

Maintenance Work Instruction

WIN-RTS-RTM-096

TASK DESCRIPTION

Track Maintenance - Hi-Rail Operation



SAFETY

Before commencing work, complete a TAKE 5 every time to check that no abnormal conditions exist. Complete JHA if prompted by TAKE 5 (Risk ≥ H11).

If an unsafe condition is identified, Tag & Make Safe and inform supervisor immediately.

1. All equipment **shall** be treated as live unless fully isolated.
2. On arrival at site contact the Network Operations Centre to advise them of your location, the type of work you are undertaking and who specifically is in your group.




Risk Assessment (As per Take 5 Risk Assessment)

Take 5

MATERIAL RISKS AND MAJOR HAZARDS

Risk	Description of Risk	Critical Controls
 Trains	There is a high risk of interaction with trains and other rolling stock, track mounted machinery and workgroup personnel.	Follow the Train Controllers instructions and safe working processes, and make sure appropriate levels of track protection are in place. If in doubt, query instructions issued by the Train Controller.
 Critical Risk Stored Energy	Stored energy associated with hydraulic equipment, tyres and open doors / hood.	All hydraulic hoses and equipment shall be thoroughly checked before operating. Assess the risks of injury or harm and implement control measures. Remember that the Hi-Rail Hydraulic system and also the tyres contain stored energy.
 Derailment	Incorrect alignment of switch and frog crossing.	When applicable, visually ensure both switch points and crossing is set for the intended route.
 High Pressure Hose	Hydraulic hoses and fittings pose a stored energy hazard.	All hydraulic hoses and equipment must be thoroughly checked before operating. All hydrocarbon spills must be cleaned up immediately and reported.
 Manual Handling	Sprains and Strains.	Ensure the correct manual handling techniques are adopted for the task and that the correct PPE is worn. Use mechanical aids where practicable.







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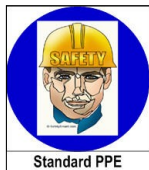
 <p>Pinch Points</p>	<p>Risk of pinch points whilst performing pre-start checks and vehicle components (doors, etc.) whilst on-track.</p>	<p>Keep hands clear of the line of fire. Use correct PPE. Do not place hands or other body parts in a position where they can't be seen.</p>
 <p>Crush</p>	<p>Risk of crush injuries.</p>	<p>Keep hands and other body parts clear of the line of fire, particularly around open hoods and doors. Use correct PPE.</p>
 <p>Hot Surface</p>	<p>Hot rail and heat from the Hi-Rail vehicle.</p>	<p>When touching lengths of rail, ensure gloves are worn. When near running engine or exhaust from vehicle, maintain situational awareness. Hydraulic systems create heat whilst in operation.</p>
 <p>Acoustic</p>	<p>There is a risk of exposure to high noise levels.</p>	<p>Assess the risks of injury or harm and implement control measures.</p>
 <p>Beware of Snakes</p>	<p>Beware of snakes.</p>	<p>Caution when alighting and moving around the Hi-Rail. If a snake is sighted always remain at a safe distance and slowly walk away while continuing to watch the snake. Do not leave doors open when a vehicle is unattended.</p>
 <p>Hot Conditions</p>	<p>Consider the local site conditions and assess the risk of heat stress and dehydration.</p>	<p>Follow the prescribed procedure, assess the risks associated with working in hot conditions and implement control measures plus any rescue or first aid measures.</p>
 <p>Slips & Falls</p>	<p>Consider the local site conditions and assess the risk of slips & falls, especially when mounting and dismounting from the Hi-Rail whilst on-track.</p>	<p>Ensure you have your boots laced to the top, eyes on the path and plan your route. Do not walk on rail. Three (3) points of contact when accessing or egressing the Hi-Rail cab.</p>
 <p>Trip</p>	<p>Ground conditions (ballast, embankments, rail, sleepers, trackside infrastructure).</p>	<p>Ensure you have your boots laced to the top, eyes on the path and plan your route. Do not walk on rail.</p>

