

## **Plant Hazard Analysis & Risk Assessment**

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## Model: Platform Basket RR9/200 Rail Boom Lift

## Person conducting assessment:

This Hazard Identification and Risk Assessment document is Model specific. It is based on the knowledge that all new machines of this model were/are produced to the same specification and design. It assumes all examples of this exact model currently in service to be as per the original specification, and to have been and continue to be operated and maintained in accordance with the Manufacturers requirements, and with all applicable statutory and regulatory requirements of an original example of the Model for which it was prepared. This Assessment must be reviewed by all stakeholders as required:

- Having regard to the manufacturers approved options ٠
- Having regard to the general arrangement of miscellaneous equipment or facilities that may be • provided on the plant according to the end users requirements or specification
- According to the particular circumstances under which the plant is used and maintained .
- As new Hazards are identified and/or as risks are reassessed
- As existing risk control measures are revised or new risk control measures are introduced and implemented
- As and when work procedures are altered or revised
- Having regard to any unauthorised alterations or modifications made to the design or operation of the equipment

Monitor, in conjunction with the design verification process delivered by Engineering Design Innovation have made every attempt to identify all reasonably foreseeable operating circumstances in preparing this Assessment, however no guarantee as to the completeness of this Assessment is provided or implied.

It is the responsibility of Owners, Employers and Operators to identify all hazards associated with the use of this equipment specifically applicable to the task to be carried out and to where the equipment is to be used or located. They must assess the risk potential for each of the identified hazards and ensure that all reasonably practicable steps are taken to ensure those risks are effectively controlled.

- All operators must be trained and competent in the safe use of this particular piece of equipment, and hold appropriate qualifications as required by applicable regulatory requirements
- Operators of the equipment to which this Plant Risk Assessment refers must read and understand the Instructions for Use and Warnings contained within the Operators Manual prior to use
- All Daily Pre-Start Checks, Routine and Periodic Inspections, Maintenance and Repairs to this equipment ٠ must be carried out in accordance with the requirements of AS2550.10-2006



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| ID  | Description of   | f Hazard Potential           | Activity                           | Risk control measures already  | Risk          | Supplementary risk control  | Risk      |
|-----|--|------------------------------|------------------------------------|--|---------------|---|-----------|
|     | Origin   | Consequence                  |                                    | implemented  |               | measures  | score     |
| 1   | Operator Competency  | /                            |                                    |  |               |   |           |
| 1.1 | Untrained operator,<br>not following proper<br>operating<br>procedures.<br>Distracted operator.<br>Following a poor<br>system of work.<br>Operator working<br>alone. | Crushing<br>Impact<br>Trauma | Set up<br>Operation<br>Maintenance | Operation instructions<br>explained in operator's manual                                     | C4<br>Extreme | Train operators on safe use of the<br>plant.<br>Operator training should include at<br>least the following:<br>• pre-operation inspections<br>• safe operation of plant<br>• regular maintenance tasks<br>• understanding of plant operation<br>• capabilities and limitations<br>• emergency procedures<br>Do not operate the plant unless<br>proper training has been received.<br>Ensure operator's manual is kept<br>with the plant for reference.<br>Do not operate the plant when<br>distracted, ill, excessively fatigued,<br>or under the influence of drugs or<br>alcohol.<br>Implement appropriate system of<br>work based on manufacturer's<br>recommendations (e.g. operating<br>instructions shown in operator's<br>manual). | B1<br>Low |
| 1.2 | Misuse<br>Unauthorised use of<br>plant   | Crushing<br>Impact<br>Trauma | Operation                          | Operator's manual warns about<br>not using the plant for other<br>than its intended purpose. | C4<br>Extreme | Do not use the MEWP for any<br>other purpose than its intended<br>use as explained in the operator's<br>manual.<br>Do not operate the plant unless<br>proper training has been received.  | B1<br>Low |

