers.
- ☒ YES ☐ NO ☐ N/A 8. Traffic areas are free of obstacles.
- ☒ YES ☐ NO ☐ N/A 9. All in-running nips are guarded, barricaded, and/or labeled.
- ☒ YES ☐ NO ☐ N/A 10. All automatic machinery is guarded, barricaded, and/or labeled.
- YES NO ☒ N/A 11. All hoists, cranes, and lifting devices have been properly tested and labeled for capacity.
- ☒ YES ☐ NO ☐ N/A 12. All piping has been properly insulated, barricaded, and/or labeled.
- ☒ YES ☐ NO ☐ N/A 13. All energy controls, disconnects, and blocking/pinning devices are installed, tested, and labeled. This includes all ☒ electrical, ☒ hydraulic, ☒ pneumatic, ☒ mechanical energy, and ☒ gravity sources. These devices are located for maximum ease and to facilitate lockout compliance.
- ☒ YES ☐ NO ☐ N/A 14. Adequate lighting is in place and is properly guarded.

- ☒ YES ☐ NO ☐ N/A 15. All machinery is properly grounded, and has been verified by a licensed electrician.
- ☒ YES ☐ NO ☐ N/A 16. All equipment has been visually inspected for damage, leaks, and is safe operating condition.
- YES ☐ NO ☒ N/A 17. Approved and standard means of access is provided by means of stairs, ladders, or ramps for elevation changes of 19" or greater.
- YES ☐ NO ☒ N/A 18. All elevated platforms, stairs, and ladders, 4 feet or more above grade level, have toe boards and hand rails. Fixed ladders more than 20 feet tall have cages.
- ☒ YES ☐ NO ☐ N/A 19. Necessary warning and hazard signs are in place.
- ☒ YES ☐ NO ☐ N/A 20. Energy control procedures have been written or revised.
- ☒ YES ☐ NO ☐ N/A 21. JSAs and/or SOPs have been written, revised, or temporary provisions are in place.
- ☒ YES ☐ NO ☐ N/A 22. All affected employees are trained in applicable energy control procedures (i.e. lockout) and safe work practices (i.e. JSAs and/or SOPs).
- ☒ YES ☐ NO ☐ N/A 23. A "personal protective equipment assessment" has been conducted and all required PPE gear has been identified (i.e. eye & face protection, proper footwear, hearing protection, head protection, respiratory protection, hand & arm protection, etc.).
- ☒ YES ☐ NO ☐ N/A 24. Ergonomic issues are addressed to minimize possible sprains, strains, and repetitive motion injuries.
- ☒ YES ☐ NO ☐ N/A 25. Fire protection system such as sprinkler systems, extinguishers, and/or alarms, are in place – and all systems are energized.
- ☒ YES ☐ NO ☐ N/A 26. Operator considerations have been taken into account for safety, ergonomics, and efficiency such as: closed circuit TV monitoring, mirrors, visual contact, hand placement, and head, arm, leg, and foot movement.

ALL HAZARDS IDENTIFIED BY THE START-UP INSPECTION TEAM SHALL BE LISTED AND ATTACHED TO THE CHECKLIST REPORT AND ALL RECOGNIZED HAZARDS SHALL BE ADDRESSED PRIOR TO START-UP.

PROJECT TEAM LEADER SIGNATURE:



L1 Planer & Sidehead LOTO Procedures

1. Prepare for shutdown
2. Notify all affected employees of the activities and equipment involved
3. Shut down the equipment
4. Isolate the equipment from the hazardous energy source
5. Dissipate residual energy
6. Apply applicable lockout or tagout devices
7. Verify that the equipment is properly isolated

Utilize cable to lockout all disconnect on MCC.

New MCC bucket identification:



1 Main Circuit Breaker	9 Planer Feed Motor	17 *not label*	25 #7 Outfeed Roll
2 Side Head Exhaust Fan	10 Planer Top (Feed Soft Start)	18 #3 Infeed Roll	
3 #4 Infeed Roll	11 Spare	19 #1 Infeed Roll	
4 Spare	12 480 V Receptical Feed	20 #2 Infeed Roll	
5 Spare	13 Planer Bottom (Feed Soft Start)	21 #5 Outfeed Roll	
6 Spare	14 480 V Receptical Feed	22 #6 Outfeed Roll	
7 New Left Side Head	15 Distribution Panel	23 Planer Outfeed Hold Down Roll	
8 New Right Side Head	16 25KVA Transformer	24 Planer Jack Screws	

For Locking out Planer and Sideheads:

Step 1.

Run cable through buckets:

3, 7, 8, 9, 10, 13, 18, 19, 20, 23, 24

Then place group lock on end of cable.

Step 2.

Disconnect air on south wall by VFD with group lock

Step 3.

Place lock on group lock box and complete LOTO process per Hazardous Energy Control Policy.

1. Planer line stop
 - A. Once pushed it stops the planer feed drive and drive roll 4 from operating
 - B. Once reset, the planer feed drive and drive roll 4 must be manually restarted
2. Drive rolls 1-3 line stop
 - A. Once pushed it stops drive rolls 1-3 from operating
 - B. Once reset drive rolls 1-3 must be manually restarted to operate again
3. Maintenance mode
 - A. Once initiated, a indicator light comes on confirming selection
 - B. Allows only the planer top, bottom, side head 1, side head 2, and the routers to be started
 - C. Once initiated it disables the photo eye and solenoids for the side heads, as well as disables the pros switch and solenoids for the hold down roll
4. Forward/Off/Reverse
 - A. Forward, allows, in any order, for the planer top, bottom, side head 1 and side head 2, the routers, and hold down roll to be started
 - B. Once all of the above mentioned motors are made, it allows the planer feed drive to be started
 - C. If any of the above motors are stopped at any time in forward, it will subsequently shut off the planer feed drive and drive roll 4
 - D. Once the planer feed drive is started, then drive roll 4 can be started
 - E. Changing the position of this switch from forward, to off, will shut off the entire line, excluding drive rolls 1-3 and the exhaust fan
 - F. Reverse, will not allow the planer top, bottom, side head 1, side head 2, routers or the hold down roll to operate, you will only be able to start the planer feed drive, once the planer feed drive has started, then you can start drive roll 4 *planer jack must be opened up manually prior to starting feed drive and drive roll four in reverse
5. Drive rolls 1-3 start stop, star†allows drive rolls 1-3 to start, stop, stops drive rolls 1-3
6. Exhaust fan can be started at any time, it wont effect the operation of the line
7. Planer jack up and down button is local to the planer and can be operated at anytime, in line with the up and down inputs are limit switches for safe operation
8. Drive rolls 5 and 6 are controlled from the beam saw operators panel, control power is common to planer shack panel, the button is momentary spring loaded, holding forward will allow drive rolls 5 and 6 to move forward, releasing it will stop the motors, holding reverse will allow the motors to run in reverse, releasing it will stop the motors

