RBE Day Of Learning

31 July 2026

Presenter: Guards Mabitsela

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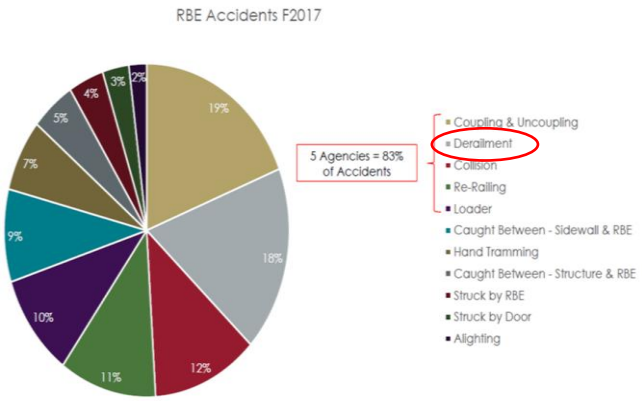
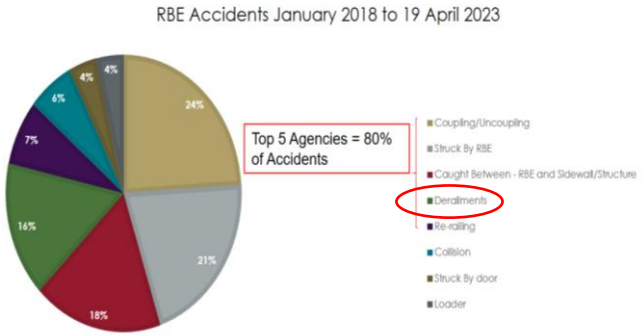
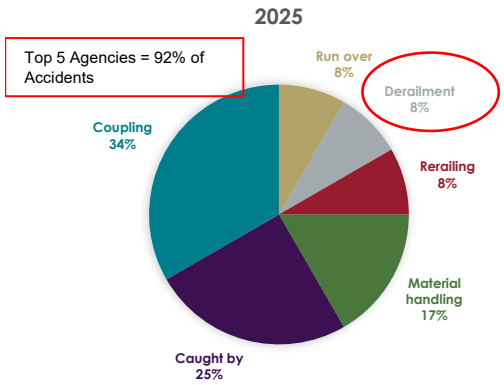
INNOVATION COMMITMENT ACCOUNTABILITY RESPECT ENABLING SAFETY

Top Agencies – RBE Accidents 2017 to 2025

- Analysis done on high risk agencies causing accidents after the RBE Turnaround Strategy was Implemented on <u>29 August 2017</u>







Re-railing of RBE • Revised procedure with scenarios (TARP) • Stop and fix instruction – Rail condition
Rail infrastructure and maintenance management system
Speed limits and speed indicators
Camera surveillance
Speed beacons
VFL day of learning initiatives

Top Agencies – RBE Accidents 2017 to 2025

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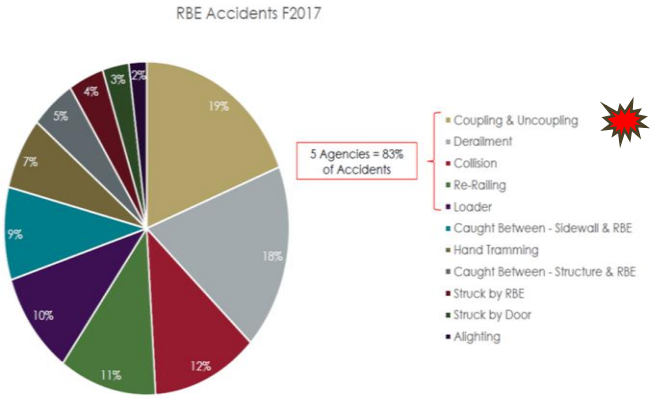
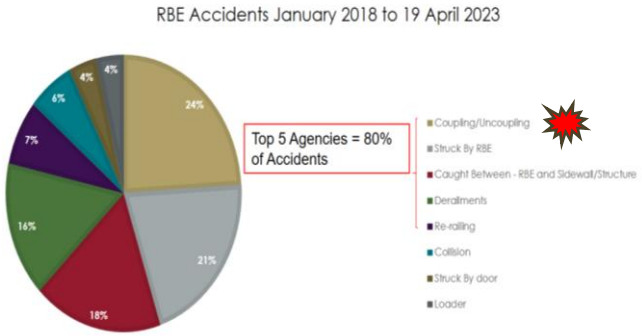
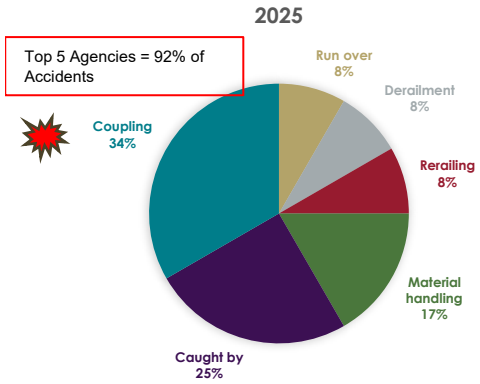






RBE Interventions

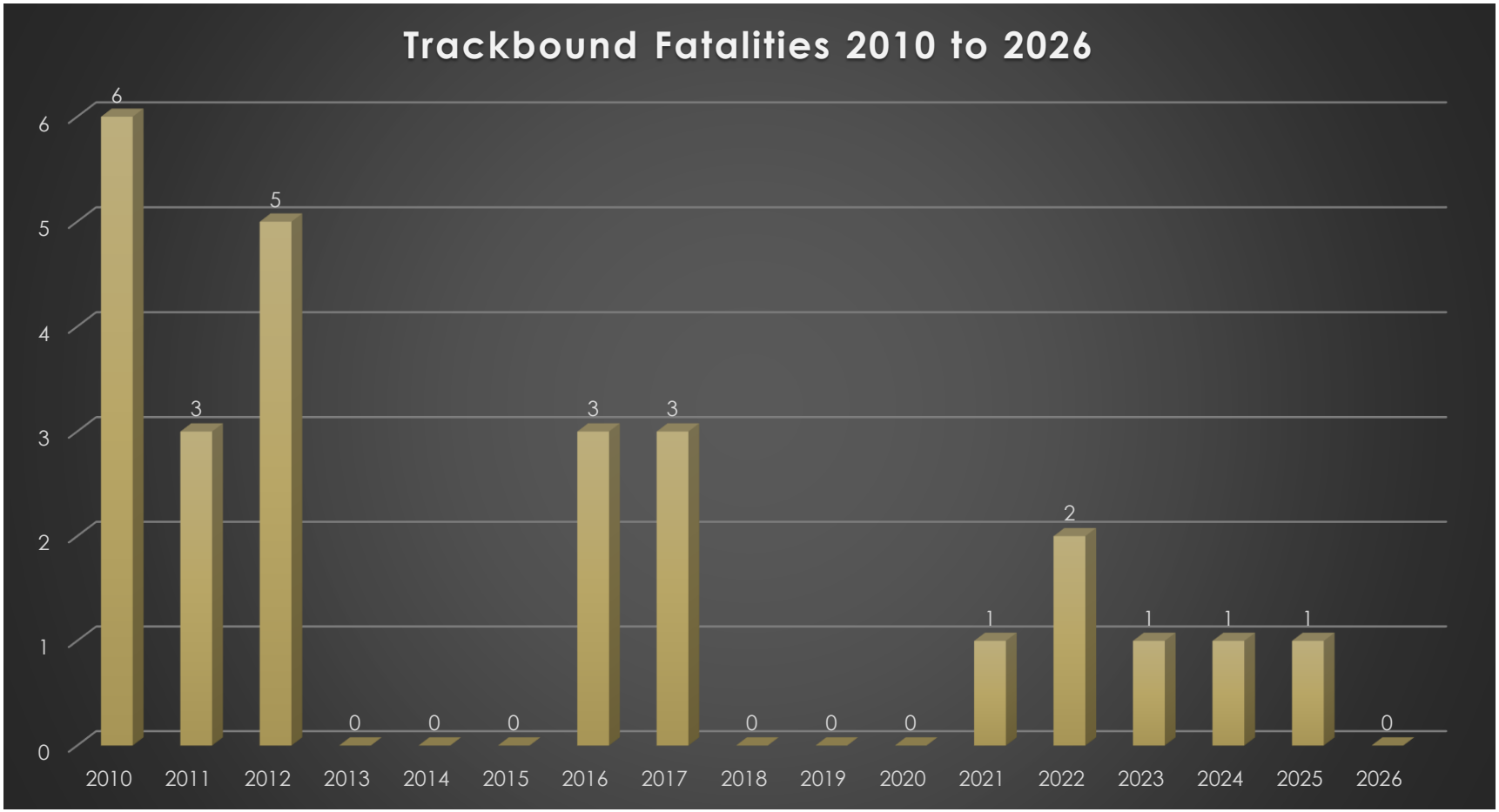
Proximity detection – New configuration
- Addition of proximity acknowledgement, speed restriction, trips if not acknowledged
- All locos to have guard comm, PDS in 2018