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|     | Origin   | Consequence             | 7                    | implemented  |               | measures   | score     |
|     |  |                         |                      |  |               | Keys are not to remain in an unattended machine.   |           |
| 2   | Plant Limitations  | •                       |                      |  |               |  |           |
| 2.1 | Plant overload<br>causing<br>- overturning<br>- structural failure                   | Overturning<br>Crushing | Driving<br>Operation | Maximum Rated Capacity<br>(MRC) displayed on basket. | C4<br>Extreme | Learn and understand plant<br>limitations.<br>Consider weight of all workers,<br>tools and equipment to be loaded<br>into basket.  | A2<br>Low |
|     |  |                         |                      |  |               | Do not exceed work platform capacity.  |           |
|     |  |                         |                      |  |               | Regularly inspect the MEWP as per<br>maintenance schedule to ensure<br>integrity of structural members.  |           |
| 2.2 | Excessive incline<br>causing plant to<br>overturn                                    | Overturning             | Driving<br>Operation | Plant limitations given in<br>Operator's Manual.     | C3<br>High    | Do not drive the plant over ground<br>slopes which exceeds its<br>limitations.   | B2<br>Low |
|     |  |                         |                      |  |               | Conduct site risk assessment to determine suitability of job site before starting any work.  |           |
| 2.3 | Excessive wind force causing overturning.  | Overturning             | Operation            | Follow maximum wind speed rating.                    | C3<br>High    | Constantly monitor wind speed<br>when operating in wind sensitive<br>areas.  | B2<br>Low |
| 3   | Plant at worksite  | )<br>                   |                      |  |               |  |           |
| 3.1 | Collision with<br>- site<br>infrastructure<br>- other plant<br>and/or<br>pedestrians | Crushing<br>Impact      | Operation<br>Driving | Motion audible and visual alarm present.             | C3<br>High    | Beware of any obstructions around<br>the work area; survey the area<br>before moving the plant.<br>Beware of other plant and persons<br>around the work area, in particular<br>when travelling around corners or<br>blind spots. | B2<br>Low |

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|     | Origin   | Consequence             |  | implemented  |                            | measures   | score     |
| 3.2 | Exhaust fume build-<br>up in poorly<br>ventilated areas.                     | Asphyxiation            | Operation                              |  | C4<br>Extreme              | Ensure there is enough ventilation<br>at the job site whenever<br>combustion engine is used to<br>operate the plant.<br>May require forced mechanical<br>ventilation.  | B1<br>Low |
| 3.3 | Plant positioned<br>near or driven over<br>large depressions /<br>obstacles. | Overturning<br>Collapse | Operation<br>Driving                   | Operator's manual<br>recommends avoiding working<br>near ditches and trenches.   | C4<br>Extreme              | Always maintain a safe distance<br>from ditches, trenches or pit walls<br>while operating plant.<br>Plan a route to safely bring the<br>plant to the job site.<br>Avoid driving over large obstacles<br>or depressions.<br>Assess the ground conditions<br>before setting up the plant.  | B2<br>Low |
| 4   | Operation  |                         |  |  |                            |  |           |
| 4.1 | Driving on steep<br>ground   | Overturning<br>Crushing | Driving<br>Set up                      | Plant limitations displayed on<br>platform and operator's<br>manual.<br>Remote control permits<br>operator to stand at a safe<br>distance away from the plant<br>during driving operation. | A5<br>High                 | Carry out job site risk assessment<br>to determine suitability of the site<br>before commencing any work.<br>Avoid driving on steep ground; find<br>alternative routes whenever<br>possible.<br>Avoid driving across steep ground,<br>drive with the tracks parallel to<br>ground inclination.<br>Keep other people away from the<br>lower side of the plant while<br>driving on steep ground. | A1<br>Low |
| 4.2 | Sudden change of<br>direction when<br>driving                                | Crushing<br>Impact      | Set up<br>Driving                      |  | C3<br>High                 | Ensure there a safe working<br>distance around the work area and<br>check no person is around it<br>before driving.  | A1<br>Low |

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|     | Origin  | Consequence                                      |  | implemented  |               | measures  | score     |
| 4.3 | Overturning                                   | Crushing<br>Falling<br>Death                     | Set up<br>Operation<br>Emergency<br>Maintenance<br>Transport | Stability calculations supplied,<br>which include different plant<br>configurations.<br>Stability test report supplied.  | C5<br>Extreme | Do not exceed plant's rated<br>capacity and environmental<br>limitations.<br>Pay attention to ground conditions<br>when driving and setting up the<br>plant.  | B1<br>Low |
| 4.4 | Excessive chassis inclination                 | Crushing<br>Falling                              | Operation  | Plant grade ability limitations<br>included in Operator's Manual<br>Plant fitted with audible alarm<br>which alerts the operator when<br>maximum chassis inclination is<br>reached and the platform is out<br>of the transport position. | B5<br>Extreme | Visually check chassis inclination<br>via control panel before operating<br>the aerial part of the machine.<br>Check calibration of electronic<br>inclinometer on a regular basis.                                  | A1<br>Low |
| 4.5 | Load and moment-<br>sensing system<br>failure | Crushing   | Operation  | Operator's manual<br>recommends pre-operation<br>check of safety devices at the<br>start of every shift.   | C5<br>Extreme | Always perform pre-operation<br>inspection.<br>Do not operate a faulty plant.   | A1<br>Low |
| 4.6 | Excessive work<br>platform inclination        | Falling  | Operation  | Work platform automatic<br>levelling system present.   | A5<br>High    | Wear fall-arrest harness.<br>Regularly check operation of work<br>platform levelling system.<br>Inhibit work platform movements<br>which cause the work platform<br>angle to exceed 10 degrees.                     | A1<br>Low |
| 4.7 | Operator control                              | Woker falls from basket<br>Overturning<br>Impact | Operation  |  | C5<br>Extreme | Operate the drive control levers<br>gently in order to avoid abrupt and<br>jerky movements.<br>When driving, pay special<br>attention to stability and the<br>dimensions, especially the length,<br>of the machine. | B2<br>Low |

