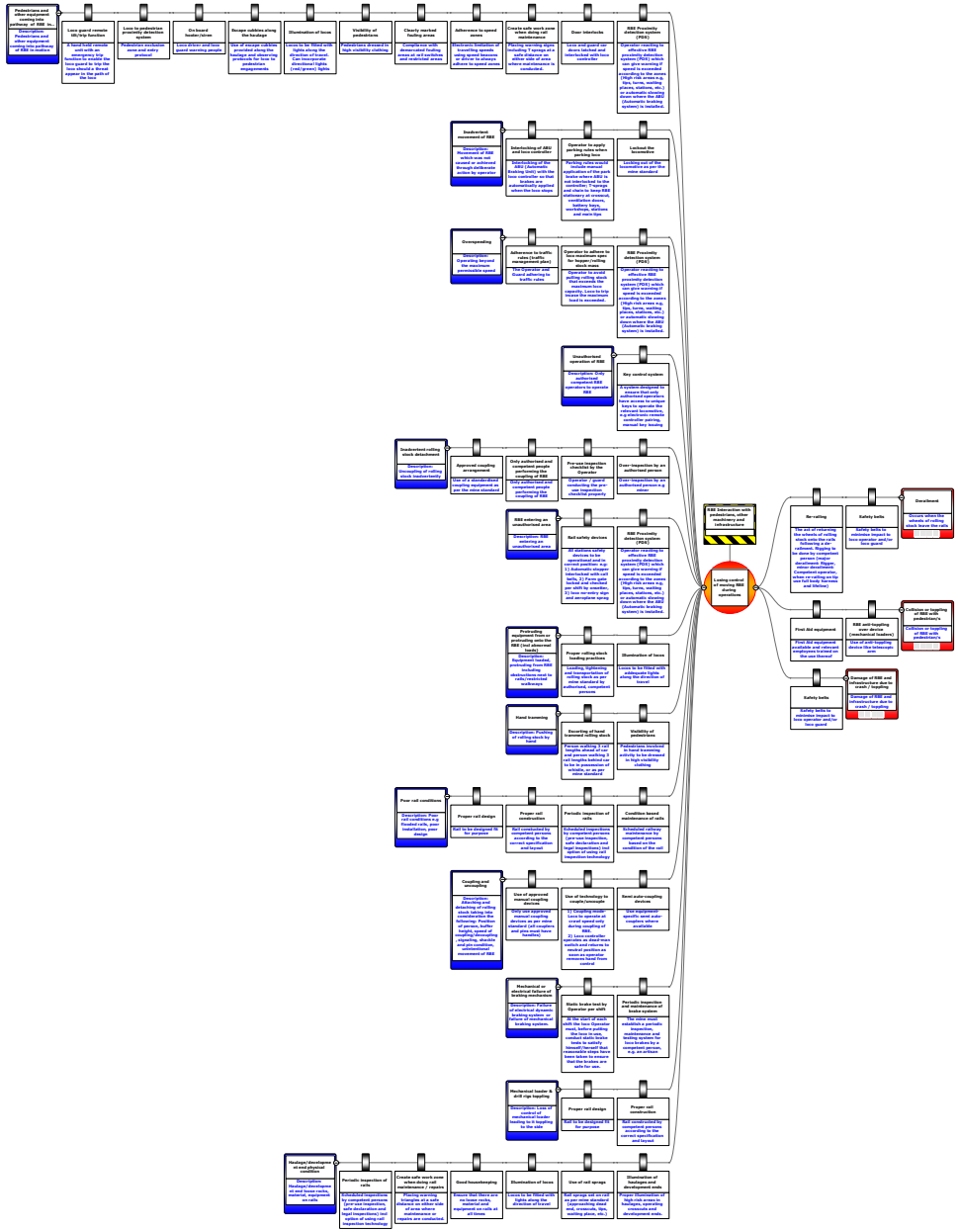
Pedestrians and other machine-operators enter the pathway of RBE in...
Description: Pedestrians and other machine-operators enter the pathway of RBE in motion.
Lone guard remote lift/trip function
A hand-held remote unit with on-board functions to enable the lone guard to trip the loco should a fleet of equipment enter the line
Loss in pedestrian proximity detection system
Pedestrian mechanism nose and entry protrusion
Co-board header/stoker
Lone driver and lone guard warning people
Escape cubbies along the haulage
Use of escape cubbies provided along the haulage to provide safe vantagepoints for loco to pedestrian engagements
Illumination of loco
Loco to be fitted with lights along the chassis/bodyshell. Can incorporate directional lights (red/green) lights
Visibility of pedestrians
Pedestrians around in high visibility clothing
Clearly marked loading areas
Compliance with demarcated loading areas and pedestrian and vehicular areas
Adherence to speed zones
Machine-mounted limiters of travelling speeds and speed limiters on or prior to entrance adhere to speed zones
Create safe work zone when doing cab maintenance
Planning warning signs including T-sponge at a safe distance from the side of area where maintenance is conducted.
Door interlocks
Loco and guard car doors latched and locked when loco is in motion
RBE Proximity detection system (PDS)
Operator reacting to effective RBE proximity detection system (PDS) which can give warning if speed is exceeded according to the zones (High risk areas e.g. Tips, turns, welding pieces, stations, etc.) or automatic slowing down where the ABD (Automatic braking system) is installed.
Unauthorised movement of RBE
Description: Unauthorised movement of RBE which was not caused or achieved through deliberate action by operator
Interlocking of ABD and loco controller
Interlocking of the Automatic Braking (ABD) with the loco controller so that brakes are automatically applied when the loco stops
Operator to apply parking brakes when parking loco
Parking rules around the parking of locos, location of the park brake where ABD is not interfered by the loco controller, and chain to keep RBE stationary at crossed, ventilation doors, tipples, tips, workshops, stations and turn-tips
Lockout the locomotive
Locking out of the locomotive as per the rules standard
Overspeeding
Description: Operating beyond the maximum permissible speed
Adherence to traffic rules (Traffic management plan)
The Operator and Co-operator adhere to traffic rules
Operator to adhere to loco maximum tyre load limits and shock zones
Operator to avoid shock loading, that may exceed the maximum loco tyre limits, or loco to trip because the tyre load is exceeded.
RBE Proximity detection system (PDS)
Operator reacting to effective RBE proximity detection system (PDS) which can give warning if speed is exceeded according to the zones (High risk areas e.g. Tips, turns, welding pieces, stations, etc.) or automatic slowing down where the ABD (Automatic braking system) is installed.
Unauthorised operation of RBE
Description: Only authorised/ competent RBE operators to operate RBE
Key control system
A system designed to ensure that only authorised operators have access to a key to operate the relevant locomotive, e.g. electronic swipe, manual key issuing