Inclusion of door switches on guard car

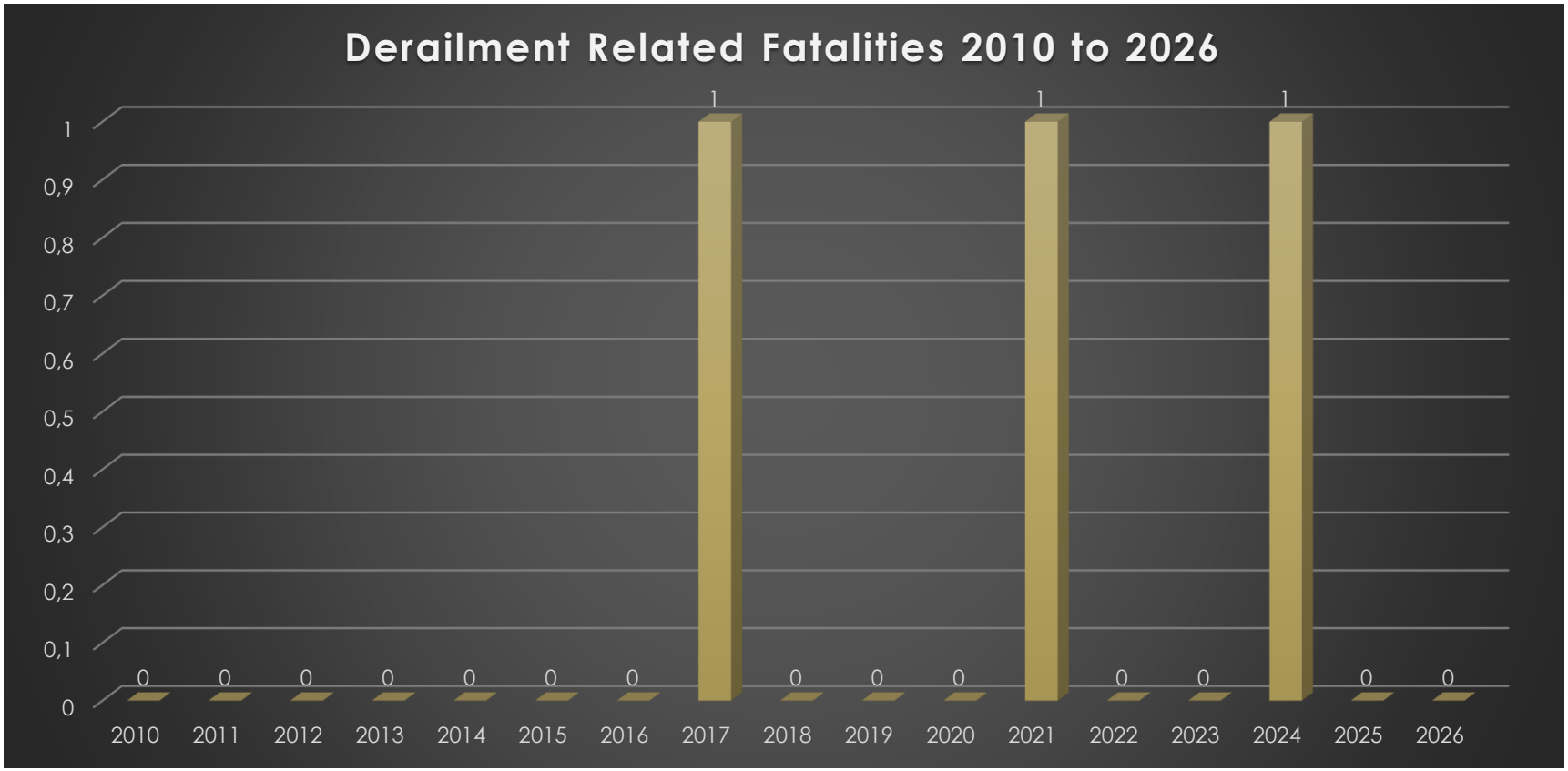
Coupling of RBE
- Pins, shackles, draw bar and chain type sprag

Collision avoidance (loco to loco proximity)

