

Staple Removal Tool (Monorail)

Xstrata Coal Queensland – Newlands Northern Underground

The Problem or Initiative

a) Identified problem

- Typically the operator would use a non specific tool (ie – screwdriver) to perform the task of removing longwall staples.
- This increased the risk of hand injury.
- It prolonged the time the worker would spend working at heights.
- It forced the worker to operate in an awkward position, increasing the risk of injury.

b) How the improvement opportunity was identified

- The team identified this task as an opportunity for safety improvement after reviewing a variety of longwall related processes.

c) What health and safety consequences were to be addressed

- Hand injury.
- Working in an awkward position.
- Time spent working at height.

The Solution

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

- The team researched and reviewed a range of alternatives and ended up developing a specific tool by modifying a slide hammer.
- This tool allows both legs of the staple to have equal force applied to them for ease of removal.
- The tool allows the hose to be removed/installed with the tool.

b) Internal and external resources used

- As part of a mixed project team, Contractors and Employees consulted to determine the suitability of the tool.
- External stakeholders were utilized to develop the idea, modifying aspects after each site visit and trial.

c) Methods used to trial and test

- Hands on trials on surface applications prior to implementation in underground environment.
- Regular feedback to suppliers on changes necessary to better suit application.

d) Implementation process

- Use by longwall installation crews to limit exposure until trials have been complete and product has been optimised.

e) Demonstrate how hierarchy of control has been applied

- Engineering Control – Correct tools for the job.
- Minimise risk of injury due to awkward positioning and repetitive movements.

Benefits / Effects / Outcomes

a) Safety and occupational health benefits

- The tool reduces the awkwardness of the task. In some cases applying forceful exertions at awkward postures.
- The tool reduces the risk of hand injury because there is no risk to contact hands with a hammer.
- The tool increases the speed of task, thereby reducing the time needed to work at heights.

b) Supporting data

- Risk Rating (based on Xstrata Risk Matrix) :
 - Prior to deployment - M13
 - After deployment - L2
- Physicality of Task Rating (based on modified PERforM analysis):
 - Prior to deployment - 14
 - After deployment - 12

c) Extent of deployment

- All longwall applications where staple lock fittings and hoses are used

Transferability

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

- Ability to be used in any application where staple lock fittings and hoses are used.

Innovation

a) Originality of the innovation

- Innovation takes a standard slide hammer and utilises attachments for required application.
- You could manufacture any attachment, where the movement of a slide hammer action would assist in assembly or disassembly.

Approximate Cost

a) Statement of approximate cost, if known

- \$1,000

