

Comalco Aluminium Limited – Weipa Operations

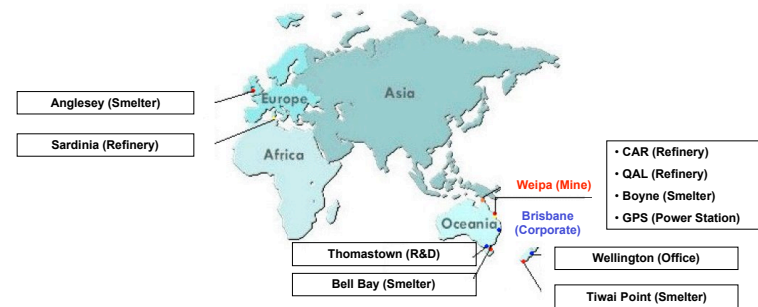
Queensland Mining Industry
HEALTH & SAFETY INNOVATION AWARDS 2006

IDLER CARRYING HANDLES

The Goal is Zero



Comalco Aluminium Limited – Locations Worldwide



The Goal is Zero



Comalco Aluminium Limited – Weipa Operations

INDUSTRY:

- **Mining - Bauxite**
 - Weipa
- **Refining - Alumina**
 - CAR, QAL, Sardinia
- **Smelting - Aluminium**
 - BSL, Bell Bay, NZAS, Anglesey

4 tonnes



2 tonnes



1 tonne



For further information refer to: www.comalco.com

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Comalco Aluminium Limited – Weipa Operations

MINING:

- Began mining in 1961
- Ore reserves about 1.2 billion tonnes
- Area 2,500 sq kilometres
- Approximately 730 employees



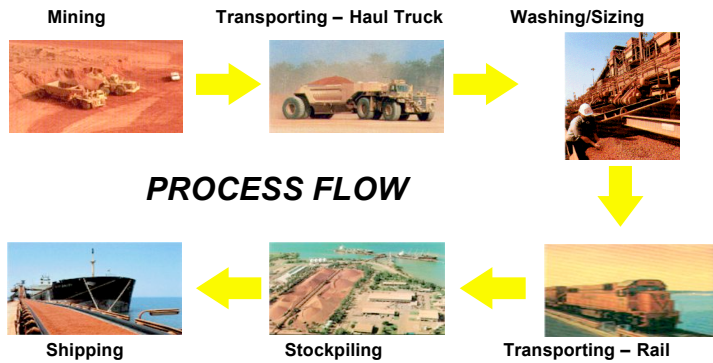
PRODUCTION:

- 2003 – 11.9 mdpt (million dry product tonnes)
- 2004 – 12.7 mdpt
- 2005 – 15.5 mdpt

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Comalco Aluminium Limited – Weipa Operations



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Idler Carrying Handles

Entry Title: Idler Carrying Handles

Person Contributing to Innovation: Tony Isenbert

Company Name: Comalco Aluminium Limited – Weipa Operations

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Idler Carrying Handles

The Problem:

- The weight and awkward shape of the larger (return) idlers creates safety concerns for operators.
- Operators have to carry idlers up inclines and stairs whilst trying to maintain three points of contact (as per safety requirements).
- The manual handling of idlers has the potential to cause strains and/or sprains and pinch points due to awkward carrying methods.
- Previously managed these safety concerns by being aware and taking care. We realised there had to be a safer and better way to change out idlers.

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Idler Carrying Handles

Awkward shape and previous holding technique required.



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Idler Carrying Handles

Example of conveyors where idlers need to be changed.



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Idler Carrying Handles

The Solution:

- Plant operators designed the Idler Carrying Handles to eliminate some of the hazards associated with handling idlers.
- The handles are simple in design, but have greatly improved the safety of the task.

Idler Carrying Handle



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Idler Carrying Handles

Benefits/Effects:

- Minimising the potential for sprains and strains whilst carrying idlers.
- Operators can carry the idlers with one hand and maintain three points of contact whilst climbing up/down stairs.
- Eliminate the potential for pinch points as hands are kept free from actual idler ends.
- Two people can safely pick-up and carry return idlers along walkways and up an incline or steps without the idler slipping and falling.
- Simplicity of the design of the handles has been a great advance in safety for Weipa.



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Idler Carrying Handles

Transferability Across Industry:

- Design principles of the idler carrying handles could be applied in any mine site or other work area where manual handling of pipes, rollers/idlers or other awkward objects is a necessity.
- They can be made to custom fit the object to be moved.



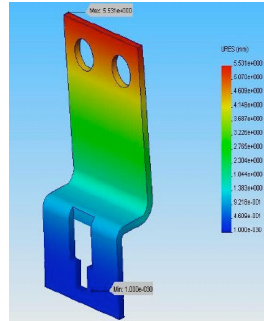
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Idler Carrying Handles

Innovation:

- Design and construction of the idler carrying handles aimed to address as many safety and maintenance issues as possible.
- The handles are reusable, and enable idlers/rollers to be carried safely when maintenance is required.
- Similar handles used for carrying idlers were not commercially available at the time.



Engineer's Preliminary Drawing for Approval of Use.

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Idler Carrying Handles

Risk Assessment:

- Comalco Weipa's Risk Analysis Matrix was used to determine the risk both before and after the Idler Carrying Handles were implemented on site.
- Using the Risk Analysis Matrix involves considering the consequence and likelihood together to determine the appropriate Risk Rating (for that task or activity).

Likelihood	Consequences				
	1 Insignificant <small>No impact on financial loss</small>	2 Minor <small>First aid treatment for financial loss, first aid environmental impact</small>	3 Moderate <small>Medical treatment required for financial loss, first aid environmental impact, first aid property loss</small>	4 Major <small>Extensive medical treatment required for financial loss, first aid environmental impact, first aid property loss</small>	5 Catastrophic <small>Death, loss of production capability, major environmental impact, major property loss</small>
Almost Certain <small>Should occur at least once in 10 years</small>	S 11	S 16	H 20	H 23	H 25
Likely <small>Should occur once in 10 years</small>	M 7	S 12	S 17	H 21	H 24
Moderate <small>Should occur at some time</small>	L 4	M 8	S 13	H 18	H 22
Unlikely <small>Could occur at some time</small>	L 2	L 5	M 9	S 14	H 19
Rare <small>May only occur in exceptional circumstances</small>	L 1	L 3	M 6	S 10	S 15

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Idler Carrying Handles

Risk Rating Before and After Implementation of Idler Carrying Handles:

	Consequence	Likelihood	Risk Rating
Before Implementation of Innovation	Major	Likely	21 (H)
After Implementation of Innovation	Minor	Unlikely	5 (L)
Level of Risk Reduction (Before – After)			16
Percentage Risk Reduction			76%

H = High risk S = Significant risk M = Moderate risk L = Low risk

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Idler Carrying Handles

Questions?...

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Please ask!

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