RBE Related Fatalities



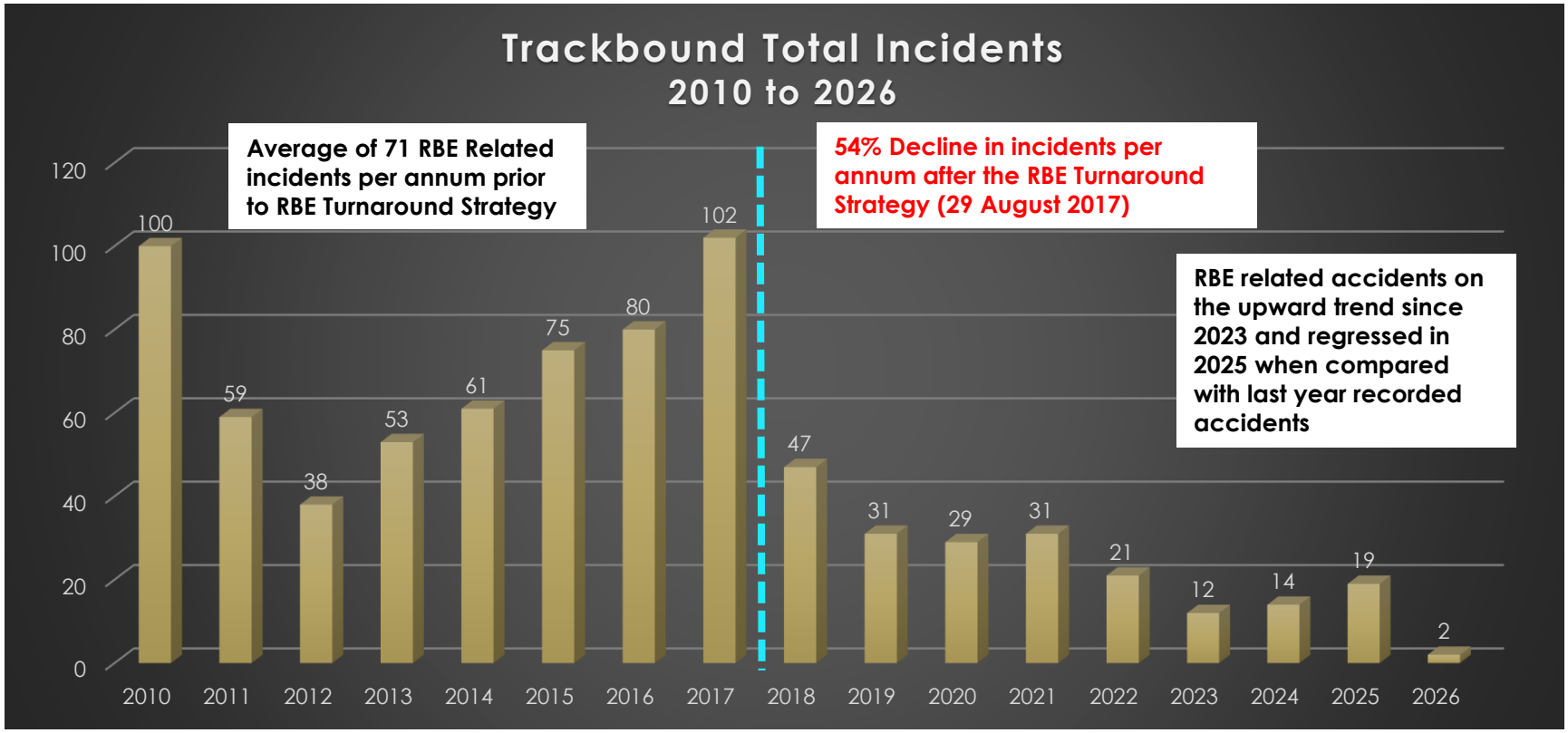
RBE Related Fatalities



Remarks

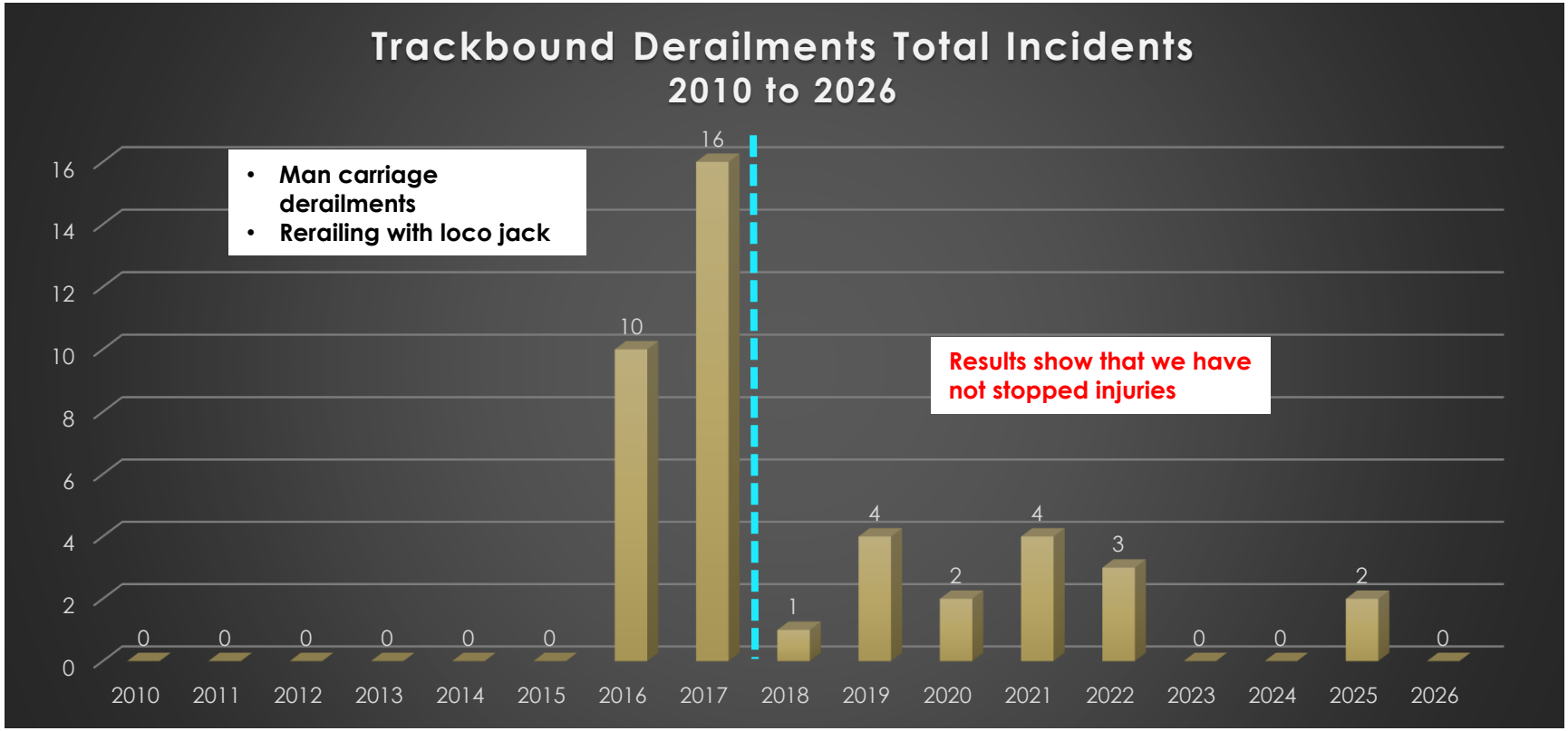
- Drill rig derailment
- Guard car derailment

RBE Related Incidents



Accident clear in Q4 2025 and 2026 YTD

RBE Related Incidents



Remarks

- Hand tramming
- Drill rig
- Pedestrians in haulages

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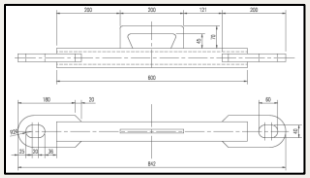
Turnaround Strategy 2017

Focus Area Before and After

Focus Area	Before	After
PDS - LDIS New Configuration	Auto- acknowledge	Driver acknowledge, forced slowdown and tripping
Door Switches	No Door Switches on guard cars	
Speed Limit Indicators	None	

