

Wheel Chock Lowering Project

BMA Goonyella Riverside Mine

The Problem or Initiative

Goonyella Riverside Mine has a total of 44 trucks which operate 7 days a week around the clock. Wheel chocks are used whenever the vehicle is required to be parked up such as for break down, maintenance etc. Chocks could be used once in a shift or multiple times in each shift depending on the day's events. Employees have reported that they experience difficulty in removing chocks from the vehicles as not only were they required to lift a substantial weight high above shoulder height but then lowering them to the ground also proved difficult as they are cumbersome and awkward to handle. There had been a number of employees present to the site Occupational Therapists to report injuries and strains as a result of performing this task which saw the necessity for a safety initiative to improve the ergonomic issues involved in performing the task of removing the chocks and minimizing the risk of injury.

The Solution

HSEC made a request to Brian Mann from the Maintenance department to review the system in place, to identify the issues which impacted on the health and safety of operators who had to unload the chocks. This request was made as a direct result of injuries being reported. Brian Mann, in consultation with Occupational Therapists, was able to assess the need for a device that would assist in the removal of the chocks whilst not putting the operators at any risk of harm. Observations of how the task was performed identified the main issues to be risk of harm by reaching to lift (chock) weight of 14 kilograms from above shoulder height and when removing the chock often dropping it onto the floor which could have hit shins or feet causing injury.

A device was designed to enable the chocks to be lowered to an accessible height to allow operators to remove the chocks safely without having to reach above shoulder height thus eliminating the risk of injuries to back, shoulders and neck. Also, as the chocks were at a good height when lowered the risk of dropping was also eliminated. A trial of the device on one truck provided valuable feed-back from operators of the success of the device thus providing the opportunity to install the chock lowering device on to other vehicles.

The device was designed from its inception by mine employee Brian Mann and then fabricated on site before being fitted in the workshop. The operation and safety control systems were designed by the Mobile Maintenance project team, the device operates using the main air supply, this allows for total control by the operator in all conditions. The system also incorporates safety load check valves in case of air supply failure preventing the chocks from uncontrolled lowering. Control unit has been designed and positioned for ease of operation and by giving the operator full vision eliminates all risks of third party interaction.

By using the chocks and also watching others using them, it was decided that a similar system could be designed which would eliminate associated risks. A

design was drawn which was then taken to site engineers who reviewed the design and provided feedback. The company Parker was resourced to manufacture the RAM and fittings. Worked with mobile maintenance to ensure the design was effective and avoided any hidden dangers.

Benefits/Effects

Installation of the chock lowering device has actively promoted the health and well being of Goonyella Riverside Mine operators. Investigations were initiated as a direct result of operators reporting to the Occupational Therapists due to ergonomic issues they were experiencing with the task. After consultation with operators, HSEC Manager and Occupational Therapists, Brian Mann was able to draft the original design which was then fabricated and installed. All operators who have had the opportunity to utilise this equipment have given outstanding feedback to its practicality and functionality. Operators have enquired as to when the remaining truck fleets will be fitted with this device. This device has proven to be a win-win outcome for the company and employees in that risk of injury and harm has been nullified.

The benefits of the device are minimizing the risk of harm to our people. With such a diverse workforce that is employed at Goonyella Riverside Mine and across the other sites in the business this device reduces the risk of harm to all employees who have to perform the task of removing chocks from the vehicle. This innovation is being presented to the truck manufacturers for their review as a design improvement for future production. The cost of installing the device on the existing vehicles would be \$6000 per unit.

After studying and watching the current chock being pulled down from the truck and also put back on the truck, the level of risk associated was high and action was required. The hierarchy of controls was applied as per below:

- Elimination – Remove the apparent hazards.
- Substitution – Replaced existing chock with new design.
- Re-design – Fabricate and fit the pneumatic chock design.
- Administration – Introduce and trial the new process.

Transferability

This device has been installed on one pre strip truck and is now going to be fitted to a production truck. HSEC site manager is putting forward the device to the truck manufacturers with a recommendation for its implementation for future trucks to have installed. The device is not expensive to implement as it uses existing air used for other components of the vehicle and once fabricated by the workshop team is able to be installed on site.