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|------|---|---|--|---|---------------|--|-----------|
|      | Origin  | Consequence   |  | implemented   |               | measures   | score     |
|      |   |   |  |   |               | Wear safety harnesses and keep<br>them fastened whenever<br>operating the machine.   |           |
| 4.8  | Uncontrolled<br>movement of<br>plant components       | Crushing<br>Impact<br>Shearing                        | Set up<br>Operation<br>Maintenance<br>Cleaning     | Prestart inspection as per<br>manufacturers<br>recommendation.<br>Crush, shear hazard decals on   | C3<br>High    | Isolate power to plant and remove<br>the main switch key when<br>performing maintenance and<br>cleaning tasks.   | B2<br>Low |
|      |   |   | Troubleshoot                                       | machine.  |               | Stay clear of components which may swing or drop unexpectedly.   |           |
|      |   |   |  |   |               | Maintenance to be carried out by a competent person.   |           |
|      |   |   |  |   |               | Pay attention to crush and shear hazard decals to machine.   |           |
| 4.9  | Inadvertent<br>operation of<br>controls               | Crushing<br>Impact                                    | Set up<br>Operation<br>Maintenance<br>Emergency    | Plant movement stops when<br>controls are released.<br>Work platform controls<br>protected with fixed barriers.   | C5<br>Extreme | Always depress the emergency<br>stop button whenever the plant is<br>not being operated.<br>Understand the risks associated<br>with inadvertent operation and<br>avoid placing yourself in<br>compromising positions.  | B2<br>Low |
| 4.10 | Lowering / Raising<br>- work platform<br>Moving parts | Crushing<br>Impact<br>Shearing<br>Drawing<br>Severing | Set up<br>Operation<br>Maintenance<br>Troubleshoot | Decals indicating crush hazards<br>affixed to plant.<br>All movements controlled via<br>hold-to-run controls.<br>Remote control available for<br>driving, positioning, tracking<br>and off-tracking of the plant. | C4<br>Extreme | Take appropriate safety measures<br>e.g. barricades to keep people<br>away from plant's operating areas.<br>Ensure all persons are clear of<br>moving components before<br>performing a movement.<br>Maintenance to be carried out by<br>a competent person. | B2<br>Low |
| 4.11 | Entering/exiting the<br>work platform<br>(basket)     | Falls   | Operation  | Use fold down step to help gain access.   | C3<br>High    | Ensure basket is horizontal and if<br>necessary, adjust it by means of<br>the special controls prior to<br>moving from stowed position.  | B1<br>Low |

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|      | Origin  | Consequence                   |                     | implemented   |               | measures   | score     |
|      |   |                               |                     |   |               | Do not move between the basket<br>and a structure outside the<br>machine, machine stability could<br>be jeopardised. Workers and<br>equipment must enter and exit the<br>basket only when it is at ground<br>level.<br>Always face inwards and maintain<br>3-points of contact when entering<br>or exiting the basket. |           |
| 4.12 | Manoeuvring the<br>work platform near<br>fixed structures | Crushing<br>Shearing          | Set up<br>Operation | Work platform fitted with inner<br>handrails to prevent crushing of<br>fingers/hands by fixed<br>structures.                        | C4<br>Extreme | Do not reach out or have body<br>parts outside the work platform's<br>rails while the work platform is<br>moving.<br>Beware of overhead obstructions<br>during plant movement.   | B1<br>Low |
| 4.13 | Operating plant<br>from the work<br>platform              | Crushing<br>Falling<br>Impact | Set up<br>Driving   | Residual risks associated with driving operation given in Operator's Manual.  | A5<br>High    |  | B1<br>Low |
| 4.14 | Unexpected work platform movement.                        | Impact<br>Crushing<br>Falling | Operation           | Harness anchor points fitted to work platform.  | B5<br>Extreme | Wear safety harness when in the<br>work platform.<br>Hold on to grab rails during<br>platform movement.  | B1<br>Low |
| 4.15 | Platform overload   | Crushing<br>Falling<br>Impact | Operation           | Plant limitation displayed on<br>work platform and Operator's<br>Manual.  | B5<br>Extreme | Do not overload the work platform.   | B1<br>Low |
|      |   |                               |                     | Plant fitted with load and<br>moment sensing system.  |               |  |           |
|      |   |                               |                     | Platform can be operated using<br>auxiliary power even if platform<br>is overloaded following contact<br>with an overhead obstacle. |               |  |           |