Focus Area Before and After

Focus Area	Before	After
Coupling up of RBE	Variation from Operation to Operation	Standardisation
Pins		
Shackles		
Draw Bars	4 different types and lengths	
Chain Type Sprag	Goose Neck, Skid Sprag, Chain Sprag	

Focus Area Before and After

Focus Area	Before	After
Re-railments	One standard procedure for dealing with all re-railments	3 Scenarios depending on the severity of the derailment 
Training gap [Line supervision]	Knowledge gap of the RBE standards following the RBE incidents investigations	Developed RIMMS Training for Line Supervision
Inter-active behaviour coaching	Did not have the standard permit to allow for line supervision to travel with the Locomotive driver	Permit in place and available from SPG

RIMMS Track Measurement & Classification

Previously

- Tracks were evaluated visually (left room for ambiguity and uncertainty/mistakes)

Present

- System being rolled out where trackwork is physically measured
- Way of classifying trackwork to define maximum speed

Item	Track Classification	High priority item (Stop-and-fix)	Medium Priority (repair within 30 days)
Rail Gauge	Medium Speed	Upper limit: 20mm; Lower limit: -8	Upper limit: 14 mm; Lower limit: -6
	Low Speed	Upper limit: 30mm; Lower limit: -9	Upper limit: 21 mm; lower limit: -7
Vertical Differential	Medium Speed	Limit: 3 mm	2 mm
	Low Speed	Limit: 10mm	7 mm
Horizontal Differential	Medium Speed	Limit: 3mm	2 mm
	Low Speed	Limit: 10mm	7 mm
Joint Gaps	Medium Speed	Limit: 6mm	4 mm
	Low Speed	Limit: 15mm	10 mm

Rail Track Inspection Tools

Figure 25: Precision rail instrument

- Rail track Inspection Instruments.

Description:
- Rail width
- Rail crown
- Verical difference / differential
- Horizontal difference / differential
- Crown height 50-57mm for 22kg/m rail

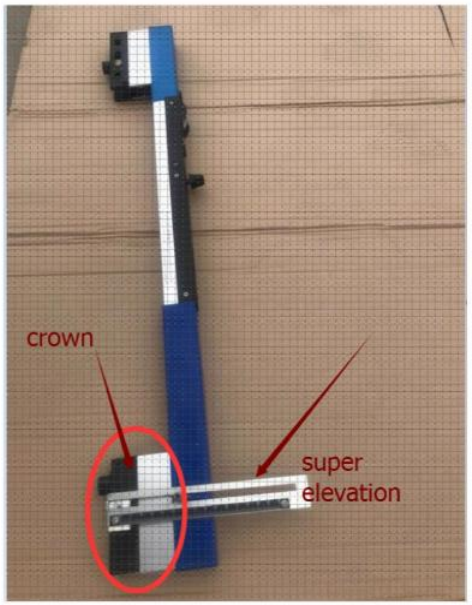
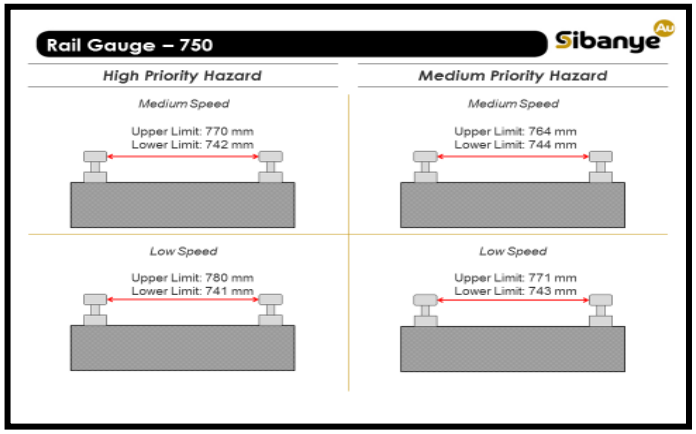
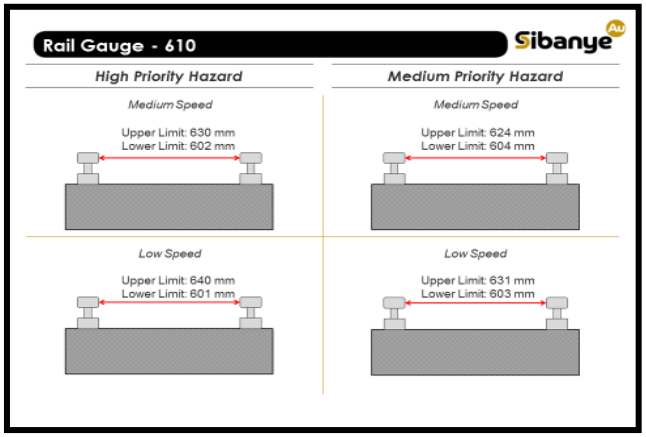


