A VIEW ON TYRE & RIM SAFETY
Tyres, rims and wheel assemblies are safety-critical items that must be maintained and used correctly to achieve acceptable levels of risk.

Inadequate earthmover tyre and rim maintenance carries considerable inherent risk of personal injury and death, as confirmed through several tyre and rim-related fatalities in Mining over the last few years.
We did not get out of the stone age because we ran out of stones.
Rim Tyre Management

Stated or Potential Consequence

Top 4 incidences are Rim Integrity related

Potential Fatality: 45.98%
Injury: 9.2%
Loss of Vehicle: 6.9%
Fatality: 2.3%
Equipment Damage: 35.63%
Bursting or exploding tyres and disintegration of pressurised rim assemblies can kill.

Poor training in tyre and rim maintenance will lead to unsafe situations.

The disintegration of pressurised tyre and rim assemblies is often the main cause of fatalities to tyre servicemen.

Human fatigue will lead to slips and lapses.

Other – mine prepared-non mining-
Major Incidents

- Bursting or exploding tyres and disintegration of pressurised rim assemblies can kill.

**PYROLYSIS**

*Pyrolysis* is the chemical decomposition of a condensed substance by heating.
Initiators of pyrolysis
- contact with high voltage power lines,
- application of heat to wheel rims
- lightning strikes

Effect
- Up to 24 hours later
- Catastrophic

Negate
SOP’s, Training, Emergency Preparedness, Remote Inflation, Fire Suppression equipment
Tyre & Rim Safety

73F = 22.8C  
1035F = 557C  
1400F = 760C  
100psi = 689kpa  
300psi = 2068kpa
18 serious incidents being recorded in NSW in the past 4 years, resulting 12 serious injuries and 3 fatalities. 2 of these fatalities have been the subject of prosecutions.
Cat 793
Wheel traveled 98 meters
Wheels weighs over 2Tons
Other 5 tyres burnt out
Poor training in tyre and rim maintenance will lead to unsafe situations.
Tyre & Rim Safety
Major Incidents

- The disintegration of pressurised tyre and rim assemblies is often the main cause of fatalities to tyre servicemen.
Rim Tyre Management

1. Best Practices
Rim Tyre Management

1. Best Practice

2. Data Comparison
1. Best Practice
2. Data Comparison
3. Repair Standards
4. Group SOP
1. Best Practice

2. Data Comparison

3. Repair/NDT Standards

4. Group SOP

5. Bench Marking
THIRD PARTY VERIFICATION

TRACKING NUMBERS FOR FATIGUE LIFE

Non-Destructive Testing Programs as per AS 4457-1997

CALL UP SYSYTEM

PREVENTION MECHANISIMS

SURVEYS

RIMEX SA
Industry Mitigating Risk

INTRODUCING the

DEFUZER™ VALVE

... by RIMEX

Valve with rupture Template

Defuze the Bomb!
Industry Mitigating Risk

Remote Pressure & Temperature Management System

Rimex Supply Ltd.
Industry Mitigating Risk
Double gutter rim design
Industry Mitigating Risk

RIMEX SA
Industry Mitigating Risk

Two piece lock ring with bolted connection
Industry Mitigating Risk

IGLR (Integrated Lock Ring)
Industry Mitigating Risk

Dummy wheel to pre fit components
Use of ergonomic aids to reduce manual handling
Industry Mitigating Risk

COMPONENTS OF THE HALTEC SUPER LARGE BORE SYSTEM

M-1950 complete swivel valve, including R-520 core housing and T-81 spud

1. Rim Spud
   - T-81

2. Swivel Angle Connector
   - R-525
   - A-126

3. Flexible Extension
   - B-222
   - R-764R
   - R-760
   - R-764R
   - R-763
   - B-222

4. Core Housing
   - A-127
   - R-520

M-1900, same as M-1950, but without T-81 spud

1. CLAMP-IN SPUDS
   - T-81 Clamp-In Spud

CORRECT VALVE GEAR
Industry Mitigating Risk

CORRECT TOOLS

FRONT WHEEL-TOOLS REQUIRED

- RAD-1800NGX-C793
- Custom 1 1/16” - 1” Drive Socket PN-11151

HANDS MUST BE KEPT OUT OF WHEEL ASSEMBLY WHILE OPERATING
ANTI CORROSIVE TIRE ADDITIVE

No more corrosion!

With tire additive

Without tire additive

EARLY WARNING

CRACKS

LEAKING VALVES

TYRE HOLES

O RING REJECTION
Industry Mitigating Risk