Inadvertent rolling stock detachment
Description: Uncoupling of rolling stock inadvertently
Approved coupling arrangement
Use of a standardised coupling equipment as per the rules standard
Only authorised and competent people performing the coupling of RBE
Only authorised and competent people performing the coupling of RBE
Pre-use inspection by Operator
Operator / guard conducting the pre-use inspection properly
Over-inspection by an authorised person
Over-inspection by an authorised person e.g. mine
RBE entering an unauthorised area
Description: RBE entering an unauthorised area
Rail safety devices
All stations safety devices to be operational and to comprise of: 1) Automatic stopper interlocked with rail 2) Rail safety devices bolted and checked per shift by operator, 3) Rail safety devices and aerophone spray
RBE Proximity detection system (PDS)
Operator reacting to effective RBE proximity detection system (PDS) which can give warning if speed is exceeded according to the zones (High risk areas e.g. Tips, turns, welding pieces, stations, etc.) or automatic slowing down where the ABD (Automatic braking system) is installed.
Pre-loading stockpile for preloading onto the RBE (incl abnormal stockpile)
Description: Equipment/ loaded, preloading from RBE onto stockpile, stockpiles next to rails/restricted walkways
Proper rolling stock loading practices
Loading, tightening and transportation of loads on rolling stock as mine standard by authorised, competent persons
Illumination of loco
Loco to be fitted with adequate lights along the chassis of loco
Hand tramming
Description: Pushing of rolling stock by hand
Escorting of hand trammed rolling stock
Person walking 3 rail lengths ahead of car and person walking 3 rail lengths behind car to be in possession of whistle, as as per mine standard
Visibility of pedestrians
Pedestrians involved in hand tramming activity to be dressed in high visibility clothing
Poor rail conditions
Description: Poor rail conditions e.g. Bended rails, poor rail joints, poor rail ballast
Proper rail design
Rail to be designed fit for purpose
Proper rail construction
Rail constructed by competent persons according to the current specification and layout
Periodic inspection of rails
Scheduled inspections by competent persons (pre-use inspection, daily declaration and legal inspections) (not option of using rail inspection technology)
Condition based maintenance of rails
Scheduled railway maintenance by competent persons according to the condition of the rail
Coupling and uncoupling
Description: Attaching and detaching of rolling stock taking into consideration the following: Position of coupling, Height, Weight, speed of coupling/decoupling, Hand signals, and pin-condition, intentional movement of RBE
Use of approved manual coupling devices
Only use approved manual coupling devices as per mine standard (Hook-and-pin, and pin-and-hook handles)
Use of technology to couple/uncouple
1) Coupling-assist Loco to operate at overall speed only during coupling of RBE. 2) Loco controller: Operator to apply brakes, switch and returns to neutral position as per mine standard. Remote-Assist Flow control
Semi auto-coupling devices
Use equipment specific semi auto-couplers where available
Mechanical or electrical failure of braking mechanism
Description: Failure of Automatic Braking system or failure of mechanical braking system
