

Guard Communication and Auto Coupler Systems



Guard Communication and Auto Coupler Systems

Discussion

- Safety Statistics
 - GFIMSA Region
 - Horizontal
- Objective
- Initiatives
- Engineering out the risk
 - Guard communication system
 - Auto Coupler
- Features
- Installation Layout
- Key Benefits

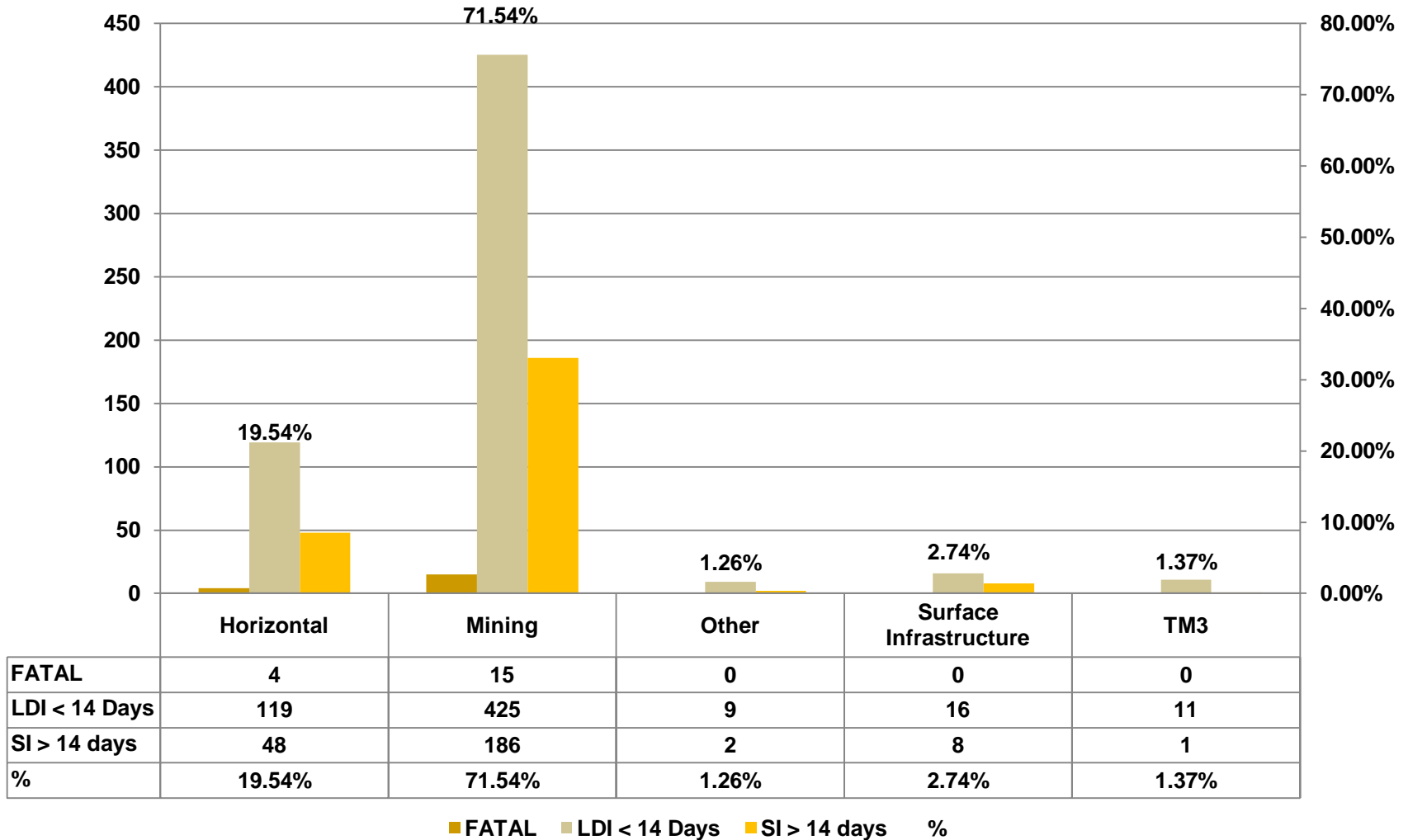