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|      | Origin  | Consequence                              | -                        | implemented  |               | measures  | score     |
| 4.16 | Faulty/out of<br>calibration load and<br>moment indicator | Crushing<br>Impact<br>Overturning        | Operation                |  | B5<br>Extreme | Perform periodic testing and<br>calibration of load and moment<br>indicator as per manufacturer's<br>recommendations and/or local<br>authority requirements.  | B1<br>Low |
| 4.17 | Falling objects   | Falling objects<br>Impact                | Operation                | Barricade work area under fall zone to create a no-go zone.                | C3<br>High    | Secure items such as tools and<br>consumables which could fall from<br>basket.<br>Lay items flat and evenly across<br>the floor of the basket.  | B2<br>Low |
| 4.18 | Falling from basket                                       | Fall<br>Death                            | Operation                | Drop gate.<br>Lanyard attachment point.                                    | C5<br>Extreme | Check that the sliding bar which<br>protects the opening of the basket<br>is closed and positioned correctly.<br>Safety harness to be worn at all<br>times and secured to the<br>designated hook in the basket. | B2<br>Low |
| 4.19 | Raising boom  | Crush between fixed structure and basket | Operation                | Check surroundings prior to<br>starting and continually<br>throughout job. | C4<br>Extreme | Be aware of potential crush<br>hazards in the direction of<br>movement before moving the<br>work platform.<br>Hard hat may be required if<br>working near overhead<br>obstructions.                             | B2<br>Low |
| 4.20 | Operation of hand pump                                    | Fatigue<br>Muscle strain                 | Emergency                | Electric auxiliary pump may be used for emergency recovery.                | B3<br>Medium  | Use sound ergonomic principles to minimise the risk of injuries.  | A1<br>Low |
| 4.21 | Removal/installation<br>of work platform                  | Impact<br>Musculoskeletal injury         | Maintenance<br>Transport |  | D3<br>High    | 2-person lift is required to lift the<br>work platform in position.<br>Use mechanical aids such as<br>forklift or floor crane to support<br>the basket.   | A1<br>Low |
| 4.22 | Engine exhaust pipe                                       | Burn                                     | Operation                | Exhaust pipe guarded.  | C2<br>Medium  | Do not touch exhaust pipe when hot.   | A1<br>Low |

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|      | Origin  | Consequence                                 | _                                     | implemented   |               | measures   | score     |
| 4.23 | Refuelling  | Explosion<br>Fire<br>Burn<br>Skin condition | Maintenance                           |   | B4<br>High    | <ul> <li>When refuelling:</li> <li>Keep away from ignition sources</li> <li>Do not smoke</li> <li>Avoid spilling fuel over hot<br/>engine</li> <li>Avoid fuel contact with body<br/>parts.</li> </ul>  | A2<br>Low |
| 4.24 | Faulty/out of order,<br>or poorly<br>maintained plant             | Crushing<br>Impact<br>Trauma                | Operation<br>Emergency<br>Maintenance | Operator's manual outlines<br>plant maintenance schedule.<br>Current maintenance<br>inspections up to date as per<br>manufacturers<br>recommendation. | B4<br>High    | Always perform pre-operation<br>inspection before operating the<br>plant.<br>Implement 'tag out' procedure to<br>isolate faulty/out of order plants.<br>Do not use an 'out of order' plant.<br>Record all faults in logbook.<br>Perform plant maintenance as per<br>manufacturer's maintenance<br>schedule.<br>Keep maintenance records / plant<br>logbook up to date. | B1<br>Low |
| 4.25 | Plant modifications<br>after<br>completion of risk<br>assessment. | Crushing<br>Overturning                     | Operation<br>Set up                   |   | C5<br>Extreme | Ensure modifications made to the<br>plant are inspected, assessed, and<br>approved by a competent person.<br>Review hazard analysis and risk<br>assessment after plant<br>modifications.   | B1<br>Low |
| 5    | Transport   | ·   |                                       |   |               |  |           |
| 5.1  | Loading and<br>unloading – driving<br>on                          | Overturning<br>Crushing                     | Transport                             | Use low speed / low engine<br>RPM on slopes / ramps.  | C4<br>Extreme | Follow appropriate loading<br>procedures including using weight<br>rated ramps, have ramps at a low<br>inclination, all person clear from<br>the loading zone and placing the  | B2<br>Low |