Static brake test by Operator per shift
At the start of each shift, before pushing the loco to use, operator to do a static brake test to satisfy himself/herself that brakes are working. Loco brake below to ensure that the brakes are safe for use.
Periodic inspection and maintenance of brake system
Mine must establish a periodic inspection, maintenance and repair of the loco brakes by a competent person, e.g. artisan
Mechanical loader & drill rigs toppling
Description: Loss of control of mechanical loader leading to it toppling to the side
Proper rail design
Rail to be designed fit for purpose
Proper rail construction
Rail constructed by competent persons according to the current specification and layout
Heatings/ development and physical condition
Description: Heatings/ developments, physical condition of rails, variances on rails
Periodic inspection of rails
Scheduled inspections by competent persons (pre-use inspection, daily declaration and legal inspections) (not option of using rail inspection technology)
Create safe work zone when doing cab maintenance / repairs
Planing warning triangles at a safe distance from the side of area where maintenance or repairs are conducted
Good housekeeping
Ensure that there are no loose rocks, rubble, etc. on the rail surface at all times
Illumination of loco
Loco to be fitted with lights along the chassis of loco
Use of rail sprays
Rail sprays not used as per mine standard (Operator, Loco, Rail crossing, Rail washing plant, etc.)
Illumination of haulages and development ends
Proper illumination of high risk areas in haulages, rail crossing, tipples and development ends.
RBE Interaction with pedestrians, other machinery and infrastructure
Losing control of moving RBE during operations
Re-railing
The act of returning the wheels of rolling stock back to the rail following a de-railment. Rigging to be done by competent operator (expert development: Rigger, Rigger-Operator, Competent operator, when re-railing on tip line, on the main haul road and bin line)
Safety belts
Safety belts to minimise impact to loco operator and/or loco guard
Derailment
Occurs when the wheels of rolling stock leave the rails
Fixed Jibd equipment
Fixed Jibd equipment available and relevant employees trained on the use thereof
RBE anti-toppling over device (Automatic loaders)
Use of anti-toppling device like telescopic arm
Collision or toppling of RBE with pedestrian's
Collision or toppling of RBE with pedestrian's
Safety belts
Safety belts to minimise impact to loco operator and/or loco guard
Damage of RBE and infrastructure due to crash / toppling
Damage of RBE and infrastructure due to crash / toppling

material, equipment on rails

Scheduled inspections by competent persons (including pre-use safe declaration and legal inspections) but option of using rail-mounted inspection

Placing warning triangles at a safe distance from the end of area where maintenance or repairs are conducted

Ensure that there are no loose rocks, material or rails on the roadway at all times

Levers to be fitted with lights along the direction of travel

Rail sprags set on rail as per mine standard (including those in the roadway, the working place, waiting place, etc.)

Proper illumination of high-risk zones in roadways, working places, and development ends.