

Tyre Handler - Fall Back Protection Arms



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Innovative Thinking *Bright Ideas*

- Culture which actively encourages employees to develop new ideas, drive innovation and promote safer practices across Thies projects
- *Bright Ideas* concept originally developed for safety ideas, employees submit 1-2 page document describing an innovation or smarter way of working on their project
- Large percentage of *Bright Ideas* initiated by personnel performing the task



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Innovative Thinking *Bright Ideas*

- Created an environment where sharing of *Bright Ideas* is a development opportunity as well as an innovation medium
- Tyre Handler Fall Back Protection Arms was a *Bright Idea* submitted by employees from Thies' Curragh North Project.



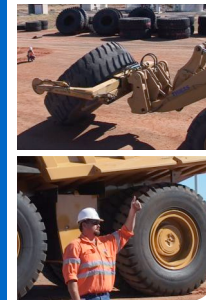
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The Problem *in a nutshell*

- Process of changing tyres on Rear Dump Trucks involves lifting tyre and rim assemble either on or off hub of truck
- Requires tyre fitter to be positioned between the truck hub and the tyre handler
- The Mining industry has incurred a number of serious incidents including fatalities as a result of tyres falling off and crushing personnel



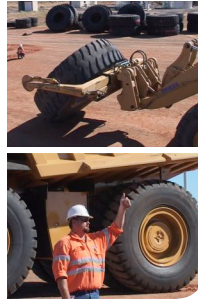
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The Problem *in a nutshell*

- Changing large earthmover wheels and tyres is a frequent task on most mine sites
- The potential for injury is high
- Controlling the risk by relying on procedures was unacceptable, and an engineered solution was required



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Problem Solving *First Solution*

- Initially designed heavy gauge chain attached to the arms of tyre handler
- Although successfully addressed immediate safety hazard a number of problems were evident:
 - if operator did not allow enough slack the chain could potentially break or cause structural damage
 - chain needed to be regularly inspected to ensure its integrity



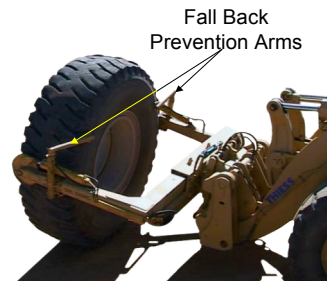
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The Solution *Fall Back Prevention Arms*

- ✓ Designed fall back prevention arms to be fitted to the tyre handler
- ✓ Designed specifically for the JEC model 5200 tyre handler which is standard model used by Thiess in Queensland



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The Solution *Fall Back Prevention Arms*

- ✓ Swift Engineering fabricated arms and provided Thiess with finished product
- ✓ Design has been certified as capable of adequately resisting loads generated by tyres



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The Solution *How it Works*



- Designed as bolt-on device so no welding was required on the attachment
- The arms are pinned into position in a pre-determined location based on the size of the tyre
- The arms are swung into place once the tyre has been gripped by the tyre handler
- If tyre was to dislodge it would come to rest against the arms and protect person in work area



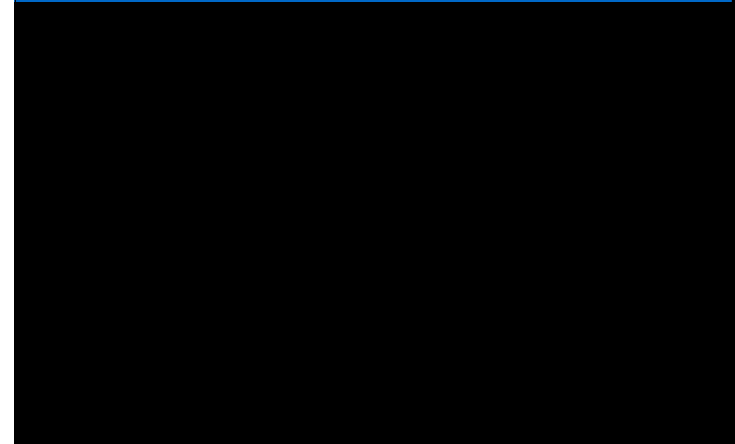
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The Solution *Video Demo*

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Implementation *...successful take-up*

- Following preliminary design work and trials in Mackay, implementation trials occurred at Curragh North Project
- During trial, a risk assessment was completed, Safe Work Procedure developed and on-site training conducted
- As a result of trial Thiess' fleet of tyre handlers has been modified to incorporate this innovation



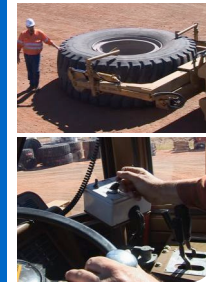
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Benefits *Safety First*

- Reduced risk of serious injury or fatality to personnel
- Provides health and safety benefits by ensuring higher level of protection



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Cost Summary

- Costs associated manufacturing and designing not excessive
- \$4000 per set
- Initial design cost \$2000
- Minimal ongoing maintenance costs



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Transferability ...real application

- Thiess' entire fleet of tyre handlers has been modified to include fall back protection arms
- The Device can be used wherever handling of tyres and wheels occurs and could be modified to suit different models of tyre handlers on market



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Transferability Endorsement

"The innovation is of a simple but robust design and appears easy to use, innovations such as this need to be passed onto the broader mining industry and I shall be endeavouring to do so during inspections at other sites. All those involved in the evolution of the protection arms are to be commended. Similarly, the opportunity exists for other organisations using tyre handlers to modify their fleets as well."

BRUCE MCKINNON

DEPARTMENT OF NATURAL RESOURCES, MINES & WATER



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Questions?



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