Pressing Area Lube Lines

Weyerhaeuser – Grayling

Contact: Daniel Murphy,, BFP Function Coach

Email: Daniel.murphy@weyerhaeuser.com

1. *Describe in detail the innovative/novel solution that was developed and implemented.*

Every Downday, by-weekly shut down maintenance day, we have several points on all 16 levels of our loader for our press that have to be lubricated. Initially this would require a team member to use a fall protection harness and physically climb the cage of the loader. Obviously, this creates many hazards. The team came up with the idea to install lube lines that allow all points of the loader to be greased from a safe location without the need of fall protection or climbing on equipment. The photos show the lube lines as well as a platform that was installed where the individual doing the greasing can safely and comfortably stand to complete the task.

2. *How was this innovation developed and implemented? (How was it introduced, process used, people/positions/teams involved, etc.)*

The concern was brought up at a quarterly function meeting. Pressing area Operators, Press PM Tech's, and Lubrication Tech's developed the plan to install the lube lines and location of the platform.

3. *Describe the improvements that have been achieved by the implementation of this innovation. (Explain how the solution has reduced injuries/illnesses or the risk thereof, improved safety awareness on or off the job, improved safety systems, advanced the safety program, and/or improved the flow/reliability of the production process. Provide supporting facts/data, where available).*

Members no longer have to climb the frame/cage of the loader with SRL attached to their back while carrying a grease gun. Fall hazard is eliminated. This task can be safely done while standing on the platform. Also, time to complete this task is significantly reduced.

4. *When was this innovation implemented and when were positive results first apparent (provide month and year for each)?*

This was completed in Q4 of 2022. Positive results and elimination of the fall hazard recognized immediately after installation.



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Roadway Safety Improvements

Roseburg Forest Products – Coquille

Contact: Ben Nelson, Safety Professional

Email: benjaminn@rfpc.com

1. *Describe in detail the innovative/novel solution that was developed and implemented.*

This project has three main components broken down to even more individual improvements. First, widened the roadway at the corner leading down to the main entrance. This added almost twenty feet of extra room in the corner and we also placed large cement blocks at the edge. Second, the speed limit was painted on the roadway below the corner, radar speed sign added between the corner and crosswalk, painted crosswalk at the base of the hill under improved lighting, and some signage at the bottom of the hill as well. (Near the crosswalk) Third, we installed a large cement block wall at the edge of the roadway between plant five and six. This secured the bank, prevents equipment from driving off the edge of the road, and eliminates pedestrians trying to walk down the steep dirt bank.

MAIN ENTRANCE CORNER



ROADWAY BETWEEN PLANT FIVE AND SIX



TRAILER ROLLED OVER AT MAIN ENTRANCE CORNER



MAIN ENTRANCE CORNER, ROAD, AND WALKWAY.





ROADWAY BETWEEN PLANT FIVE AND SIX IMPROVEMENTS



2. *How was this innovation developed and implemented? (How was it introduced, process used, people/positions/teams involved, etc.)*

This was a team effort with both admin and hourly team members. What started us on this path to make these improvements were from multiple incidents, near misses, and hazard reports that were turned in to the safety department. We had a couple close calls with truck drivers cutting the corner coming down the hill and one instance where a truck driver rolled their trailer on its side in that corner. Second, at the bottom of the hill where our team members walk across the road heading into work from the parking lot, we had reports of drivers driving too fast and not paying attention to pedestrians crossing the road. Third, the bank along the roadway between plant five and six had a steep incline from the roadway down to the railroad tracks where we've had a couple near misses with equipment and pedestrians along the bank.

3. *Describe the improvements that have been achieved by the implementation of this innovation. (Explain how the solution has reduced injuries/illnesses or the risk thereof, improved safety awareness on or off the job, improved safety systems, advanced the safety program, and/or improved the flow/reliability of the production process. Provide supporting facts/data, where available).*

One part of this project, the main entrance to the facility, probably affects more people's safety than the other. With all the vehicle traffic on this corner and roadway, making the improvements there not only affect our team members driving down the hill and walking into work, but it also improves the safety of visitors, vendors, and truck drivers entering the facility. The roadway between plant five and six is used all day every day each day we are operating. Whether it's truck drivers, maintenance, transfer drivers, pedestrians, etc., all of these people will be kept safer with these simple yet important improvements.

4. *When was this innovation implemented and when were positive results first apparent (provide month and year for each)?*

We finished up the first stage of this project in February of 2022 and received immediate positive feedback from our equipment operators and outside truck drivers as well. This project made it a safer task for truck drivers delivering veneer to the facility and for our equipment operators traveling between plant five and plant six. It also helps keep our team members safer as they walk from the parking lot into the facility.

Later this year we will be adding three other items to this project. First, we will be installing a short cyclone fence at the top of the cement block wall between plant five and six. Second, we plan on painting the edges of all our roadways in the facility will "glow in the dark" paint to help drivers identify the roadway edge throughout the facility. Third, we will be paving the corner where we added onto the roadway, leaving the large cement blocks at the edge of the corner.