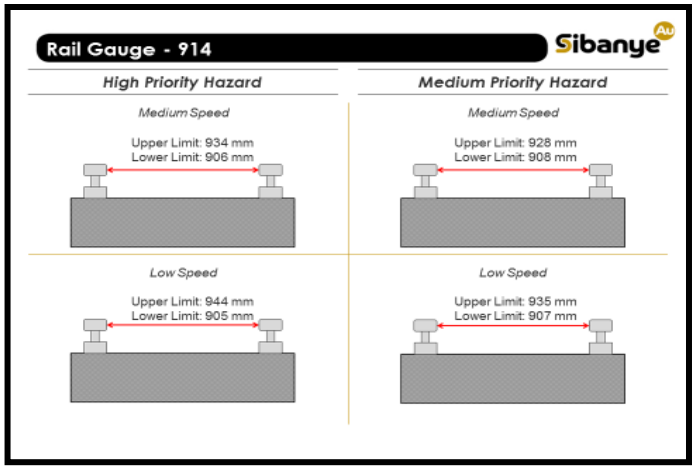
Figure 26: Rail gap measure instrument

Figure 27: Rail & switch discard criteria tool

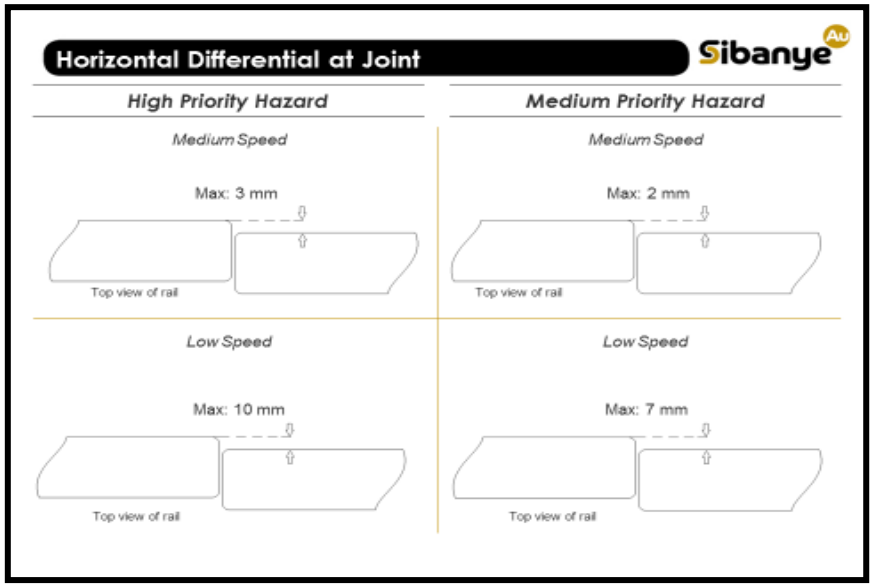
RIMMS - Rail Gauge

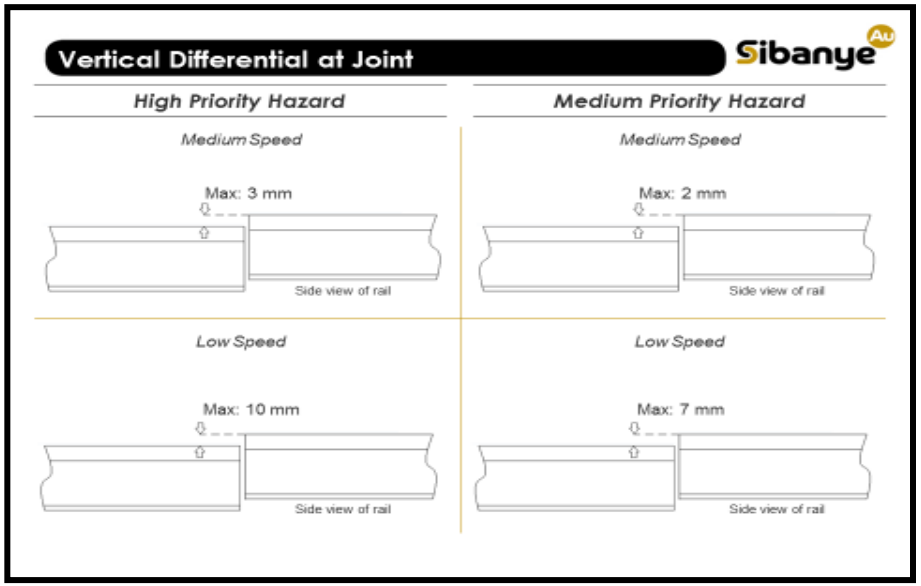




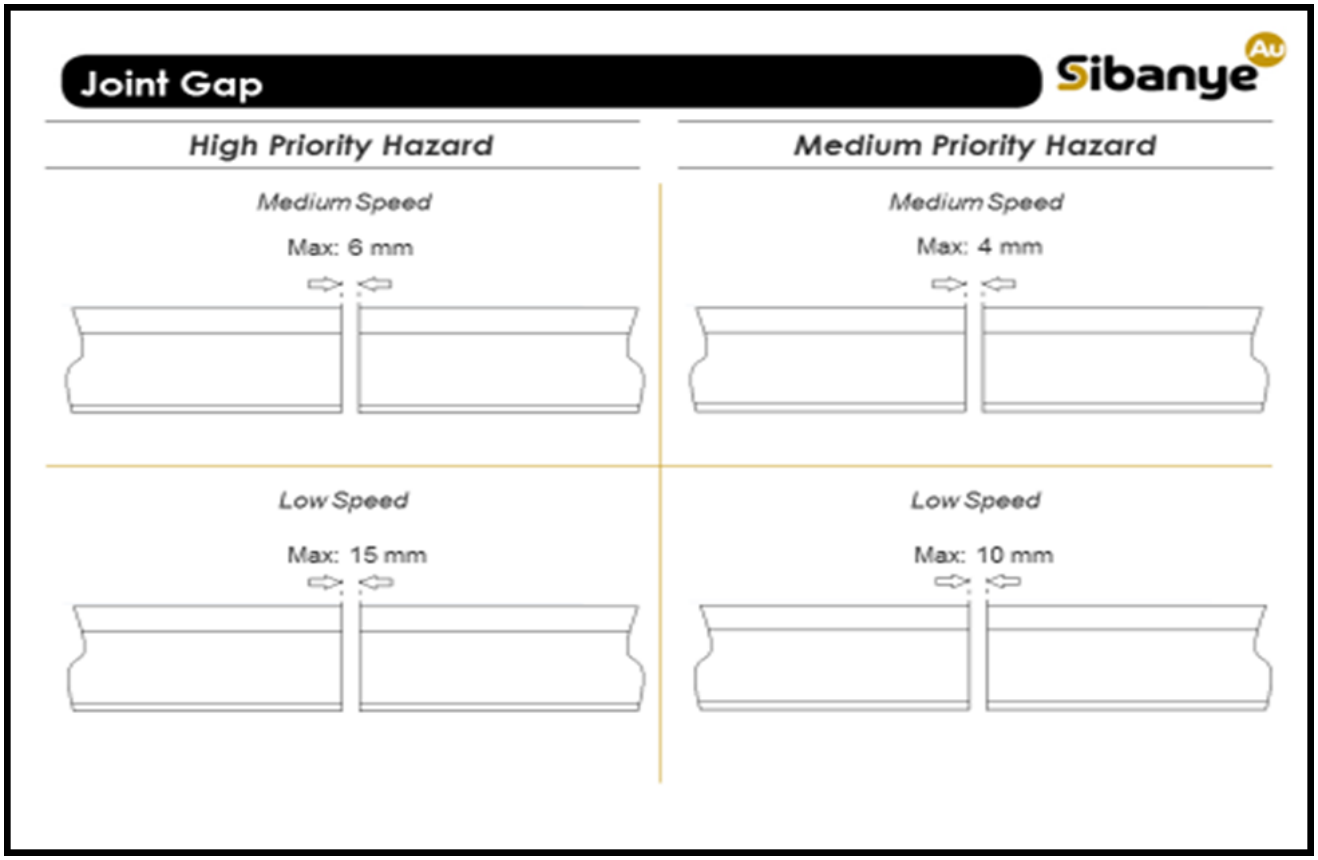


RIMMS - Horizontal and Vertical Differential

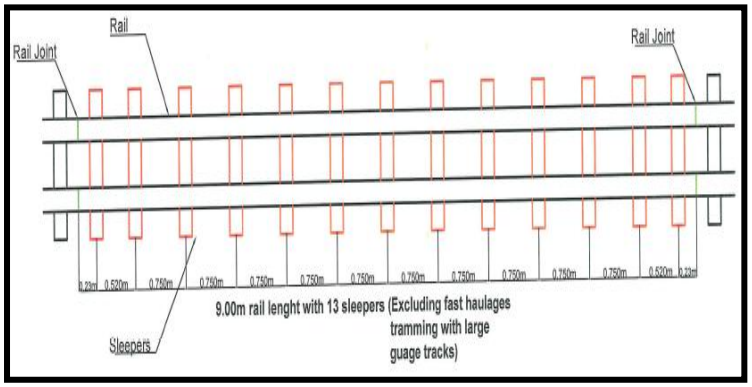


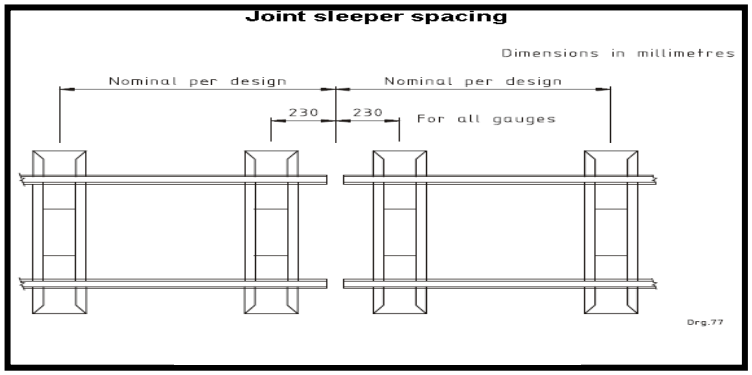