If we cannot mine safely, we will not mine



Guard Communication and Auto Coupler Systems

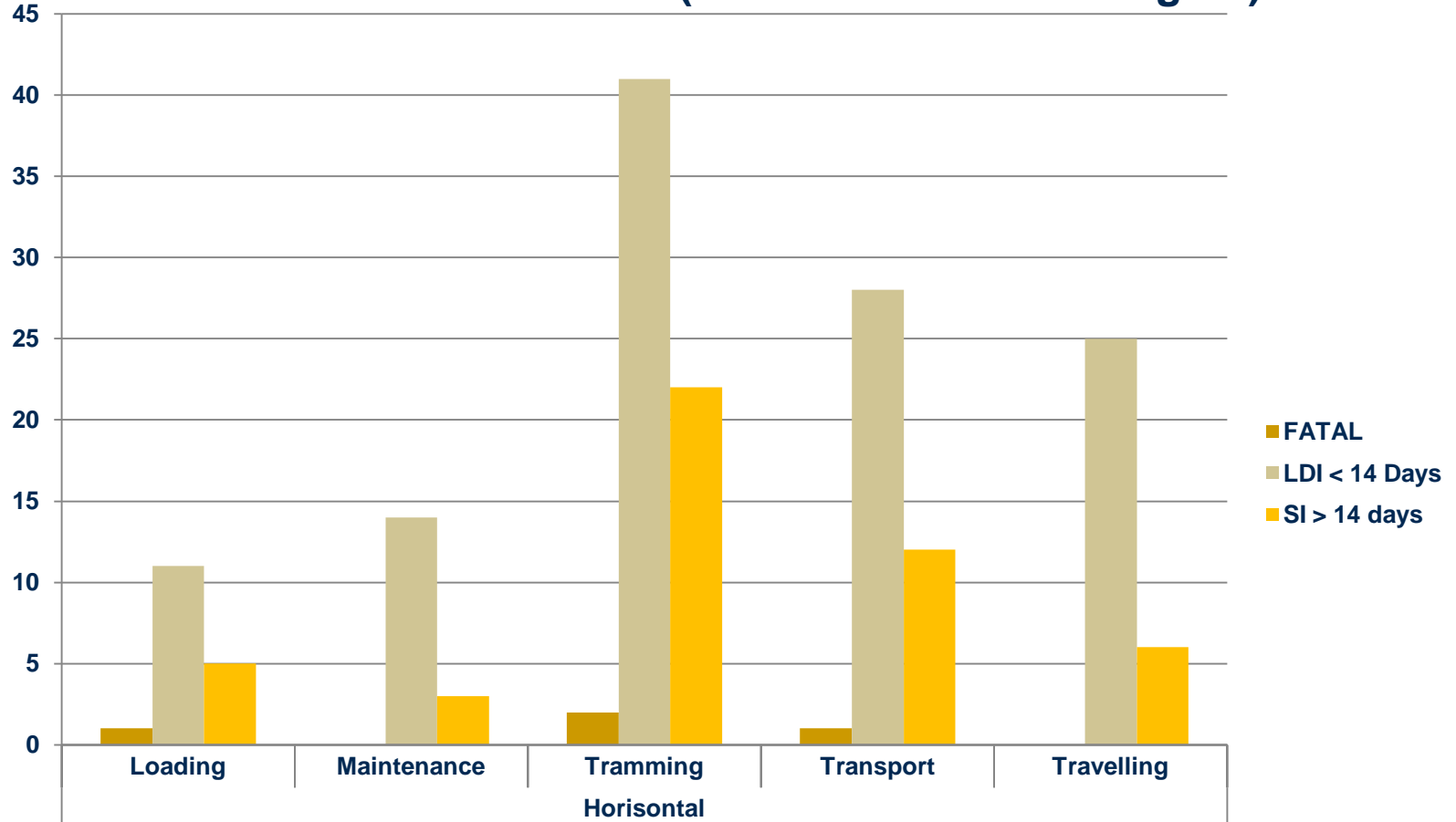
Safety Statistics – June 2010 to June 2011 (GFIMSA Region)



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Safety Statistics – June 2010 to June 2011 (Horizontal GFIMSA Region)