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|     |   |                         |                      |   |               | heavy end towards the front of the tray or tow hitch on a trailer.  |           |
| 5.2 | Loading and<br>unloading – lifting<br>on  | Crush<br>Impact         | Transport<br>Lifting | Lifting procedure included in Operator's Manual.  | C5<br>Extreme | Follow appropriate lifting procedure.   | B2<br>Low |
| 5.3 | Failure of lifting<br>slings / chains used<br>for lifting or tying<br>down / tie down<br>straps   | Overturning<br>Crushing | Transport<br>Lifting | Plant is fitted with designated<br>lifting and tied down points.  | C5<br>Extreme | Use tie-down points provided on<br>the plant to secure it for<br>transportation.<br>Ensure lifting slings and tie down<br>straps are in good condition.<br>Ensure lifting slings have a SWL<br>suited to the load.  | B2<br>Low |
| 6   | Plant Failure   |                         |                      |   |               |   |           |
| 6.1 | <ul> <li>Plant failure including: <ul> <li>malfunction of control devices</li> <li>structural failure of machine components</li> <li>failure of lift / tie down points</li> </ul> </li> </ul> | Crushing<br>Impact      | Operation            | <ul> <li>Follow routine maintenance<br/>inspections by qualified person<br/>as per manufacturers<br/>recommendation.</li> <li>Use designated tie down points.</li> <li>Prestart inspection as per<br/>manufacturers<br/>recommendation.</li> <li>Structural calculation supplied<br/>by manufacturer demonstrate<br/>suitability of structural<br/>members for the load<br/>combinations considered.</li> </ul> | B5<br>Extreme | Carry out pre-operational function<br>tests of safety related functions at<br>the start of every shift.<br>Beware of risks associated with<br>inadvertent operation of the<br>machine, avoid compromising<br>machine positions.<br>Familiarise with location of<br>emergency stop buttons.<br>Regularly inspect the MEWP as per<br>maintenance schedule to ensure<br>integrity of structural members. | B2<br>Low |
| 6.2 | Failure of basket to<br>lower.  | Falling                 | Emergency            | Plant fitted with emergency<br>lowering system.<br>Emergency retrieval procedure<br>included in Operator's Manual<br>and on decals on the plant near<br>emergency controls.   | C5<br>Extreme | Beware of the dangers of working<br>at heights.<br>Become familiar with emergency<br>rescue procedures.   | B1<br>Low |

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|     | Origin                               | Consequence  |                                       | implemented  |               | measures   | score     |
| 6.3 | Emergency recovery controls failure  | Health deterioration<br>Death                      | Emergency                             |  | C4<br>Extreme | Regularly test emergency recovery system.  | A1<br>Low |
| 6.4 | Burst hydraulic hose                 | Crushing<br>Overturning<br>Burn<br>Skin irritation | Set up<br>Operation<br>Maintenance    | Counter-balance valves fitted on lift and extension cylinders. | A3<br>Medium  | Check hydraulic hose condition<br>during periodic maintenance.<br>Report and "tag out of service" if<br>identified.  | A2<br>Low |
| 6.5 | Excessive hydraulic<br>oil pressure. | Impact<br>Crushing                                 | Set up<br>Operation                   | Plant fitted with pressure relief valve.                       | C3<br>High    | Check pressure settings during preventative maintenance.   | A1<br>Low |
| 6.6 | Loss of hydraulic<br>pressure        | Crushing<br>Injection                              | Operation<br>Emergency<br>Maintenance | Load-holding valves fitted on all hydraulic cylinders.         | A5<br>High    | Do not operate a faulty plant.<br>Check operation of counterbalance<br>valves as recommended by<br>manufacturer.   | B1<br>Low |
|     |                                      |  |                                       |  |               | Do not disconnect hydraulic hoses,<br>loosen off valves or fittings to<br>attempt the recover a broken-<br>down plant; follow emergency<br>recovery procedures instead.  |           |
|     |                                      |  |                                       |  |               | Always support booms, etc. before disconnecting hoses or valves.   |           |
| 6.7 | Damage to tracks                     | Overturning<br>Crushing<br>Impact                  | Operation                             | Prestart inspection as per<br>manufacturers<br>recommendation. | C3<br>High    | <ul> <li>Avoid driving on the following<br/>terrains or work sites</li> <li>Environments with crushed<br/>stone, iron bars, scrap metal or<br/>similar recycling material</li> <li>Daily/continuous driving on<br/>asphalt or concrete</li> <li>Work sites with sharp objects,<br/>such as broken stones or<br/>concrete waste</li> <li>Work sites with corrosive</li> </ul> | B2<br>Low |
|     |                                      |  |                                       |  |               | substances (fuels, oil, salt or fertilisers)   |           |
| 7   | Electrical                           |  |                                       |  |               |  |           |