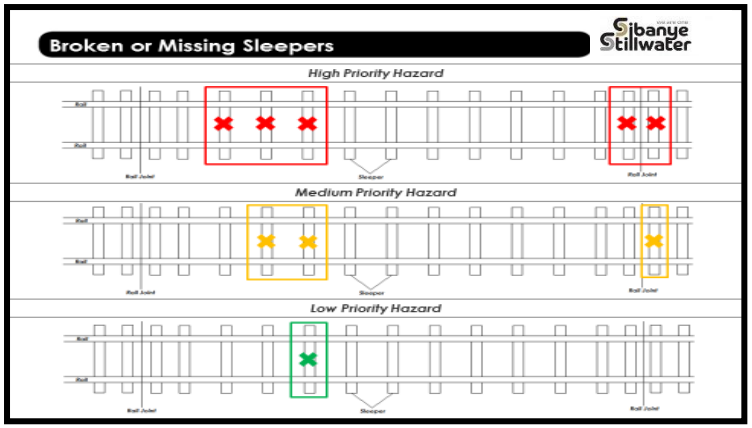
RIMMS - Joint Gap

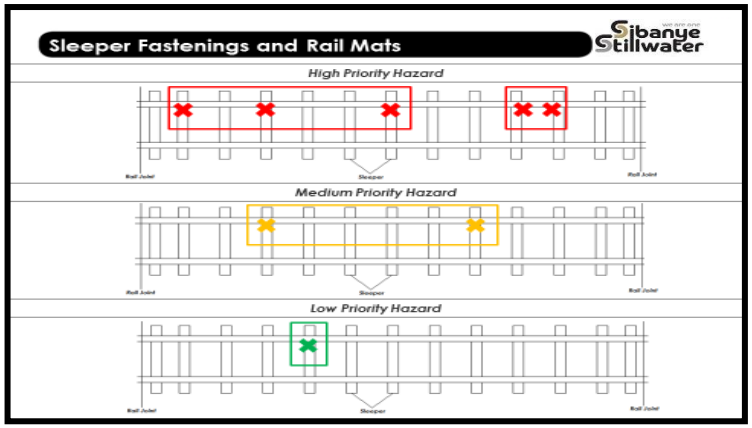


RIMMS - Sleepers & Fasteners



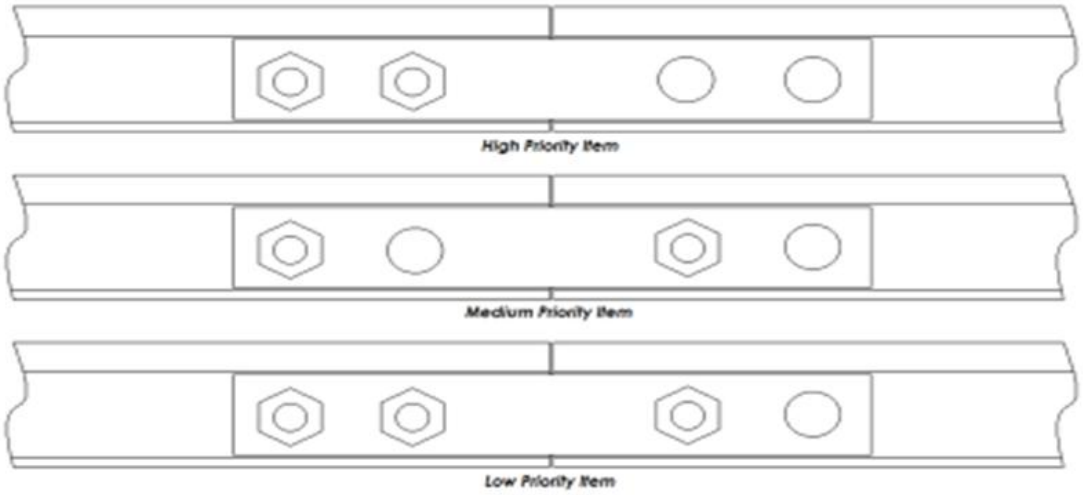






RIMMS - Fish Plates

Fish Plate Joints, Numbering, Switch Numbering



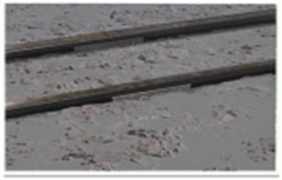
- Any unnumbered fish plate or switch is considered a medium priority hazard and requires rectification within 30 days