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ISOLATIONS, PERMITS AND SPECIAL CONTROLS REQUIRED

Control	Control Application	Reason for Control Requirements
	Legal Compliance.	Follow all rules and procedures to the letter. Always remember, everyone in a work group has legal obligations (Duty of Care) to adhere to.
	Complete a WP 4 form.	To ascertain the appropriate level of Track Protection required including sighting distance, position of safety, lookout protection for adjacent track, schematic representation of the work area, communication. This will be utilised if working around a Hi-Rail vehicle (switch grinder, MFBW, etc) stabled in backtracks.
	Verbal Authority in Conjunction With a TRI-3 Form.	Train Controller will give verbal authority for a Hi-Rail vehicle to access the track and to travel within specified limits of authority on-track. All instructions issued by the Train Controller must be recorded on the TRI-3 Form.
	Signal Sign Off Form	Signal Sign Off Forms must be completed whilst travelling on track in a Hi-Rail vehicle.
	Journey Management Plan (where applicable).	Safety while travelling. Location and estimated arrival time, passenger names and contact person.
	A Take 5 risk assessment must be completed prior to conducting the prestart check and travelling the Hi-Rail on the road or the track.	This requirement has been identified due to previous risk rating.

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- Minimum of a Current Western Australian "C" Class Driver's License (or Australian equivalent)
- Operate and Maintain a 4WD vehicle
- Rail 4WD Access Road Qualified
- BHP Rail Infrastructure Card (Track Access – Lookout)
- Completion of "*Hi-Rail – Driving Operations*" Theory Course
- Hi-Rail Route Knowledge assessment for area of operation (or equivalent Rail Op's)
- CoC (Certificate of Competence) – Hi-Rail practical assessment

TOOLING AND EQUIPMENT REQUIRED

1.	Hi-Rail Vehicle (with BHPBIO VHF Radio)	2.	Hand Held BHPBIO VHF Radio
3.	Vehicle Prestart Checklist	4.	TRI-3 Forms and Pen
5.	WP-4 Forms	6.	Hi-Rail Operators Log Book
7.	Whiteboard Marker	8.	Current BHPBIO Speed Sheet
9.	Track Shorting Cables (x2 minimum)	10.	Track Profile Book

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REFERENCE DOCUMENTATION

Document Reference Number	Document Description	Attached
WIN-PHS-SAF-011	Port and Rail: Light Vehicle Prestart	No
WIN-RTS-RTM-096	Hi-Rail Operation	No
OI 09-42	Amendments to Rail Operating Procedures	No
OI 09-76	Train Running Information (TRI)	No
OI 09-118	Notification of Travelling Hi-Rail Vehicles on the BHPBIO Rail Network	No
OI 10-24	Visual Inspections of Track Shorting Cables	No
OI 10-26	Communications Failure	No
OI 10-67	Hi-Rails Traversing Level Crossings	No
OI 11-21	Protection From Adjacent Tracks	No
OI 11-74	Radio Call Signs	No
OI 12-68	Change of Contact Numbers For All Train Control Boards	No
OI 14-08	Digital Radio Channels	No
OI 14-22	Hi-Rails On-Tracking / Travelling on the BHP Billiton Iron Ore Rail Network	No
OI 14-28	Train Running Information (TRI) Amendment	No
TGI 1102-02	Expectations of people conducting track runs	No
TGI 1204-01	Back Up Communication	No
TGI 1402-01	Hi-Rail DGPS Implementation	No
XXXXXXXXXXXXXXXXXX	BHPBIO Track Maintenance Training Hi-Rail Operators Handbook	No

TASK ACTIVITIES



- Tick off (✓) completed activities where required.
- Capture additional work as per the **Additional Work Identified** section and raise Notifications and enter the M1 number.
- Provide applicable feedback (**WIN Feedback section**) to support WIN improvement.

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Pre-Isolation Tasks Steps

- a. Ensure Hi-Rail vehicle is chocked at the rear wheel (either side) prior to conducting prestart checks. ☐
- b. If the vehicle is not parked in a designated parking area or operator is at risk from other road traffic, demarcate the area prior to conducting the prestart check. ☐

Task Steps






1. Pre-Start Check the Hi-Rail Vehicle

No.	Task Steps	Photo or Diagram	Notes	✓
1.1	Prestart checks shall be completed daily, prior to driving a Hi-Rail vehicle. Hi-Rail equipment shall be checked every day, even when not intending to on-track the Hi-Rail.		Ensure the items in the following sections are inspected and the Hi-Rail section of the prestart checklist is completed. <input type="checkbox"/>	
1.2	Walk around inspection.	  	<ul style="list-style-type: none"> • Wheel and tyre condition (Inc. spares) • General condition • Windscreen, windows and mirrors • Load security • Clean and tidy state <p> All items in any vehicle shall be secured as this is a requirement of the WA Road Traffic Act!</p> <p></p>	