Robotic Panel Repair Line

PotlatchDeltic – St.Maries

Contact: Allen Shoemaker, Mill Manager
Email: allen.shoemaker@potlatchdeltic.com

1. *Describe in detail the innovative/novel solution that was developed and implemented.*

Capital Investment and installation of the Robotic Panel Repairing line which was installed in our facility and running as of Q3 2022. This repair line eliminated 12 employees manually routing, repairing, and handling plywood panels from ¼" up to 1.5" in thickness with upwards of 50,000 repairs daily to doing it through robotics with no manual interface. The safety risk reduction of handling heavy panels, repetitive motion, debris in eyes, and sliver hazards of the job have been completely removed from our panel repairing process with this robotic implementation. We also are seeing upwards of 60% chemical usage reduction through more precise fills which results in strong safety and environmental measures by handling less chemical on site annually.

2. *How was this innovation developed and implemented? (How was it introduced, process used, people/positions/teams involved, etc.)*

This capital investment was implemented through 7 years of research and development working with the vendor to design a line that was specific to our safety and panel production needs. The team implementation and startup was through our onsite teams working together with Raute for the betterment of safety and production as we analyzed, installed and commissioned this highly innovative new patching line.

3. *Describe the improvements that have been achieved by the implementation of this innovation. (Explain how the solution has reduced injuries/illnesses or the risk thereof, improved safety awareness on or off the job, improved safety systems, advanced the safety program, and/or improved the flow/reliability of the production process. Provide supporting facts/data, where available).*

The line has eliminated manual panel handling and repairing with 50,000 less exposures daily to our employees. Safety interlocks automatically shut down the equipment anytime a gate/access point is opened eliminating all physical hazards to exposure. The robotic repair line has allowed for better continuous flows reducing the forklift traffic, along with a reduction of forklift to pedestrian interactions with the result of 12 less manual operators working in the area.

In 2022 prior to the commissioning of the new robotic line we had a manual patchline operator receive a recordable shoulder injury handling panels. Since the robotic line has started up we have eliminated that handling risk.

We have not experienced any of the manual line safety issues including; debris in the eyes, panel handling, ergonomics or carpal tunnel since the implementation of the robotic repair line.

4. *When was this innovation implemented and when were positive results first apparent (provide month and year for each)?*

Go Live was July of 2022. Since that time, we have received zero safety incidents from the robotic repairing line proving 6mths of success in exposure reduction/elimination. We believe this to be just the beginning to our safety success story of the robotic patching line.

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Safety Auditing

Boise Cascade - Chapman

Contact: Tim Stewart, Safety Coordinator
Email: timstewart@bc.com

1. *Describe in detail the innovative/novel solution that was developed and implemented.*

To better improve awareness of safety, Chapman has incorporated the use of the iAuditor app to perform OSHA equivalent audits of each department. iAuditor allows users to take pictures, notate, and email completed audit reports to the leadership team. Using this app has created an awareness of hazards that supervisors and superintendents may have not previously recognized.

Powered by 



Safety Walk Checklist

Complete

Client / Site

GE/LY

Conducted on

30.01.2023 12:28 CST

Prepared by

Tim Stewart

Audit

Work Areas

Do you wish to examine work areas on this safety walk?

Yes

General Housekeeping (neat, tidy, dust free)

At Risk



Photo 1



Photo 2



Photo 3



Photo 4



Photo 5

Walkways (free of debris and obstructions)

At Risk



Photo 6



Photo 13



Photo 14



Retention: CoastalUSA - Never Delete



Stewart, Tim



To: Lowe, John; Williams, Christopher +2 others

Tue 1/31/2023 8:54 AM

Cc: Cruse, Billy



Safety-Walk-Checklist.pdf

853 KB



Good morning,

I have attached the results of yesterday's audit of the GE.

Please let me know if you have any questions.

Thanks,

Tim



Reply



Reply all



Forward

2. *How was this innovation developed and implemented? (How was it introduced, process used, people/positions/teams involved, etc.)*

iAuditor was used by the Safety Coordinator at a previous facility and was presented to selected hourly employees from each department for consideration to use at the Chapman facility. After reviewing a sample audit report with these selected Team Members, it was agreed that iAuditor would be beneficial in assisting Chapman to achieve a safer work environment. An auditing schedule was created so that each department is audited on a weekly basis. The result of the audit is immediately emailed to all leaders of the department audited, and to the plant manager. In some cases, safety concerns may be discussed in the morning management meeting in order to provide and implement appropriate corrective actions.

3. *Describe the improvements that have been achieved by the implementation of this innovation. (Explain how the solution has reduced injuries/illnesses or the risk thereof, improved safety awareness on or off the job, improved safety systems, advanced the safety program, and/or improved the flow/reliability of the production process. Provide supporting facts/data, where available).*

The results of these audits have yielded safety improvements that include, but are not limited to, the installation of additional machine guarding, barriers for pedestrians and forklifts, and ensuring fire safety equipment is checked on a monthly basis. In some cases, the results of these audits are discussed with Team Members in their pre-shift meetings. This has assisted in the increased awareness of safety issues by our hourly Team Members. We've noticed that Team Members feel more confident in notifying

leadership of possible hazards; especially since they've noticed safety issues are addressed immediately.

4. *When was this innovation implemented and when were positive results first apparent (provide month and year for each)?*

iAuditor was initiated in January 2022. Supervisors and superintendents were immediately receptive to the audits as they saw these as opportunities to address safety issues within their departments. Around May 2022, more hourly Team Members would point out safety concerns as the audits were conducted.

