

## Long Tyne Forks

### Xstrata Coal Queensland – Newlands Northern Underground

#### The Problem or Initiative

##### a) Identified problem

- Manually loading the continuous miner with supplies exposed personnel to a range of strain and sprain related injuries.

##### b) How the improvement opportunity was identified

- The opportunity was identified as a result of injuries to personnel whilst loading the continuous miner, and lost production time due to the general inefficiency of the method.

##### c) What health and safety consequences were to be addressed

- Personnel were exposed to continual bending, lifting, twisting with awkward loads of varying weights, walking over uneven surfaces and up platforms/steps.
- This created the risk of strain and sprain related injuries.

#### The Solution

##### a) Strategies and initiatives developed to identify and address the problem

- A project team was created to investigate and review alternative systems and processes.
- The team reviewed a wide range of options for supplying the continuous miner, discussed options with OEM's, engaged with other mining operations to review practices, and met with employees who had worked with alternative systems and solutions.
- The team initially implemented and trialed a solution utilising QDS racker to load and unload pods.
- There were issues with implemented system, crew talks came up with this alternative – jib & forks.
- A specialized set of quick detachment system forks was developed. These are suitable for loading and unloading bolt pods for a continuous miner in a development mining panel.

##### b) Internal and external resources used

- Onsite personnel
- External OEM – Fleet Industries

##### c) Methods used to trial and test

- Trialed 3 alternative loading processes using loaders – racker, jib and forks(standard).
- Crews favored the fork option but had some interference issues so changes were made to eliminate the issue.
- Modified 7t forks (long tynes and short backing plate) to make change over efficient, eliminated manual handling, No Go Zones in affect for process, change over incorporated into production cycle with reduced delays.



##### d) Implementation process

- Management of Change process utilized.
- Discussed at crew tool box talks to ensure consensus with preferred option.
- Training undertaken with crews - onsite.

##### e) Demonstrate how hierarchy of control has been applied

- Risk assessment included in the Management of Change, elimination of some of the hazards was the key objective for the change which resulted in a reduction of injuries with the resupply process.

#### Benefits / Effects / Outcomes

**a) Safety and occupational health benefits**

- No manual handling.
- Production delays reduced, no resupply related injuries.
- Short backing plate allows for closer access of the LHD to the rear of the CM without interaction with the tail of the CM and gives LHD operator improved visibility.
- Long tynes allows for easier locating of the pockets onto the tynes and improved loading/unloading capability (better control for operator and allows to push rear of pod without interference of CM).

**b) Supporting data**

- Production reports – reduction in process delay.
- Injury statistics – reduction in supply process related injuries.

**c) Extent of deployment**

- Implemented in all 3 development panels at Newland Northern Underground.
- Rackers have become obsolete, multi use forks – still rated for 7 tonne so capable of using for alternative loads.



**Transferability**

**a) Potential for innovation to be used, modified, transferred across the industry**

- Transferrable to all other undergrounds that utilize the removable bolt pods – limitation maybe height due to requirement to lift the pod.
- Oaky No 1 are investigating implementing this system.

**Innovation**

**a) Originality of the innovation**

- Unique to Newlands Northern Underground.

**Approximate Cost**

**a) Statement of approximate cost, if known**

- \$14,000 for the long tyne, short backing plate forks