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<div>1.3</div> <div>Hi-Rail equipment inspection.</div>	<div></div>	<div><ul style="list-style-type: none">• Hi-Rail equipment frames and supports• Hydraulic system (leaks, condition)• Mounting bolts• Flexators• Hi-Rail guide wheels condition / wear• Guide wheel bearings• Electrical components• Hi-Rail 2nd form of braking (if fitted)</div> <div><input type="checkbox"/></div>
<div>1.4</div> <div>Check all vehicle fluids / lubricants.</div>	<div></div>	<div><ul style="list-style-type: none">• Engine oil• Transmission fluid (auto)• Brake / clutch fluid• Coolant• Fuel• Hydraulic oil• Steering fluid• Wiper fluid• Check for evidence of leaks</div> <div><input type="checkbox"/></div>

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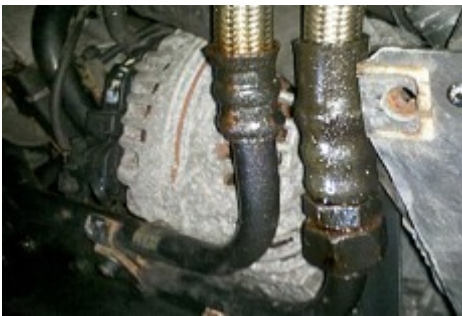
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<p>1.5 Other engine checks.</p>		<ul style="list-style-type: none">• Drive belts tension and condition• Battery condition and security• Battery terminals <input data-bbox="1468 201 1532 268" type="checkbox"/>
<p>1.6 Cab and storage area inspections.</p>	 	<ul style="list-style-type: none">• General condition• Emergency equipment• Jack, brace and jack handle• Safety triangles• Seat belts• Clutch and brake pedal pressure / tension• Park brake• Warning lights and buzzers• VHF Radio check• Horn operational• Wipers serviceable <input data-bbox="1468 604 1532 672" type="checkbox"/>
<p>1.7 Exterior checks once the Hi-Rail is running.</p>	 	<ul style="list-style-type: none">• Head lights / tail lights• Brake lights• Reverse lights and buzzer <input data-bbox="1468 1288 1532 1355" type="checkbox"/>

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1.8 Ensure any defects are repaired (if possible) and reported immediately.



Hi-Rail vehicles are not to be put on-track, under any circumstances, when a hydraulic system or guide wheel defect is identified.

The Hi-Rail can be cleared to be on tracked after inspection from qualified personnel (fitter).



High Pressure Hose

Hydraulic hoses and fittings pose a stored energy hazard

2. On-tracking the Hi-Rail Vehicle

No.	Task Steps	or Diagram	Notes	✓
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- 2.1** Travel Hi-Rail to the on tracking location and park in a position of safety within 50m of the road crossing (see section 2.4).



Ensure hydraulic locking pins are engaged before travelling on the road!

If travelling more than 100km from town (depot), follow the Rail Journey Management Procedure.

A position of safety is defined as a position outside 3m from the nearest rail and clear of any traffic on the access road.



- 2.2** Inspect the road crossing for safety and suitability to on-track the Hi-Rail.

Where practicable, do not use high traffic active crossing locations to on-track



Conduct a walk around inspection of the road crossing to ensure the safety and integrity of the on-tracking location. This should include checking for damage, size and gradient of the road crossing.

There is a high risk of interaction with trains and other rolling stock, track mounted machinery and workgroup personnel.



Ground conditions ballast, embankments, rail, sleepers, trackside infrastructure.



Maintain Continual Vigilance at all times whilst within the Danger Zone!



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2.3 Delegation of responsibilities in Hi-Rail vehicles.



☐

All hi-rail operators **shall** be competent in the appropriate operational and practical requirements relating to the class of hi-rail vehicle to be used. **(Ref RRB R9-1)**

Where practicable a rail worker **shall** be used in a hi-rail vehicle (Rail workers have completed hi-rail theory as a minimum). The hi-rail operator remains responsible for the control of the vehicle and all safeworking activities at all times.

The rail worker can operate the radio and complete the required safeworking documentation and LOA terminal. Where this occurs, the operator hi-rail operator **shall** be responsible for verifying all safeworking information recorded by and transmitted by the rail worker. **(Ref RRB R9-1.5)**

All personnel in the Hi-Rail vehicle **must** monitor the radio and verify, or challenge any instructions that have been received or requested, regardless of their level of training.