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Safety Engagement Program

Smartlam – Dothan

Contact: Mark Farmer, ESH Manager

Email: mark.farmer@smartlam.com

1. *Describe in detail the innovative/novel solution that was developed and implemented.*

While the elimination of safety hazards is a key component of a site Safety program, studies have shown that the great majority of workplace injuries are caused by unsafe behaviors. The use of a simple engagement process where two-way, adult to adult conversations are frequently held where safe behaviors are reinforced and unsafe behaviors corrected in a non-punitive manner. Simple visual cues such as a thumbs up are used to provide immediate feedback to the employee.

2. *How was this innovation developed and implemented? (How was it introduced, process used, people/positions/teams involved, etc.)*

This process was introduced in July 2022 when several new site management members joined the company and began implementing it based on previous experience and positive results obtained. All management personnel participate in this process, so the message is consistent and clear to all employees on the floor. The Safety department regularly provides feedback and gives examples of good engagement and those that need improvement.

3. *Describe the improvements that have been achieved by the implementation of this innovation. (Explain how the solution has reduced injuries/illnesses or the risk thereof, improved safety awareness on or off the job, improved safety systems, advanced the safety program, and/or improved the flow/reliability of the production process. Provide supporting facts/data, where available).*

In 2020, 2021 and 1st half 2022 TCIR and DART rates were much higher than industry averages. Significant improvement has occurred in 2nd half 2022; recordable cases were reduced by 80% and no DART cases occurred. Not only has adherence to basic standards improved, but the moral has also improved since employees understand the standard is not just a rule but to prevent injuries, so employees look out for their own Safety as well as their fellow employee's Safety.

4. *When was this innovation implemented and when were positive results first apparent (provide month and year for each)?*

This process was started in July 2022 and the results were almost immediate when unsafe behaviors observed declined significantly. These improvements are more notable in that site headcount increased 15% and production increased 37% without the installation of additional equipment.

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Safety Quiz Show

Boise Cascade - Oakdale

Contact: Dwayne Hodge, Safety Coordinator

Email: dwaynehodge@bc.com

1. *Describe in detail the innovative/novel solution that was developed and implemented.*

The safety team at Oakdale operations developed a novel solution to increase employee engagement during training. The standard training format consisted of films, slide presentations, and lectures. The team wanted a way to check on learning that would get people talking and most importantly, thinking.

2. *How was this innovation developed and implemented? (How was it introduced, process used, people/positions/teams involved, etc.)*

The safety coordinator found an online template for a popular quiz show format that could be modified to the desired subject matter. The safety committee, comprised of hourly team members, helped compile lists of topics and questions that were then entered into the template. The team ordered buzzers to enhance the dynamics and foster the sense of participating in a real quiz show. The quiz show format was first introduced as part of safety orientation for new hires. Traditional classroom instruction was utilized to educate new hires on areas that included topics such as mill policies, procedures, documentation, and safety-related systems. Newly hired employees were then introduced to the quiz show format to test their knowledge of the material covered during orientation. Through random selection, the contestants were selected to be seated behind the buzzers and the rounds of questioning began. The score was kept by the safety committee leader. Local vendors were approached about the idea and several contributed swag items to be used as prizes; this further enhanced the game show mystique. Prizes were available for the winners, although everyone received consolation prizes for participating in the pilot sessions of the program.

3. *Describe the improvements that have been achieved by the implementation of this innovation. (Explain how the solution has reduced injuries/illnesses or the risk thereof, improved safety awareness on or off the job, improved safety systems, advanced the safety program, and/or improved the flow/reliability of the production process. Provide supporting facts/data, where available).*

The review of safety material in a fun and engaging manner has definitely led to increased safety awareness within the mill. During each trial session, the atmosphere in the training center was electrified. Every single person present was engaged in the safety conversation, and of course progress of the game. Contestants were challenged by not only the questions and answers but also some light-hearted heckling by the audience members. At the end of the day everyone walked away from each session discussing safety in a manner that had rarely been seen within the facility.

4. *When was this innovation implemented and when were positive results first apparent (provide month and year for each)?*

The safety quiz show format was implemented for new hire orientation in September of 2022. The response was both positive and instantaneous. The success of the trial sessions has led to a second version being developed that covers specifically forklift safety. The second version was implemented in February 2023. All primary forklift drivers in the mill participated in the second activity as part of a refresher course. The intent moving forward is to develop several versions and possibly other game show styles. The goal is to think outside the box in order to reach individuals and improve the safety culture here at Oakdale.

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Sander Guarding and Lighting Improvements