RIMMS - Accumulations

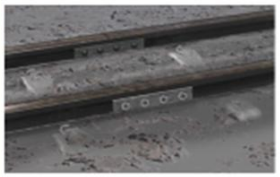
Accumulating on Tracks

Medium Speed Tracks

High Priority



Medium Priority

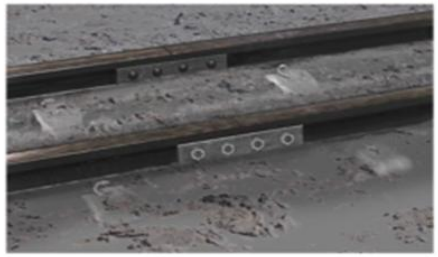


Low Priority

Low Speed Tracks

Accumulation on Switches

High Priority Hazard



RIMMS Track Work Scroll

Operation: DFT
Shaft: 5#
Level Number: 50
Drive Number/Direction: East

FP No	Switch Number	Rail Gauge	Vertical Diff. at Joint	Horiz. Diff. at Joint	Joint Gap	Broken/Missing Sleeper	Sleeper Fastenings	Fish Plate / Joints	Fish plate Numbering	Cracked Broken Rails	Swicthc Condition	Switch Accumulation	Accumulation Drain/ Track / Travelling way	Demarcation of Restricted Area	Lighting at Restricted Areas	Ballast	Missing Drains	Poor Stacking Of Material
1		L	H	H	M	L	M	L	M	H	M	M	M	M	H	H	H	L
2		H	H	L	M	L	L	L	M	M	M	H	M	L	M	H	M	H
3		M	H	M	H	M	L	H	L	M	M	H	H	H	H	H	H	L
4		M	H	M	L	L	L	L	L	M	H	M	H	M	H	L	L	L
5		M	H	M	H	L	M	M	H	L	M	L	L	M	L	H	M	H
6		M	H	M	M	M	M	H	H	M	M	L	H	L	H	L	M	M
7		L	M	H	M	M	M	L	L	M	M	M	L	M	H	L	L	H
8		H	M	M	M	H	L	L	L	M	L	H	M	M	L	H	M	H
9		M	M	H	M	M	H	H	M	M	L	H	L	M	H	H	L	L
10		H	L	L	M	H	L	L	M	M	H	L	H	L	M	L	L	M
11		H	M	H	L	H	L	H	H	L	M	M	M	L	M	M	H	L
12		L	H	L	M	H	L	M	M	H	M	H	L	L	M	M	L	L
13		M	M	M	M	H	H	H	M	M	H	M	M	H	M	M	L	L
14		M	H	L	H	H	H	L	M	L	H	H	H	M	M	H	M	L
15		L	M	L	L	M	L	L	M	L	H	H	M	H	H	H	M	H
16		L	M	M	L	H	H	H	L	M	M	M	M	M	L	H	L	M
17		L	L	M	H	L	H	H	H	L	L	H	L	H	M	H	H	H
18		L	L	M	L	H	M	M	L	H	L	H	M	M	L	L	M	H
19	12	L	H	H	L	H	L	M	H	L	L	H	L	L	M	M	M	H
20		L	L	H	M	L	L	L	H	H	L	M	M	L	H	M	M	L
21		M	M	H	M	M	M	L	L	H	H	L	M	H	H	L	H	M

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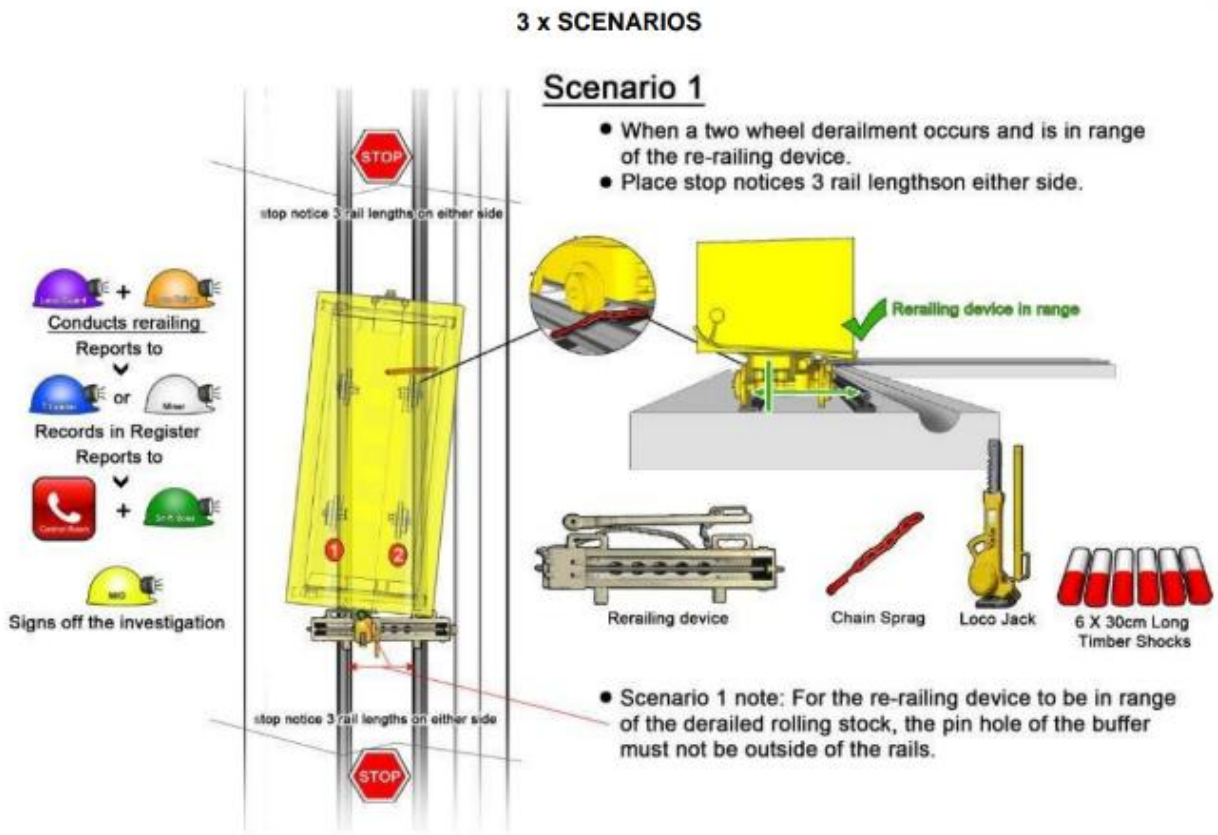
TARP