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<p>2.4 Where Applicable Delegation of responsibilities when travelling in Hi-Rail convey configuration. (When two or more hi-rail vehicles are travelling on the same track section in the same direction).</p>		<div data-bbox="1476 206 1541 264"><input type="checkbox"/></div> <p>The lead Hi-Rail operator shall inform train control of the intent to on-track and travel in a convoy.</p> <p>The Train Controller shall be advised of the identification number of each individual vehicle, and which hi-rail will be leading.</p> <p>Only the lead Hi-Rail operator is to communicate with train control during the on-tracking procedure (i.e. radio communications with train control, confirm location, complete TR13 form), as if for a single hi-rail vehicle.</p> <p>All Hi-Rails in the convoy must have the DGPS on-track button depressed.</p> <p>Following Hi-Rail vehicles must maintain a safe separation with the vehicle directly in front of them, taking into account speed of travel and conditions.</p> <p>Normal reporting procedures apply to the lead hi-rail vehicle only – following hi-rails must report to the lead hi-rail to confirm track position prior to the lead hi-rail reporting to train control.</p>
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2.5 Confirm DGPS with the "ON TRACK BUTTON".




Turn "ON" the hydraulic pump switch on the Hi-Rail controls and depress the "ON TRACK BUTTON". This will show up on your LOA Terminal, DGPS LOCKED.

This sets the DGPS update rate to 15 second intervals for GSM and 30 second intervals in Satellite coverage areas.

This will also electronically notify the Train Controller of the Hi-Rail's intent to On-Track when depressed within 50m of the designated On-Tracking location.

Confirm with Train Control they can see The GPS / LOCATION

 *This does not replace the need to verbally contact Train Control for permission to On-Track, or the requirement to confirm location with track leads!*

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2.6 Contact the Train Controller to request permission to on-track the Hi-Rail



The operator **shall** give the following information to Control.

- Hi-Rail identification number.
- On-Tracking location (include) between points, stations, signals and track to be run.
- Final destination.
- Reason for travel.
- Any requirement to run at reduced speeds (i.e. ultrasonically testing rail, weed spraying).
- Off tracking ability. If the Hi-rail is a truck or machine, it may require a larger crossing to Off-Track.

The number of people travelling in the Hi-Rail vehicle.



Correct Radio Protocol shall be used.

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2.7 Place Track Shorting cables on track to confirm location.



Confirm the On-Tracking location by the use of Track Shorting Cables. Do not place them before obtaining Train Controllers permission



Adjacent Line protection is required prior to placing track shorting cables / on tracking.

Place the cables 10-15m in the direction of travel, where they can be seen from the cab, so they won't be left behind or run over.

If there is a Fast-Track software fault, you may still On-Track the Hi-Rail by placing Track Shorting cables on the track, as directed by the Train Controller.

Hi-Rail Operators are not required to place Track Shorting Cables if On-Tracking within the confines of an established work area.



There is a high risk of interaction with trains and other rolling stock, track mounted machinery and workgroup personnel.



Ground conditions ballast, embankments, rail, sleepers, trackside infrastructure).

2.8 Confirming your Location



Train Control will confirm your Location.



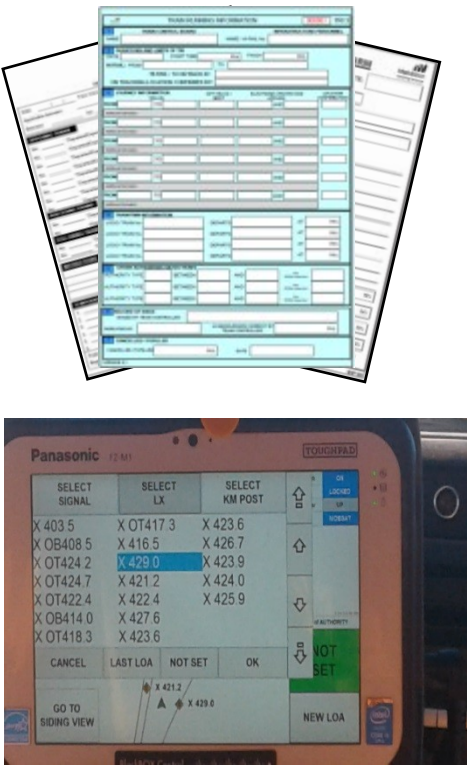
- Track Leads
- GPS

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2.9 Complete TRI-3 Form (or other Authority) and read back exactly as issued by Train Control.

Setting LOA




Ensure all details are recorded and read back exactly as read out by the Train Controller.