Roseburg – Coquille

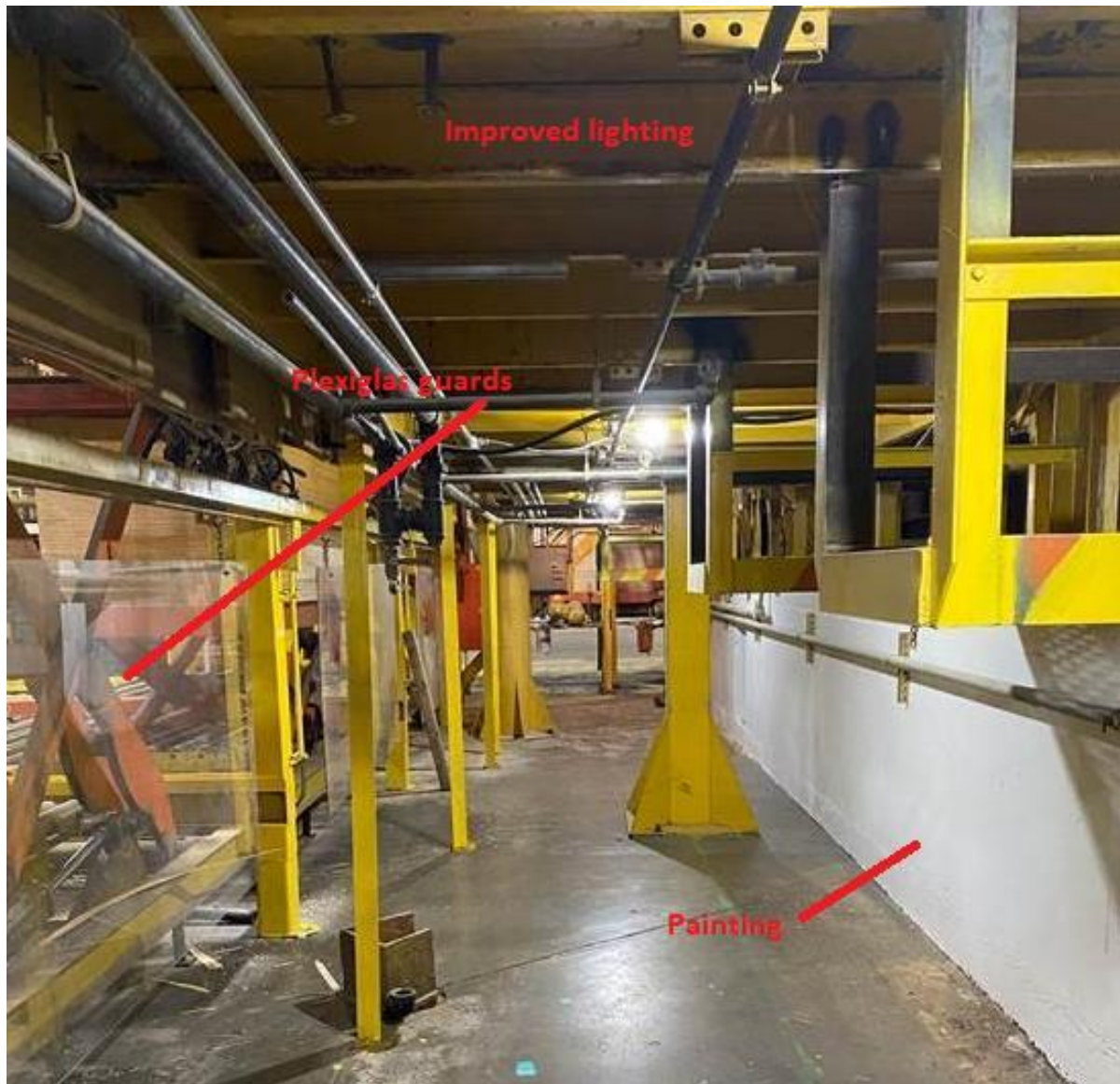
Contact:

Email:

1. *Describe in detail the innovative/novel solution that was developed and implemented.*

We improved the safety / efficiency of working around the sander on the ground floor. Team members identified problems / concerns and we addressed those concerns with improved lighting, guarding, and painting the area to make machine, guards, and overhead hazards easier to see.







2. *How was this innovation developed and implemented? (How was it introduced, process used, people/positions/teams involved, etc.)*

Team members brought to our attention that the visibility under the sander line was poor for cleanup, maintenance, and troubleshooting. We talked to our team members that work in that machine center to identify issues in the area and then possible solutions to those identified problems. When the decision was made for the improvements we again discussed them with the team members in the area in case changes needed to be made to the plan. Additionally, we couldn't just put lights in the area because of the dust hazard so we had to get creative on how to brighten up the area.

3. *Describe the improvements that have been achieved by the implementation of this innovation. (Explain how the solution has reduced injuries/illnesses or the risk thereof, improved safety awareness on or off the job, improved safety systems, advanced the safety program, and/or improved the flow/reliability of the production process. Provide supporting facts/data, where available).*

The plan was for three main changes / improvements. First, we painted the area to brighten it up and give definition to machines, platforms, etc. Second, we added lighting to the area for all around visibility. Third, we replaced plywood and expanded metal guards with plexiglas for improved visibility while still keeping our team members safe. These improvements will help with overall visibility, not only during cleanup but while performing maintenance and troubleshooting. This can prevent many types of injuries like slivers, pinch, caught it, smashed, slips / trips / falls, etc.

4. *When was this innovation implemented and when were positive results first apparent (provide month and year for each)?*

We finished these upgrades to the sander area in March of 2022. Team members immediately noticed a difference and appreciated how it affected their jobs in a positive way. Not only was the area now safer to perform cleanup, troubleshooting problems in the area is now a safer / easier task with the plexiglas guards, painting, and additional lighting.

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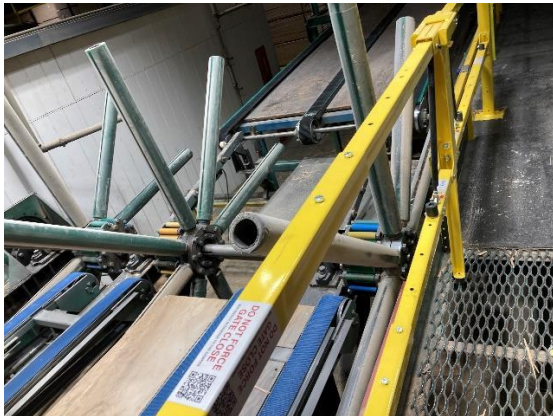
Sander Smart Gate

Weyerhaeuser – Kalispell

Contact: Ethan Mahrt, Safety Manager
Email: ethan.mahrt@weyerhaeuser.com

1. *Describe in detail the innovative/novel solution that was developed and implemented.*

A movable safety rail was installed at the sander cab to allow visibility when in operation and to provide an approved safety rail system when walking/ working on the catwalk. The Rail will move from a horizontal position to a vertical position. Operators at the sander need a full view of the panels as they pass by the operators cabs but also need to access the catwalk to inspect panels. This rail system allows the operators to have the visibility they need during operation and the safety needed to work on the catwalk. Pictures one and two are of the rail system in the horizontal or down position. Picture 3 is the rail system in the vertical or up position. Picture 4 is a close-up picture of the down position from a the back of the catwalk.