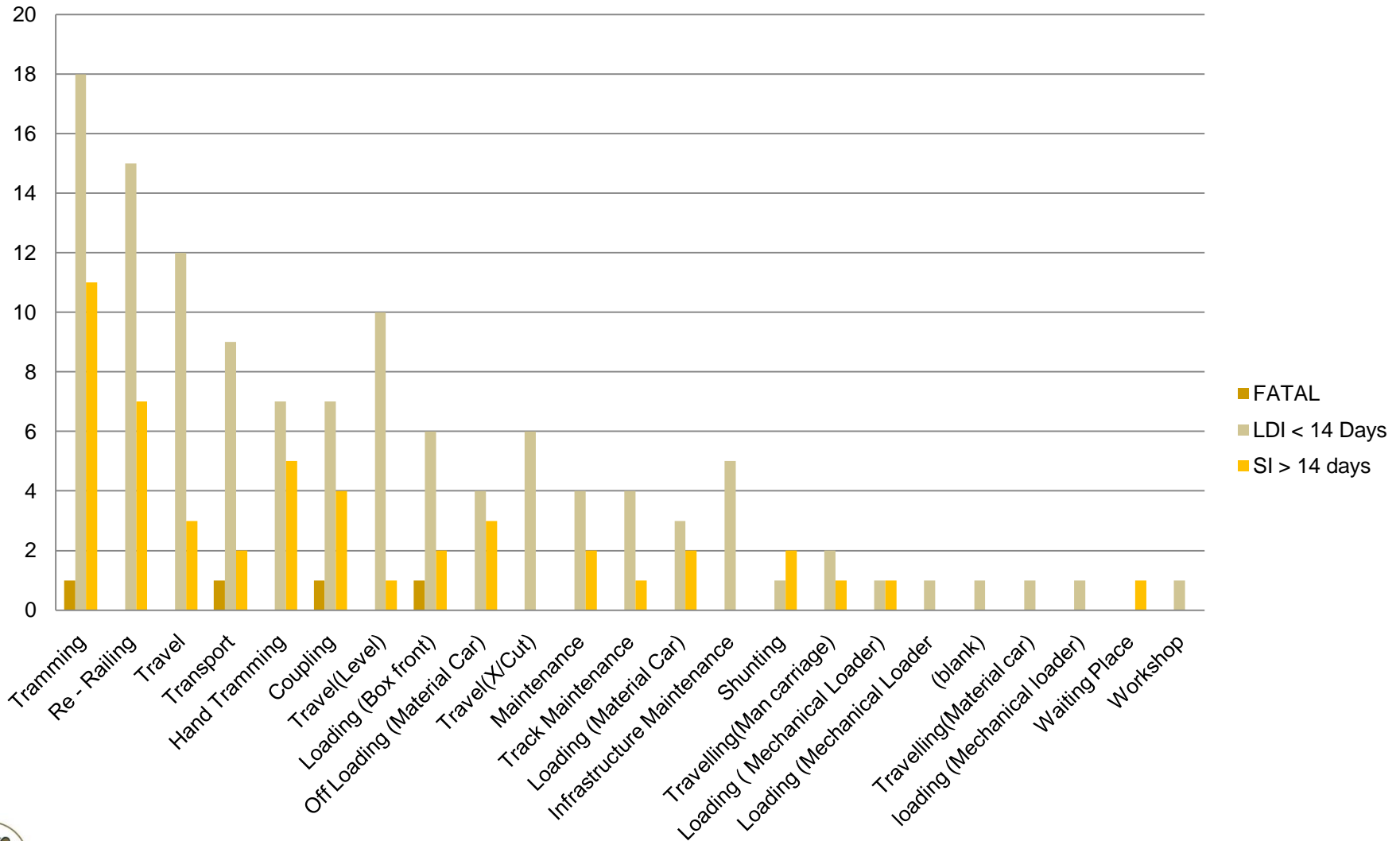
	Loading	Maintenance	Trimming	Transport	Travelling
FATAL	1	0	2	1	0
LDI < 14 Days	11	14	41	28	25
SI > 14 days	5	3	22	12	6



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Safety Statistics – June 2010 to June 2011(Horizontal Activity)



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Objective

- Gold Fields is committed to zero harm.
- Reduce Serious and Lost Day accidents by 20% year on year (Horizontal transport accidents contribute 19.5% of total accidents in Region).
- Pro-active approach towards a reduction in serious and lost day injuries would be to focus on medium term interventions and a long term strategy in order to achieve prolonged achievements.