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|     | Origin                               | Consequence                    |   | implemented  |               | measures   | score     |
| 7.1 | Damaged power<br>cables, components. | Electrocution<br>Shock<br>Fire | Set up<br>Operation<br>Maintenance<br>Troubleshoot<br>Emergency | RCD fitted to 240V circuit.<br>Fuse protection on electrical<br>circuits.  | C1<br>Low     | Ensure plant and extension cord<br>are electrically tested and tagged<br>as per AS 3760.<br>Ensure power supply and<br>extension lead match plant's<br>voltage and current requirements.<br>Use appropriate means to supply<br>power to the plant. That is, only<br>use extension leads rated to 15<br>amps.<br>Do not operate/use equipment<br>with an expired test tag.<br>Ensure inline RCD is used when<br>charging the batteries.<br>Visually inspect the plant and<br>extension lead before resetting the<br>thermal fuse and RCD. | B1<br>Low |
| 7.2 | Electronic<br>component failure      | Crushing                       | Operation   | Electrical and electronic<br>components comply with<br>design safety categories<br>stipulated in AS 1418.10-2011.<br>Emergency stop buttons<br>available at each control<br>station. | A5<br>High    | Become familiar with location of<br>emergency stop buttons.<br>Perform function tests, including<br>operation of E-Stops at the start of<br>every shift.   | A1<br>Low |
| 7.3 | Earthing fault                       | Electrocution<br>Shock<br>Fire | Set up<br>Operation<br>Maintenance                              | Plant fitted with thermal fuse<br>and residual current device<br>(RCD).  | C4<br>Extreme | Use appropriate means to supply<br>power to the plant. That is, use<br>extension leads with neutral, live<br>and EARTH wire and pin.<br>Ensure the plant's appliance inlet<br>is regularly tested and tagged as<br>per AS 3760.  | A2<br>Low |

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| ID  | Description                           | of Hazard Potential           | Activity                         | Risk control measures already   | Risk          | Supplementary risk control   | Risk         |
|-----|---------------------------------------|-------------------------------|----------------------------------|---|---------------|--|--------------|
|     | Origin                                | Consequence                   |                                  | implemented   |               | measures   | score        |
|     |                                       |                               |                                  |   |               | Do not operate a plant with an expired electrical safety tag.  |              |
|     |                                       |                               |                                  |   |               | Visually inspect the plant and extension lead before turning the power ON.   |              |
| 7.4 | Contact with live<br>conductors under | Shock<br>Electrocution        | Emergency<br>Maintenance         |   | C5<br>Extreme | Do not touch terminals/wires inside the electric cabinet.  | A2<br>Low    |
|     | plant cover                           |                               |                                  |   |               | Keep electric cabinet closed and locked at all times.  |              |
| 7.5 | Radiofrequency<br>remote control      | Medical implant interference. | Set up<br>Operation              | Radiofrequency system uses<br>frequencies in accordance with                                  | B5<br>Extreme | Ensure radiofrequency system is properly maintained.   | A2<br>Low    |
|     | system operation.                     |                               | Maintenance                      | Australian regulatory authorities.  |               | Avoid having remote control in proximity to medical implants such as hearing aids and pacemakers.                                    |              |
| 7.6 | Overhead power<br>lines               | Electrocution                 | Set up<br>Operation<br>Transport | Operator's manual and decals<br>show minimum safe distances<br>when working near power lines. | C5<br>Extreme | Follow local authorities'<br>regulations regarding safe distance<br>from powerlines.   | A3<br>Medium |
|     |                                       |                               | Emergency                        | Decal on work platform states<br>that the plant is not electrically<br>insulated.             |               | Ensure overhead power is<br>switched off or use a spotter if safe<br>distances cannot be maintained.                                 |              |
|     |                                       |                               |                                  |   |               | Be mindful of overhead power<br>lines on roads when transporting<br>the plant on a vehicle.  |              |
|     |                                       |                               |                                  |   |               | Do not move, approach or come in<br>contact with a plant that has<br>contacted power lines until<br>network power has been isolated. |              |
| 7.7 | Lightning                             | Electrocution<br>Shock        | Set up<br>Operation              |   | A5<br>High    | Do not use the plant during a thunderstorm.  | A1<br>Low    |
| 8   | Rail Mode                             |                               |                                  |   |               |  |              |