2. *How was this innovation developed and implemented? (How was it introduced, process used, people/positions/teams involved, etc.)*

The catwalk outside the sander cab never had a safety handrail system installed due to the need for visibility during operations. A fall protection system was utilized as a means to walk and work on the catwalk when needed. This system proved to be frustrating for operators to wear and use as they would walk on this part of the catwalk multiple times a day to do inspections. The safety handrail was discussed as an alternative solution to wearing a PFAS. The safety handrail is a safer, more convenient, and easier to use fall protection system. Jeremy Strey was the assigned champion to this project. He worked with the operators at the sander cab, his supervisors, and the safety action team. Eric Balch was the millwright who installed this safety handrail.

3. *Describe the improvements that have been achieved by the implementation of this innovation. (Explain how the solution has reduced injuries/illnesses or the risk thereof, improved safety awareness on or off the job, improved safety systems, advanced the safety program, and/or improved the flow/reliability of the production process. Provide supporting facts/data, where available).*

Since the installation there has been an increase in job satisfaction at the Sander cab and the desire to improve safety was increased through the mill. This was an employee lead safety project that resulted in more collaboration through the mill on safety related items. Operators at the sander cab are more likely to comply with safety SOP when working/ walking on the catwalk.

4. *When was this innovation implemented and when were positive results first apparent (provide month and year for each)?*

December of 2022 this innovated idea was installed at the Plywood Sander by Eric Balch, Millwright. The results were immediate. The risk of falling in this area was removed and the need for a PFAS was no longer needed on the catwalks. Operators' satisfaction was immediately improved.

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Signode Interlock Key Use

Louisiana Pacific – Two Harbors

Contact: Steve Ellison, EHS Manager

Email: steve.ellison@lpcorp.com

1. *Describe in detail the innovative/novel solution that was developed and implemented.*

It was determined that we needed to add another layer of safety whenever an operator needed to perform certain tasks on our signod strapping machine. The process change is as follows: Make sure the Signode platen is set on the platen latches at the top of its cycle. This must be verified that the platen is latched or lowered to rest on top of a unit or is lowered all the way to the bottom of its cycle prior to placing Signode in "Interrupt" mode. Use the key to turn the gate interlock to "Open". A green light will indicate the gate latch is disengaged and safe entry can be made. Open the gate latch and turn the key back to "Locked". Remove key and attach to the person entering the area. Following entry, the gate can be closed and latched without the use of the key.

2. *How was this innovation developed and implemented? (How was it introduced, process used, people/positions/teams involved, etc.)*

Operators and crew working in the area, along with key management personnel from maintenance, electrical, and safety worked together to conceptualize the design and installation of this process improvement.

3. *Describe the improvements that have been achieved by the implementation of this innovation. (Explain how the solution has reduced injuries/illnesses or the risk thereof, improved safety awareness on or off the job, improved safety systems, advanced the safety program, and/or improved the flow/reliability of the production process. Provide supporting facts/data, where available).*

Operators' exposure to potential crush hazard was eliminated. This provided additional steps for safe access into the signod for routine tasks that do not place the worker in direct line of fire of the platen. The improvement has been well received and enhanced the overall safety of our workforce.

4. *When was this innovation implemented and when were positive results first apparent (provide month and year for each)?*

The signode interlock Key use system was implemented in 2020 and the impact was immediate. Operators and maintenance personnel have stated this improvement is "worth its weight in gold". It has made it easier and safer for operators to perform routine tasks, and it adds an additional step to ensure the crush hazard is eliminated.

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Staged New Hire On-Boarding

Boise Cascade – Medford

Contact: Chris Lawrence
Email: chrislawrence@bc.com

1. *Describe in detail the innovative/novel solution that was developed and implemented.*

We found that new hire personnel were being overloaded with safety training in their first three days of starting their new jobs. While being overwhelmed, they were sent to their permanent shift where we would discover that the retention of the trained safety material was lacking. As a result, we set out to totally revamp our onboarding process. Under the new training process, personnel are now on-boarded over a two week process. This on-boarding process applies two hours of safety training and up to six hours of application and work observance exposure for two weeks. After the completion of the two weeks, personnel are then sent to their respective permanent shifts where they will receive additional on the job safety training. The details of the development and implementation are clearly where the difference shines. This process is long and it takes work, time, effort and commitment by all involved. It has worked so well that the commitment and execution is continuing to endure.

2. *How was this innovation developed and implemented? (How was it introduced, process used, people/positions/teams involved, etc.)*

Medford plywood leadership and safety staff worked with the region safety staff to build a comprehensive safety training. In the first day within the company, the region staff will train on general items that all employees must have. This includes the Global Harmonized System (GHS) for HAZCOM, Bloodborne Pathogens Awareness, Personal Risk Managements, Introduction to Lock Out, etc. The next day with the company, the new hires will report to the plant where they will receive introductions, a plant tour and be provided their training packages. The process is graduated and picks up where the Region training stopped. For the next two weeks personnel will check in with the office and go to their assigned mentoring locations. Mentoring locations includes watching operators at their work stations, watching overall operations and learning the work elements. Then halfway through the day, the new hires meet up with the safety coordinator for two hours of focused safety training. Over the course of the two weeks, the new hires will receive progressive learning on lock out operations and will train on all other necessary safety elements such as pedestrian safety, electrical safety awareness, emergency operations, safety committee functions, etc. This also includes a progressively deeper dive in safety training. As an example, the region safety training covers GHS as noted above, but the plant safety will cover the specific chemicals that the new hire may be exposed to. New hires will receive a minimum of three training sessions on general lock out, as noted above, which takes them from learning the concept of hazardous energy control, to using a lock out simulator, and onto practice lock out events. Note that personnel are never actually allowed to lock out for a minimum of four weeks and only after the department superintendent certifies skill development and recommends them to the plant manager for final approval to be authorized to lock out on the machine they will be operating. Training continues until personnel are able to test out of each safety element and they fully understand the material.