If there is any doubt about the details issued, or the Controller speaks too fast, challenge the details and/or request a slower issue.

**Do not guess or assume any information or instruction!*

Set the Limit of Authority (LOA) on the LOA TERMINAL after completing the read back and receiving acknowledgement from Control.

The Train Controller **shall** confirm that the adjacent track is clear and protected before allowing the Hi-Rail to on-track.


 *If adjacent track confirmation is not received, the Hi-Rail Operator must request it before on-tracking.*

2.10 Position the Hi-Rail on the road crossing.



The vehicle should be positioned so that it is as close to parallel with the rails as is practicable.

If travelling on the access roads in wet weather, mud collects on the Hi-Rail guide wheels. This must be removed before on-tracking.

 **DERAILMENT**

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- 2.11** Lower the rear Hi-Rail equipment.



Line up rear Hi-Rail wheels by reversing back to the edge of the crossing. ☐

Lower the rear Hi-Rail wheels first until they are just above the head of the rail.

Check they are correctly aligned with the rail and then lower completely.

Check the rear Hi-Rail wheels are correctly seated.



Never lower the front & rear Hi-Rail equipment simultaneously!

- 2.12** Lower the front Hi-Rail equipment.



Line up front Hi-Rail wheels by continuing to reverse back slowly with small steering movements (so as not to derail rear wheels). ☐

Lower the front Hi-Rail wheels to just above the head of the rail.

Check the alignment and then lower all the way.

Check the front guide wheels are correctly seated.



Never lower the front & rear Hi-Rail equipment simultaneously!

- 2.13** Check the Hi-Rail is tracking correctly.



DERAILMENT

Move a small distance (2-3m) in the forward and reverse directions to confirm the Hi-Rail guide wheels are tracking correctly. ☐

Check that the light on the ON TRACK BUTTON is lit (This confirms that the DGPS system sees ON TRACK and GEAR DOWN)

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DERAILMENT


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- The image shows a Panasonic ToughPad tablet running a surveying software. The main display area features a map with two points marked as 'X 421.2' and 'X 429.0'. A prominent green rectangular overlay on the right side of the screen contains the text 'X 425.9' and '2942m' below it. In the top right corner, there is a small table with four rows and two columns:
- | | |
|-----------|--------|
| SIN TRACK | NO |
| SURF. | SPR |
| Bull Head | 688077 |
| Spur | 688077 |
- Below this table, the text 'LIMIT IN SURVEYING' is visible. At the bottom left of the screen, a button labeled 'GO TO SIGHT VIEW' is present. At the bottom right, another button labeled 'NEW LOG' is visible. The very bottom of the screen has a status bar with the text 'BuckSON Camera' followed by several small icons. The tablet's physical interface includes a blue circular button on the left edge and a blue square button on the right edge.

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If the Hi-Rail Operator and Rail Worker are unsure about which LOA is correct, contact the Train Controller immediately to confirm the LOA.



 **Do not depart the on-tracking location until this step is completed.**

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<p>2.16 LOA /GPS Confirmation</p>		<p>Confirm with Train control that LOA / GPS is set prior to departure. <input type="checkbox"/></p> <div><p><i>Do not depart your on tracking location until Train control has confirmed you LOA / GPS.</i></p></div>
<p>2.17 Depart the on-tracking location.</p>		<p>Ensure the Train Controller is informed as soon as the Hi-Rail has departed the on-tracking location. <input type="checkbox"/></p>

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3. Operating the Hi-Rail Vehicle on Track

No.	Task Steps	Photo or Diagram	Notes	✓
3.1	Remain vigilant for any hazards.	 	 DERAILMENT <p>These hazards include, but are not limited to:</p> <ul style="list-style-type: none"> • Livestock/wildlife • Significant track defects • Obstructions that impede the passage of rolling stock (washouts, etc.) • Newly ballasted areas • Road crossings 	<input type="checkbox"/>
3.2	Communications.	  	<p>All passengers in the Hi-Rail shall monitor the radio at all times when On-Track.</p> <p>BHPBIO radio protocol shall be observed at all times.</p> <p>In the event of a communications failure, Hi-Rail vehicles shall clear track at a designated clearance point (road crossing) within the current limit of authority.</p> <p>Should this not be possible, the Hi-Rail Operator shall immediately place track shorting cables on the track which the Hi-Rail is occupying, so as to prevent clearance of signals onto that track.</p> <p>The operator shall use any means necessary to regain communication as soon as possible (mobile phone, other Train Control board, etc.).</p>	<input type="checkbox"/>

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3.3 Complete the relevant Signal Sign Off forms.