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| ID  | Description of Hazard Potential   |                       | Activity  | Risk control measures already   | Risk          | Supplementary risk control  | Risk      |
|-----|---|-----------------------|-----------|---|---------------|---|-----------|
|     | Origin  | Consequence           |           | implemented   |               | measures  | score     |
| 8.1 | Travelling on rail line<br>- collision<br>- derailment<br>- runaway plant | Overturning<br>Impact | Operation | <ul> <li>Plant fitted with light beacon to alert pedestrian of incoming vehicle.</li> <li>Horns fitted to plant so operator can alert bystanders on approach.</li> <li>Plant wheels can be earthed to be able to active railway track signals.</li> <li>Maximum travel speed is 10 km/h.</li> <li>MEWP only permitted to travel with slew angle within 38 degrees of the longitudinal axis</li> <li>Plant fitted with antiderailment system.</li> <li>Negative brakes present on one rail axle.</li> <li>Tracking and off-tracking sequence ensures a braked wheel is always in contact with rail head.</li> <li>Plant fitted with rear oscillating axle to minimise the effect of rail superelevation and inclination.</li> <li>Plant fitted with rail line debris removal brushes on leading end</li> </ul> | C5<br>Extreme | Drive to conditions<br>Obtain authorization from network<br>administrator before accessing<br>railway track.<br>Do not drive over debris on rail<br>tracks. | B2<br>Low |
| 8.2 | Excessive rail track superelevation.                                      | Crushing<br>Falling   | Operation | of each wheel.<br>Stability calculations consider<br>superelevation.  | A4<br>High    | Observe plant limitation indicated<br>in the operator's manual and<br>safety decals.  | A1<br>Low |

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| ID  | Description of Hazard Potential                               |                    | Activity   | Risk control measures already   | Risk          | Supplementary risk control   | Risk<br>score |
|-----|---|--------------------|--|---|---------------|--|---------------|
|     | Origin  | Consequence        | _  | implemented   |               | measures   |               |
|     | Defective / damaged<br>rail track.                            |                    |  | Safety devices prevent plant<br>operation with excessive<br>chassis inclination.  |               | Do not operate the plant over damaged rail track.  |               |
| 8.3 | On-railing / offrailing operation.                            | Crushing           | Operation  |   | C3<br>High    | Ensure road surface of area<br>selected for on-railing / off-railing<br>is flat, solid, and sufficiently large<br>to manoeuvre the plant.  | A1<br>Low     |
| 8.4 | Work near multiple,<br>parallel and bi-<br>directional lines. | Crushing<br>Impact | Set up<br>Operation                                | MEWP fitted with lockable slew<br>limiter to allow operation only<br>through 180°.  | C5<br>Extreme | Obtain authorization from network<br>administrator before accessing a<br>rail corridor.<br>Confirm slew lock blocks operation<br>in the correct side of the rail<br>corridor.<br>Only work in the presence of rail<br>traffic if it is absolutely necessary.                                 | B3<br>Medium  |
| 8.5 | Working under<br>railway power lines<br>when in rail mode.    | Electrocution      | Operation  | Plant fitted with redundant<br>height limiter which prevents<br>the work platform from raising<br>above 3.0 metres.<br>System is enabled via key<br>switch (located on ground<br>controls) and indicating light on<br>the platform control panel.                                 | C5<br>Extreme |  | B2<br>Low     |
| 8.6 | Lowering/raising rail gear.                                   | Crushing           | Set up<br>Operation<br>Maintenance<br>Troubleshoot | Crush hazard decals present on<br>various places of the plant.<br>Audible alarm present during<br>rail gear movement.<br>All movements controlled via<br>hold-to-run controls.<br>Remote control available for<br>driving, positioning, tracking<br>and off-tracking of the plant | C4<br>Extreme | Ensure all persons are clear of<br>moving components before<br>performing a movement.<br>Be aware of the presence of<br>objects and persons in the vicinity<br>of the plant.<br>User the remote control for<br>tracking, offtracking and for<br>positioning the plant on the rail<br>tracks. | A2<br>Low     |