3. *Describe the improvements that have been achieved by the implementation of this innovation. (Explain how the solution has reduced injuries/illnesses or the risk thereof, improved safety awareness on or off the job, improved safety systems, advanced the safety program, and/or improved the flow/reliability of the production process. Provide supporting facts/data, where available).*

It became clearly evident that personnel were better retaining the trained information. A swing shift supervisor noted that he felt the new hires arriving on his shift were better equipped and more capable

to fit right into the work efforts of the workstations assigned. As well, the graveyard shift supervisor noted that personnel coming to his shift were more understanding of the operations and there was less training required on the evening shifts to compensate for the unretained information previously experienced. Work related incidents and near misses are noticeable down for the new hires being brought on board. Since starting this program, we have had no recordable injuries with new hires.

4. *When was this innovation implemented and when were positive results first apparent (provide month and year for each)?*

The Program was fully formulated in February of 2022 and further developed over the next 30 days. It became clear at that point that this program was manageable and was resulting in positive results. This came from information provided by the shift supervisors and each new hire was surveyed to determine how they felt about their learning process. Most have felt the process was very effective and some even gave recommendations for improvement. The process continues today and is resulting in new hires that are much more ready for the application of safety needed in their jobs.

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Unconventional Employee Engagement

Boise Cascade – White City

Contact: Chris Lawrence
Email: chrislawrence@bc.com

1. *Describe in detail the innovative/novel solution that was developed and implemented.*

The EWP plant leadership and safety committee collectively agree that in order to sustain a solid safety culture, personnel within the operations must be able to work together and build relationships that are beyond the norm in a manufacturing setting. Personnel must be willing to take care of each other, speak up, and work as a team. This is similar to what you would expect to find in a close-knit community. To facilitate this sustained community, the leadership and safety committee had to continue to think outside the box on building community within. It is well understood by all that such a community will be safer and do more to watch out for each other. One of the tools that the plant used in 2022 that stands out was the Halloween Costume and Holiday Ugly Sweater contests. The rules for the contest are what were used to bridge the desired safety outcome to these community-building events. The costumes must be made of material that was safe for the working conditions. There could be no parts of the costumes or sweaters that would have the potential to become entangled in equipment or machines. No part of the costumes or sweaters could prevent the use of approved PPE. The costumes and sweaters must be acceptable to all in terms of social issues. Crew themes were encouraged.

2. *How was this innovation developed and implemented? (How was it introduced, process used, people/positions/teams involved, etc.)*

Prior to the pandemic, the plant leadership used to conduct team building awareness sessions. These sessions often focused on compassion in the form of watching out for each other's safety. Such activities had to be curtailed to comply with pandemic safety standards. It was easy to see that this could hinder the community perspective of watching out for each other. The safety committee and leadership found that these Halloween Costume and Holiday Ugly Sweater competitions would be a good way to bring back some fun to safety and positive working relationships. So, dates and safety rules were set and executed on. Leadership participated with the personnel. There was a voting process to select the best costumes and sweaters that exemplified the intent of the contest.

3. *Describe the improvements that have been achieved by the implementation of this innovation. (Explain how the solution has reduced injuries/illnesses or the risk thereof, improved safety awareness on or off the job, improved safety systems, advanced the safety program, and/or improved the flow/reliability of the production process. Provide supporting facts/data, where available).*

Personnel embraced these contests and participation was high. While not everyone dressed up, the way the contest played out, all personnel were engaged. It was easy to see the conversations that were created by all. These elements were present in these contests: participants, judges, leadership involvement, teammate engagement, conversation, fun and workplace enjoyment. Personnel found it to be a pleasant time, but leadership and safety committee members found it to be a way to bringing fun back to the job and to bridge safety which is further strengthened and committed to in such a community. While it is difficult to measure, one only needed to be present to see the excitement that was returned to the operations and teams.

4. *When was this innovation implemented and when were positive results first apparent (provide month and year for each)?*

The Halloween Costume contest occurred on October 31st and the Holiday Ugly Sweater contest was held before the holiday shutdown. Positive results were nearly immediate. In walking through the plant, one could hear the conversations that carried on about the results of the contests. It is philosophical per se, but culture building for safety absolutely requires a community perspective that comes from developing workplace relationships where people watch out for each other with compassion. It starts with communication.

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Veneer Load Marking Robot

Tolko – Armstrong

Contact: Marsha Bell, Regional Safety Specialist

Email: marsha.bell@tolko.com

1. *Describe in detail the innovative/novel solution that was developed and implemented.*

The Armstrong Plywood Division historically had an operator spray-paint the grade marking on dry veneer stacks. The Stacker Attendant would disable the grade bin, reach between the stacker bins, and mark the load using an aerosol paint can.

This procedure posed multiple hazards to the Attendant and we had controls in place but our Superintendents, Rob Kersey and Russell Nordstrom wanted to explore options to further reduce the risk.

Various ideas were considered over an extended period, such as light curtains, pressure-sensitive mats, and various sensors. However, clever suggestions from our Regional Control Systems Specialist, Bob Nodelyk shifted our focus to eliminating the hazards through automation. No commercial automated options for this specific task were available, so our process controls group, safety committee members, and trades-people collectively curated a way to manufacture this device “in-house”.



Robot awaiting a load



Robot marking front side



Load advancing past robot



Robot marking back side

2. *How was this innovation developed and implemented? (How was it introduced, process used, people/positions/teams involved, etc.)*

A water-based ink spray tool was strategically affixed to a general-purpose Epson 6-axis robot, and carefully programmed. Working with trusted vendors, a variety of product comparisons, functional tests, and extensive programming went into preparing the device components for use. Great efforts to select the robot and spray nozzle type, paint and ink options, test marking consistency and clarity, and install an HMI to ensure the correct grade is being marked extended over numerous months.

