

Think Different Build Better Innovation

Chain Breaker

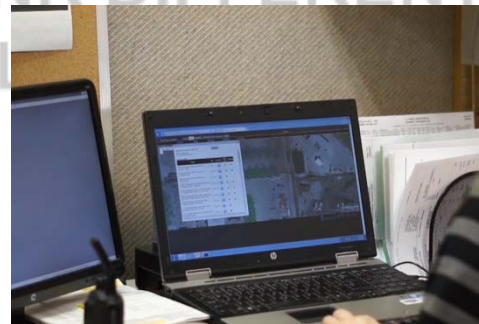
Routine maintenance is essential to every aspect of an efficient project site. The chain that runs the pulley cleaners has to be adjusted once every month, while another link has to be removed every second month. Although the chain is a vital part of the machine, keeping the belts running while making repairs is a top priority for the team to reduce unnecessary outage time. These processes were previously done by somewhat aimlessly using a hammer & brass punch until the chain connector came loose, then pushing it out of the link the rest of the way with a slender taper punch.



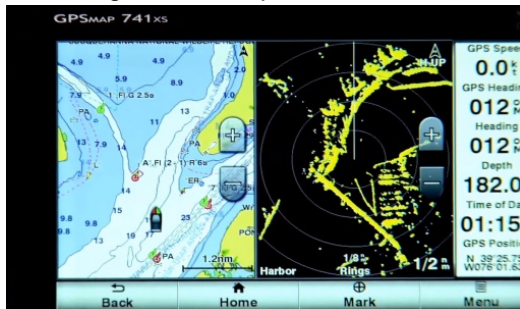
For Mark McPherson and Travis Chipping, the tedious and inefficient way of doing this was seen as rudimentary, and had to be improved. The crew maintaining these pulley cleaners now uses a fit-to-size chain breaker, which combines ease of use with a safe and effective alternative to blind force. This innovation has proven to be the perfect tool for the crews working on these systems. It can save 30-60 minutes of time, while reducing risk of damaged parts, shrapnel, and injury. It also lowers the cost and force needed just by implementing one simple tool.

GPS Tracking

Trap stations are set up around sites to separate condensate from steam which prevents water hammer. When these traps are damaged or break down, it is very important to fix them quickly and properly. This has been difficult to do in the past as most of the stations are either mislabeled or not labeled at all, making it nearly impossible to locate the trap reported as damaged. In the last two years, an estimated \$3,000,000 worth of treated condensate has been wasted due to broken traps.



General foreman Darryl Ball had an innovative idea stemming from his experience with GPS devices used while fishing. He decided to have a couple of



devices flown in to site, which he then used them to mark each trap's location on a map. The devices automatically ordered the positions into sequence. This allowed him to send the positions to the client who could make work orders for routine maintenance on the traps. Thanks to this great idea, the site will see a huge decrease in lost condensate, as well as time taken to identify issues and locate the trap stations.

Roller Jig

Metal apron feeders, the massive steel conveyors that control the flow of ore, require routine inspection and maintenance every 750 hours. The majority of this is focused on the 150lb rollers that support it and keep it moving. On average, 5 of these rollers must be replaced each time an inspection occurs, and take about an hour per part. This means there is lots of heavy lifting and manual handling: areas where there is always room for a heightened focus on safety and efficiency. Workers replacing these rollers previously would lie on their backs and push the new part, using their feet, up to another crew member to grab.

General foreman Spencer Beihn and welder Evan Grewinski saw an opportunity to improve. They rigged up a simple machine that allows them to push the rollers uphill using leverage. They can now replace individual rollers in as little as 15 minutes. Furthermore, they no longer have to lie on their backs and use strenuous force to complete such a routine task. This makes the job easier, more efficient, and most importantly, safer.



Quonset Hut for Painting

To paint piping and components on site, crew members typically work under a tarped area outside of the mechanical shops. This works well under the right conditions which provide necessary warmth and open air. Northern winters, however, have proven time and time again to not be the right conditions. Painters are unable to operate in freezing conditions due to both client specifications and the intensity of the cold weather. For this reason, work is often delayed or moved to inside the mechanical shops, which takes up space that could be utilized more productively.



Joe De Carolis has put forward what he believes to be the optimal solution: Quonset huts with mounted Ruffneck heaters inside. This would provide a sturdy structure, complete with a door and roof, to complete work in. This means painting can be accomplished without impeding on mechanical shop space and still being up to client standards and specifications. Crew members will be comfortable and

paint will dry much quicker with the circulation of warm air. This proposal by Joe would be a small price to pay for a long term improvement in paint jobs, space consumption, and warmth of workers.

Pump Jack Defrosting

When performing alignment work on pump jacks, crews must first isolate the machines from all energy, as well as engage the brake cable. This is crucial to keep the workers safe and ensure quality maintenance. Issues often arise in the winter months when the brake cables get built up with ice and frost, which prevents them from being engaged. Previously, crews would deal with this by mobilizing a crane to hold up the weighted end of the jacks, then pour hot water on the ice until it melts. This worked, but was not ideal in any sense. It brought the hazards of working with heights and weights; it also cost valuable time and money just to mobilize a crane which still put workers in the line of fire.



This was until the minds of Ken Zimmerman and Shane Gobel proposed a better solution. Ken suggested using a heat gun as opposed to hot water, and Shane upped the idea by attaching the heat gun to the end of a stiffy stick. They got the idea approved by their supervisor, and instantly mitigated the liabilities that came with the old method. By using a heat gun, crews are able to avoid mobilizing a crane. This can save up to \$25,000 and 3 days of unnecessary work in the line of fire. Overall, Ken and Shane had a great idea which allowed them to not only work from ground level, but also use less equipment, time, and money while preparing to perform work on the pump jacks.

Onsite Fall Protection Inspection



Annual inspection of fall protection gear is, although important, very inefficient. The old method of getting equipment such as hoists, harnesses, and lanyards inspected required shipping said apparatus offsite to a third party contractor. This resulted in a timeline of two weeks or longer to wait for the items to return with the results. Inspections offsite cost \$1425 plus shipping.

Curtis Lulashnyk recommended a much more cost & time efficient solution to this inconvenient process, suggesting to do inspections onsite. Apart from the clear reduction in shipping and contracting, management is benefitting from this process by having quicker responses to necessary replacements to any equipment, lowering outage times even further. Inspections can also be done more accurately, as HSE teams can get a closer and more practical look at fall protection gear.

Vigilance Champion Belt

Acts of vigilance have been a large part of Fluor Driver's HSE culture for quite some time. By providing a basis for reporting dangers or difficulties, and allowing potential threats to be remedied before an incident occurs, the AOV system was already a leap in the right direction. Employee participation, however, was low due to the lack of awareness; thus when Fluor Driver rolled out the weekly Vigilance Champion Award, gaining traction was a priority for the safety culture onsite.



This was until insulators Rob House and Jason Chipman, with the help of their team at Suncor Sarnia, decided to craft a championship belt to celebrate the weekly winners with. The belt, which is decorated with the logos of 7 local trade unions, supports all four of our core values: Be Innovative, Build Great Things, Taking Care of Each Other, and Have Fun. It showcases the innovative and practical minds working on our projects, encourages not only safe work, but quality work and an attention to detail, and promotes a routine of crew members looking out for one another. On top of all that, it brings a fun competitive aspect to the typically unexciting HSE program.