

# QUEENSLAND MINING INDUSTRY SAFETY CONFERENCE

## Strongback Power Lift MMG Century

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# OVERVIEW



- > Gusseted steel plates – known as belly guards – used to protect underside of dozers
- > Maintenance presents a number of serious safety risks
- > The **Strongback Power Lift** significantly reduces the safety risks associated with removing and refitting belly guards

Strongback Power Lift.wmv

# PROBLEM

- > Belly guards for Caterpillar D10 and 11 equivalents weight > 215 kilograms each
- > Needed to push/pull belly guards out from under dozer on hydraulic trolley
- > Required tradesperson to manually manoeuvre trolley out while avoiding front-mounted dozer blade or rear-mounted ripper

# SOLUTION

- > **Aim: Reduce exposure to person tasked with removing or refitting belly guard.**
- > Cannot eliminate need to be under machine to inspect belly guard
- > Needed to improve the way task was conducted

# SOLUTION

## > **Strongback Power Lift**

- > Remote-controlled support platform assisting to safely remove or refit belly guards
- > Trial commenced in June 2011

## > **Features**

- > Remote-controlled – eliminates need for tradesperson to manually guide belly guard under and out from dozer
- > Low centre of gravity and tracks to guide/secure stability of unit
- > Training package developed to ensure safe use and maintenance



# BENEFITS/EFFECTS

## > Clear safety benefits

Benefit	Effects
Reduces physical effort involved in the task and need to manoeuvre under the dozer.	Reduces potential for manual handling associated injuries.
Enables the operator to carry out the tasks from a remote position.	Eliminates the risk of belly guard falling and causing injury.
Reduces the need to handle the belly guard.	Reduces the potential for strains and crush injuries

# HOW IT WORKS

## > Strongback Power Lift

- > Tracks are laid and forklift is used to put device into position
- > Device is remotely driven into position under dozer
- > Belly guard secured to device
- > Device remotely drive out from under dozer along tracks





# TRANSFERABILITY



- > Principles and circuitry can be applied to a number of similar lifting/relocation activities within workshop/field operation
- > Other equipment types with heavy components requiring relocation/movement
- > Easily adapted/modified to suit variety of industries
- > Currently refining prototype to improve effectiveness

# INNOVATION



- > No similar unit available in commercial marketplace
- > Developed through onsite analysis and support of off-site consultant
- > Innovative engineering principles to develop
- > Prototype cost about \$27,000 to develop – cost for single unit is estimated at about \$12,000

# SUMMARY

- > Increases safety of a task undertaken at all mine sites
- > Innovative engineering principles used to develop solution
- > Easily transferable throughout industry



# QUESTIONS?