The completed robot was installed in an existing guarded area, with a local disconnect, and clear signage. A risk assessment that captured residual risk was completed and change management discussions were conducted with Attendants and maintenance personnel.

3. *Describe the improvements that have been achieved by the implementation of this innovation. (Explain how the solution has reduced injuries/illnesses or the risk thereof, improved safety awareness on or off the job, improved safety systems, advanced the safety program, and/or improved the flow/reliability of the production process. Provide supporting facts/data, where available).*

Numerous benefits came out of implementing this custom robot design. Stacker Attendants would mark an average of 40 loads per shift, so from the safety aspect, the frequent exposure to crush hazards posed by equipment such as knock-down arms and scissor hoists as well as the struck-by and overhead hazards from transferring veneer were eliminated. Inhalation of paint fumes and the possibility of accidental ignition (via aerosol can nozzle static electricity, which has previously occurred) were also eliminated by switching to water-based ink. Additional benefits of eliminating the use of aerosol paint cans include increased accuracy of load marking, notable cost savings (aerosol can disposal and ink price difference), as well as the environment-positive reduction of greenhouse gas contributions.



Reach zone when previously done with an aerosol spray can

4. *When was this innovation implemented and when were positive results first apparent (provide month and year for each)?*

Upon the device being fabricated, safe work procedures were developed and it was installed on the floor in Q4 of 2021. Following various tests, tweaks, and troubleshooting activities, the robot was functioning as intended by Q1 of 2022.

Since implementation, the safety benefits listed above were immediate. Efforts to replicate this device and process change are in place for the other stackers in our Armstrong Plywood division as well as approved plans for Tolko's other veneer-based locations.

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Veneer Simulator Training

Roseburg - Weed

Contact: Ben Hornsby, Safety Manager

Email: Benjamin.hornsby@rfpco.com

1. *Describe in detail the innovative/novel solution that was developed and implemented.*

New hires were coming to work with a different learning style and skill set than we had seen in the past. We were able to adapt our training to be more hands on for the new hires through a forklift simulator. With our new hire classes, each TM will spend time learning the controls and how a forklift's rear steer works using the simulator before they are released to the floor and the actual forklift.



Simulator will full chair, steering wheel, 4 levers, 3 forward screens and 1 reverse screen



Team member driving a forklift carrying an object as he weaves through cones



Team members receiving coaching from a trainer as they work through the training course on the simulator.



Used forklift example with no damage.

2. *How was this innovation developed and implemented? (How was it introduced, process used, people/positions/teams involved, etc.)*

During previous years we have seen property damages with our mobile equipment increasing. This sparked a group to begin looking for out of the box solutions for driving our equipment. During this process we took our safety and reliability managers as well as mobile equipment operators to look at solutions and to test simulators. The simulator was decided on due to the relationship between the simulator and the processes that the team member would be doing on the floor.

3. *Describe the improvements that have been achieved by the implementation of this innovation. (Explain how the solution has reduced injuries/illnesses or the risk thereof, improved safety awareness on or off the job, improved safety systems, advanced the safety program, and/or improved the flow/reliability of the production process. Provide supporting facts/data, where available).*

The simulator has been able to take a new hire with no mobile equipment experience and allowed them to get some base knowledge of the equipment without the risk of incident. Doing this has increased the confidence as the team member as they move from the simulator to the mobile equipment. Since implementing in September of 2022 we have not had a new hire property damage with a piece of mobile equipment.

4. *When was this innovation implemented and when were positive results first apparent (provide month and year for each)?*

Simulator was implemented in September of 2022 and since the implementation of this we have not had a new hire property damage with a piece of mobile equipment.

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Walking Working Surface Updates

Roseburg - Chester

Contact: Anna Miller, Safety Manager

Email: anna.miller@rfpco.com

1. *Describe in detail the innovative/novel solution that was developed and implemented.*

Creating safer walkways and removing elevation changes to reduce slip, trip, and fall potential.

2. *How was this innovation developed and implemented? (How was it introduced, process used, people/positions/teams involved, etc.)*

The team discussed it after looking at previous incidents in the industry and decided to focus on reducing slip/trip/fall hazards. We had the EHS committee and other team members worked on the multiple projects along with some contractor work that was commissioned.

- Painted the edge of stairs in safety yellow
- Painted the edge of the rail line platform to bring attention to the drop off when no cars are present
- Had contractors build catwalks for easier access to the press for work
- Installed guard rails at the top of the staircases leading underneath the press to prevent a fall from anyone walking past the area
- Had the merge area at the end of layup line 1 and 2 leveled out to remove the 3 points of elevation change
- Installed pedestrian stop signs at intersections with forklift traffic for awareness
- Installed a swing gate in a high traffic area on layup line 2 to prevent an accidental fall down the steps

3. *Describe the improvements that have been achieved by the implementation of this innovation. (Explain how the solution has reduced injuries/illnesses or the risk thereof, improved safety awareness on or off the job, improved safety systems, advanced the safety program, and/or improved the flow/reliability of the production process. Provide supporting facts/data, where available).*

These improvements have brought attention to walking working surfaces and the hazards of certain areas such as intersections. The painting has broken up the monotone color of the stairs to help decrease the chance that a team member could miss a step. The guarding has reduced the chance of a team member working in those areas accidentally stepping into an elevation change when walking to another area or stumbling into that area.

4. *When was this innovation implemented and when were positive results first apparent (provide month and year for each)?*

- Painted the edge of stairs in safety yellow: Throughout the year of 2022
- Painted the edge of the rail line platform: 9/2022
- Had contractors build catwalks for easier access to the press for work: 9/2022
- Installed guard rails at the top of the staircases leading underneath the press: 2/2022
- Had the merge area at the end of layup line 1 and 2 leveled out to remove the 3 points of elevation change: 12/2022
- Installed pedestrian stop signs at intersections with forklift traffic for awareness: 2/2022
- Installed a swing gate in a high traffic area on layup line 2: 7/2022

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