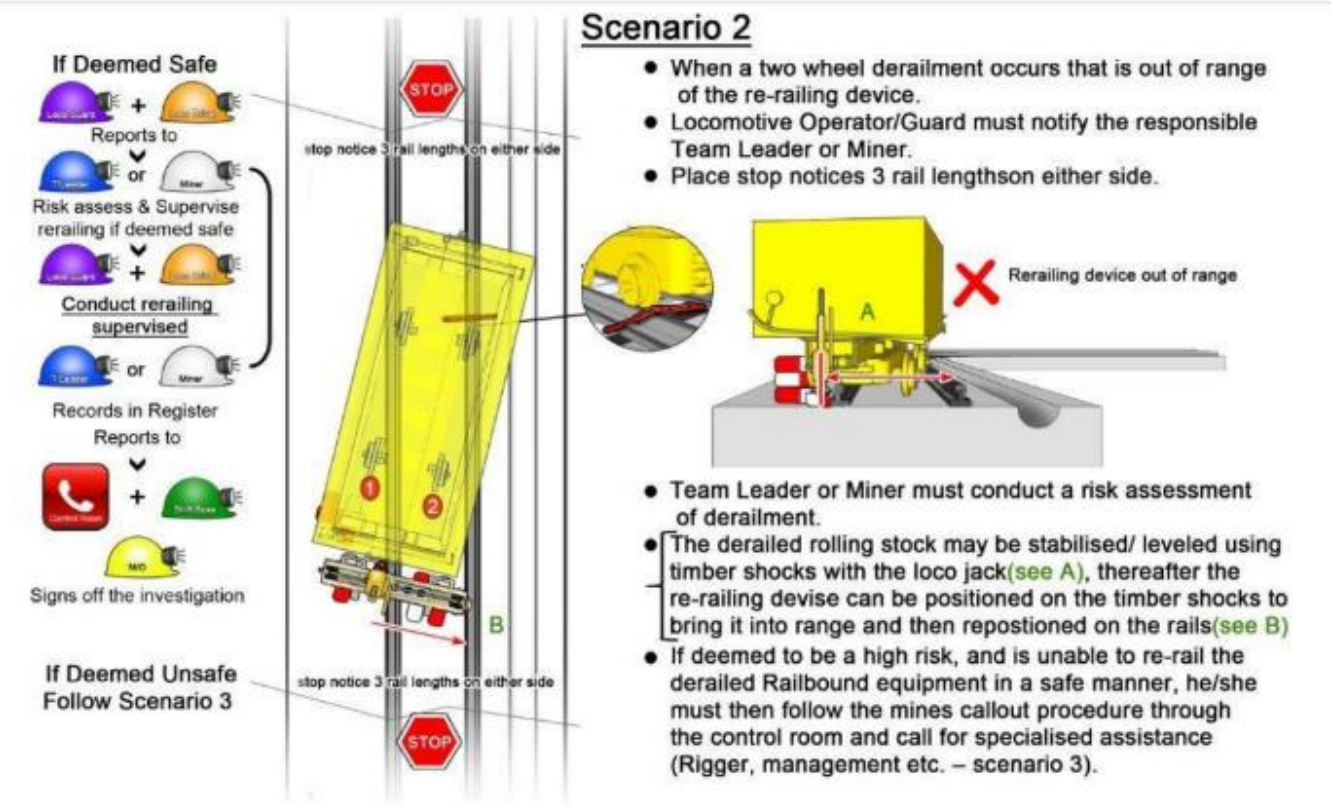
Derailment scenario 1

ANNEXURE: 4



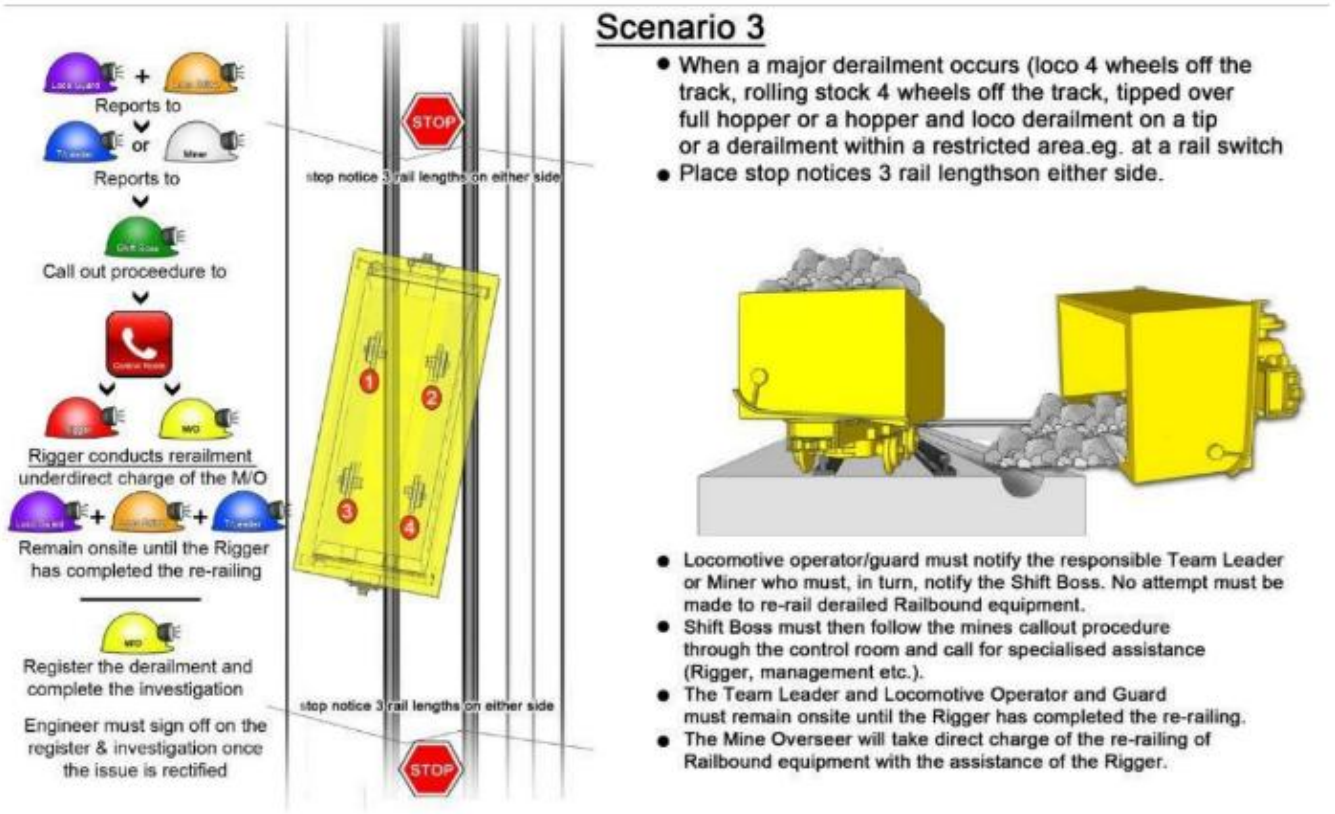
Legend	Designations	Scenario	Legend	Reporting Line
	Locomotive Guard	1		Team Leader
	Locomotive Driver	1		Tramming Miner

Derailment scenario 2



Legend	Designations	Scenario	Legend	Reporting Line
	Locomotive Guard	2		Team Leader
	Locomotive Driver	2		Tramming Miner

Derailment scenario 3



Legend	Designations	Scenario	Legend	Reporting Line
	Locomotive Guard	3		Team Leader
	Locomotive Driver	3		Tramming Miner
				Shift Boss
				Mine Overseer

Derailment checklist

STOP AND FIX INSTRUCTION CHECKLIST

Once derailed Railbound equipment has been re-railed, the following must occur:

In the event of a derailment, scenario dependant (Responsible person.

Scenario 1 – Team Leader / Miner (Trammer);
Scenario 2 – Shiftboss / Shiftboss; and
Scenario 3 – Mine Overseer the following must occur:

Date: _____ **Operations:** _____ **Level:** _____

No	Instruction	Covered		Remarks
		Yes	No	
1	Register the derailment in the derailment register.			
2	Issue a stop and fix notification pertaining to the area in which the derailment occurred.			
3	Determine the substandard condition/root cause of the derailment. Refer to the derailment investigation **ANNEXURE 3.**			
4	Ensure that the substandard condition/root cause of the derailment is rectified.			
5	Provide detail of the rectification and declare the area safe for continued operation via the derailment register.			
6	The responsible Mine Overseer must countersign the safe declaration.			
7.	In the event of a major derailment, the Mine Overseer must complete a derailment investigation report and the responsible engineer must countersign.			

Trammer Name: _____ **Signature:** _____

Tramming Supervisor Name: _____ **Signature:** _____

Mine Overseer Name: _____ **Signature:** _____

Engineer Name: _____ **Signature:** _____

Derailment checklist

Derailment Register

Shaft:

Number	Date	Time	Level	Position of incident	Unit derailed (Loco, car, hopper, other)	Scenario 1, 2 or 3	Cause of derailment	Reported by	Closed out by / date	Repeat at this position?	Remarks / Description

Conclusion

- Resource employees with the required tools to execute the work safely.
- Develop training with visuals for line supervision to understand the inspection requirements including the use of the tools.
- Build mockups to be used for further coaching at the Shafts.
- Assess rail condition (risk-based approach) to identify and inform rail maintenance strategy requirements.
- Interventions on RBE requires the involvement of all stakeholders for successful implementation.

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The End

Zero harm is possible