Horizontal Transport Initiatives

Initiatives

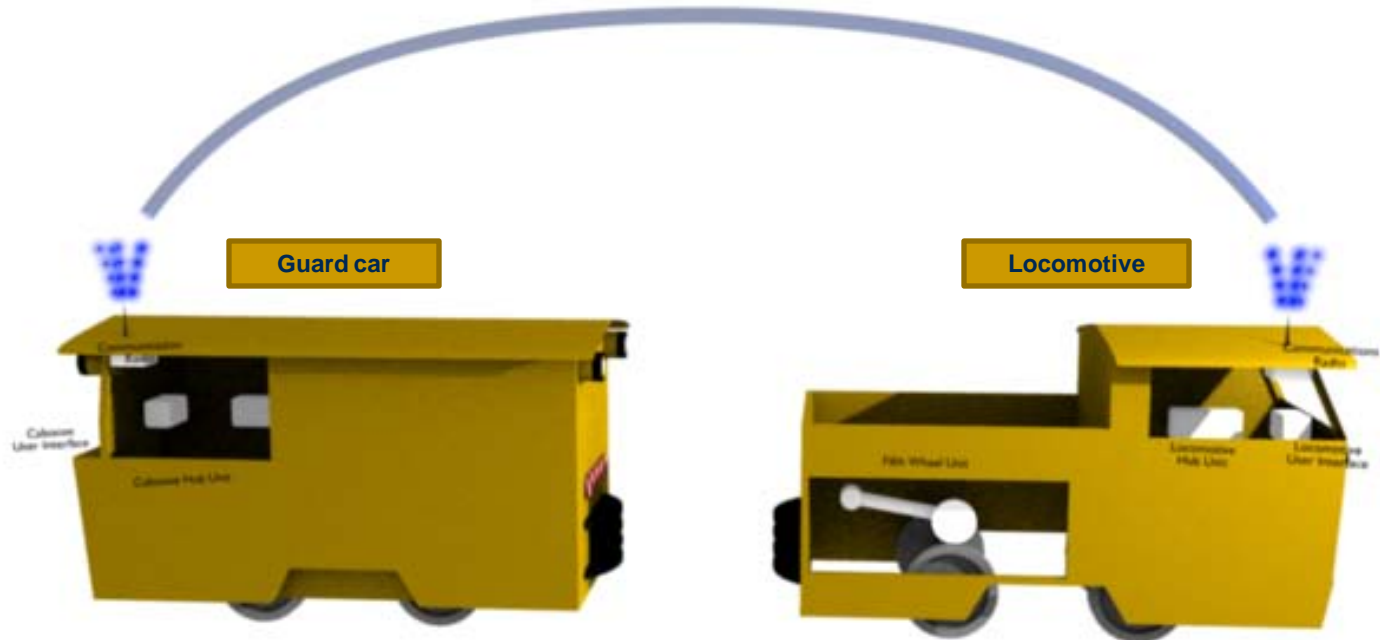
The company has embarked on further initiatives to reduce the exposure of employees to the hazards associated with the Horizontal Transport Process which are:

- Guard communication systems
- Auto Couplers
- New Era Loco's
- Re-railing device
- Proximity detection systems (PDS), together with MOSH
- Dedicated teams to do upgrades and maintenance on tracks
- Set up the Horizontal Transport Task Team
- Standards on installations



Guard Communication System

The Guard communication system - An "electronic whistle" with enhanced safety features for the Mining Industry.



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Guard Communication System

Features

- Provision for the Guard to stop the train remotely in case of a dangerous situation.
- Enhanced safety for operating personnel by doing away with the conventional pea whistle.
- Ease of commissioning / use.
- Interface to common loco controllers.



Guard Communication System

Installation Layout



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Guard Communication System

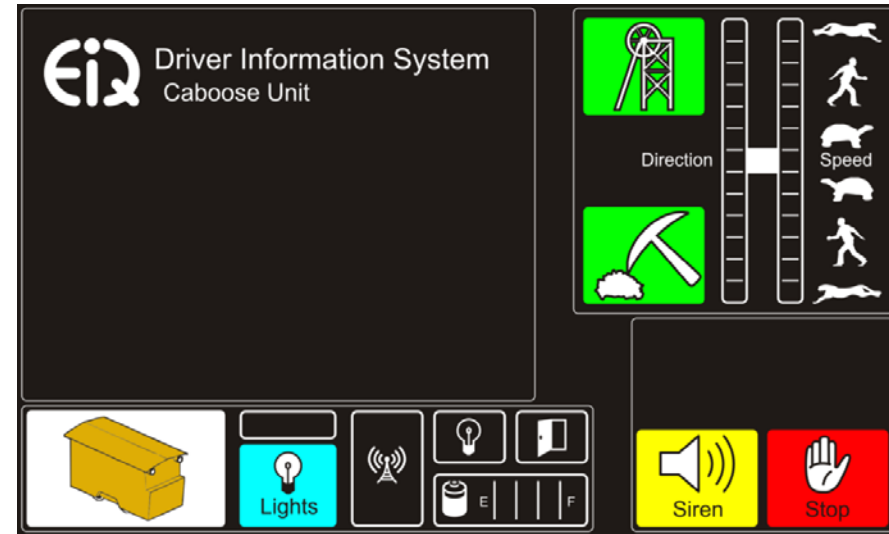
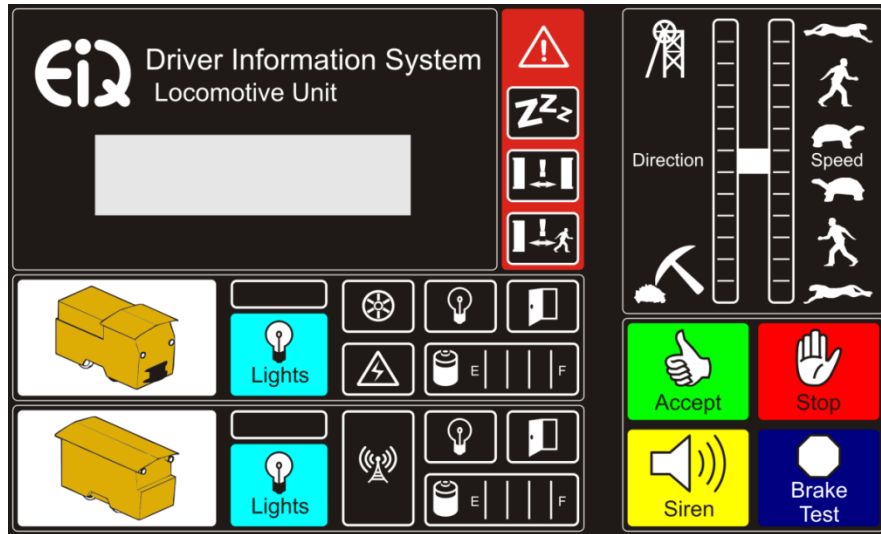
Installation Layout