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| ID |        |             | Activity | Risk control measures already<br>implemented | Risk | Supplementary risk control<br>measures | Risk<br>score |
|----|--------|-------------|----------|--|------|--|---------------|
|    | Origin | Consequence |          |  |      |  |               |
|    |        |             |          |  |      | Maintenance to be carried out by       |               |
|    |        |             |          |  |      | a competent person.                    |               |

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| RISK MATRIX |   |                     |             |                |             |                    | ACTION  | HEIRACHY OF CONTROLS   |
|-------------|---|---------------------|-------------|----------------|-------------|--------------------|---|--|
|             |   | CONSEQUENCE         |             |                |             |                    | EXTREME – Do not proceed,   | 1. Elimination – controlling the hazard at   |
|             |   | 1.<br>Insignificant | 2.<br>Minor | 3.<br>Moderate | 4.<br>Major | 5.<br>Catastrophic | <ul> <li>risk. Senior management<br/>attention required.</li> <li>HIGH – Review and introduce<br/>additional controls to lower<br/>level of risk. Needs senior<br/>management attention.</li> <li>MEDIUM – Monitor and<br/>maintain supervision and<br/>controls. Specify management<br/>responsibility.</li> <li>substance or ac<br/>hazardous one<br/>3. Isolation – e.g.<br/>isolate the haza<br/>machinery</li> <li>Engineering – e<br/>equipment to co<br/>5. Administration<br/>for safe work p</li> <li>Personal Protect<br/>respirators, ear</li> </ul> | <ul> <li>the source</li> <li>Substitution – e.g. replacing one substance or activity with a less</li> </ul>                          |
| ПКЕЦНООД    | E. Almost Certain<br>Is expected to occur<br>immediately or within a<br>short timeframe | HIGH                | HIGH        | EXTREME        | EXTREME     | EXTREME            |   | <ul> <li>hazardous one</li> <li>3. Isolation – e.g. use of barriers to shield or isolate the hazard, enclosures for noisy</li> </ul> |
|             | D. Likely<br>Will probably occur in most<br>circumstances                               | MEDIUM              | HIGH        | HIGH           | EXTREME     | EXTREME            |   | 4. Engineering – e.g. design and install   |
|             | C. Possible<br>Could happen and has<br>occurred here or elsewhere                       | LOW                 | MEDIUM      | HIGH           | EXTREME     | EXTREME            |   | for safe work practices  |
|             | <b>B. Unlikely</b><br>Unlikely to occur   | LOW                 | LOW         | MEDIUM         | HIGH        | EXTREME            |   | <ol> <li>Personal Protective Equipment – e.g.<br/>respirators, ear plugs, face masks, safety<br/>glasses, safety shoes</li> </ol>    |
|             | A. Rare<br>Not expected to occur  | LOW                 | LOW         | MEDIUM         | HIGH        | HIGH               |   | 5.000 <i>0</i> , 00.007 0.000  |

| CONSEQUENCE DESCRIPTORS |   |   |  |  |  |  |  |  |
|-------------------------|---|---|--|--|--|--|--|--|
| SEVERITY                | SAFETY  | ENVIRONMENT   | BUSINESS   |  |  |  |  |  |
| 5. Catastrophic         | Potential for incident resulting in serious damage and/or fatality                                  | The aspect is legally or contract regulated and has the potential for a disastrous long term impact resulting in prosecution.                     | Loss > \$1M  |  |  |  |  |  |
| 4. Major                | Potential for incident resulting in serious damage and/or permanent disabling illness or injury     | The aspect is legally or contract regulated and has the potential for a serious long term impact resulting in prosecution.                        | Loss of service provision                                |  |  |  |  |  |
| 3. Moderate             | Potential for incident resulting in significant damage and/or temporary disabling illness or injury | Significant environmental aspect with short term impact resulting in improvement notice.  | Loss \$100K - \$1M                                       |  |  |  |  |  |
| 2. Minor                | Potential for incident resulting in moderate damage and/or requiring medical treatment.             | The aspect is legally or contract regulated and has the potential for a moderate reversible short term impact resulting in an improvement notice. | Prolonged reduction in service provision or productivity |  |  |  |  |  |
| 1. Insignificant        | Potential for incident resulting in minor damage and/or injury requiring first aid treatment        | The aspect is not legally or contract regulated and has the potential for a minor negligible impact.  | Loss \$10K - \$100K                                      |  |  |  |  |  |

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