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Guard Communication System

Installation Layout



- Electronic signal indication, acknowledgement and safety trip display.
- Warning buzzer to indicate alarm conditions.
- LCD display to aid in diagnostics / fault finding.



Guard Communication System

Key Benefits

- Reduce the risk that our employees are exposed to.
- Transport men, material and minerals from point A to point B as quickly and safely as possible.
- To provide a reliable, robust and safe means of communication between the Driver and Guard of a battery/diesel powered locomotive.
- Using “available equipment” for reducing tramming accidents.
- Turning every loco into a “New era loco” in terms of functionality.
- Continuous ongoing R & D.



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Auto Coupler



Auto Coupler

Discussion

- Features
- Key Benefits
- DVD



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Auto Coupler

Note:

- Coupling and uncoupling is the fourth largest contributor towards accidents in the Horizontal Transport Process
 - It is a significant portion of all Lost Day and Serious Injuries in the Horizontal Transport Process.
 - The safety statistics highlight the fact that 53% of accidents whilst coupling or uncoupling became Lost Day Injuries (LDI) and 37% Serious Injuries (SI).
- Replace all hoppers using the shackle and pin with a newly designed auto coupler (most incidents happen with hoppers).
- Phased approach for the rest of the rolling stock.



Auto Coupler

Although we recognise the fact that dedicated well trained tramming crews should be used for coupling and uncoupling of rolling stock, irrespective of the systems used, it must be designed in such a way that the guard can stand clear from the point of contact.



Auto Coupler

Features

Un-coupling Arm



- During coupling and un-coupling the guard does not have to position himself in the “Danger Zone”, thus minimizing the risk of injury.

Alignment Arm



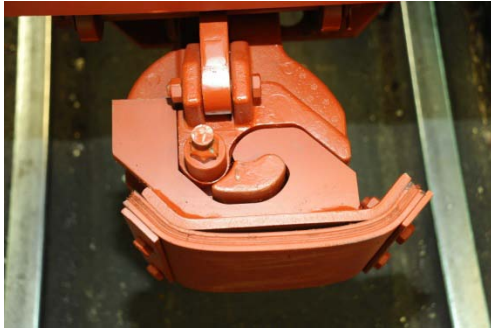
- Align misaligned couplers using the alignment arm.
- Note: Guard does not enter the danger zone.



Auto Coupler

Features

Knuckle Protector



- Use knuckle protector to protect the knuckle during loading operations with mechanical loader.

Re-railing Jack Support



- Knuckle coupler with re-railing device attached.
- Re-rail hopper with Yale jack.



Auto Coupler

Key Benefits

- Reduce the risk that our employees are exposed to.
- To provide a reliable, robust and safe means of coupling and un-coupling of rolling stock.
- Provision for the guard to couple or un-couple whilst signaling to the driver with the hand held unit.
- Rolling stock can couple at a radius of 9m or more.
- Knuckle coupler allow for 45° horizontal movement both ways.
- Knuckle coupler makes provision for a vertical height difference of 25mm up or down.
- Easy to install.





GOLD FIELDS

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Questions