SHIPPED - Rail Signal Sign-Off Form

Signal Sign-Off Form - Yard Section - Journey From _____ To _____

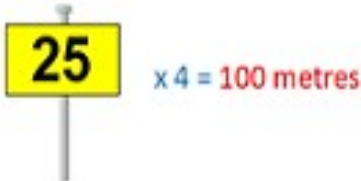



Operator _____ Rail Worker _____ Date _____

The Operator/Rail Worker shall confirm the route by circling the signal number and initialing on each signal is passed

200 To - 204 A/c		Signal		Condition	
KM	Signal	BY	WT	Operator	Rail Worker
200.50	Y24	1	3		
200.51	Y25	1	3		
201.11	Y26	1	3		
201.12	Y27	1	3		
201.50	Y28	3	1		
201.51	Y29	3	1		
201.52	Y30	3	1		
201.53	Y31	3	1		
201.54	Y32	3	1		
201.55	Y33	3	1		
201.56	Y34	3	1		
201.57	Y35	3	1		
201.58	Y36	3	1		
201.59	Y37	3	1		
201.60	Y38	3	1		
201.61	Y39	3	1		
201.62	Y40	3	1		
201.63	Y41	3	1		
201.64	Y42	3	1		
201.65	Y43	3	1		
201.66	Y44	3	1		
201.67	Y45	3	1		
201.68	Y46	3	1		
201.69	Y47	3	1		
201.70	Y48	3	1		
201.71	Y49	3	1		
201.72	Y50	3	1		
201.73	Y51	3	1		
201.74	Y52	3	1		
201.75	Y53	3	1		
201.76	Y54	3	1		
201.77	Y55	3	1		
201.78	Y56	3	1		
201.79	Y57	3	1		
201.80	Y58	3	1		
201.81	Y59	3	1		
201.82	Y60	3	1		
201.83	Y61	3	1		
201.84	Y62	3	1		
201.85	Y63	3	1		
201.86	Y64	3	1		
201.87	Y65	3	1		
201.88	Y66	3	1		
201.89	Y67	3	1		
201.90	Y68	3	1		
201.91	Y69	3	1		
201.92	Y70	3	1		
201.93	Y71	3	1		
201.94	Y72	3	1		
201.95	Y73	3	1		
201.96	Y74	3	1		
201.97	Y75	3	1		
201.98	Y76	3	1		
201.99	Y77	3	1		
202.00	Y78	3	1		
202.01	Y79	3	1		
202.02	Y80	3	1		
202.03	Y81	3	1		
202.04	Y82	3	1		
202.05	Y83	3	1		
202.06	Y84	3	1		
202.07	Y85	3	1		
202.08	Y86	3	1		
202.09	Y87	3	1		
202.10	Y88	3	1		
202.11	Y89	3	1		
202.12	Y90	3	1		
202.13	Y91	3	1		
202.14	Y92	3	1		
202.15	Y93	3	1		
202.16	Y94	3	1		
202.17	Y95	3	1		
202.18	Y96	3	1		
202.19	Y97	3	1		
202.20	Y98	3	1		
202.21	Y99	3	1		
202.22	Y100	3	1		
202.23	Y101	3	1		
202.24	Y102	3	1		
202.25	Y103	3	1		
202.26	Y104	3	1		
202.27	Y105	3	1		
202.28	Y106	3	1		
202.29	Y107	3	1		
202.30	Y108	3	1		
202.31	Y109	3	1		
202.32	Y110	3	1		
202.33	Y111	3	1		
202.34	Y112	3	1		
202.35	Y113	3	1		
202.36	Y114	3	1		
202.37	Y115	3	1		
202.38	Y116	3	1		
202.39	Y117	3	1		
202.40	Y118	3	1		
202.41	Y119	3	1		
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202.58	Y136	3	1		
202.59	Y137	3	1		
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202.63	Y141	3	1		
202.64	Y142	3	1		
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202.66	Y144	3	1		
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202.73	Y151	3	1		
202.74	Y152	3	1		
202.75	Y153	3	1		
202.76	Y154	3	1		
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202.90	Y168	3	1		
202.91	Y169	3	1		
202.92	Y170	3	1		
202.93	Y171	3	1		
202.94	Y172	3	1		
202.95	Y173	3	1		
202.96	Y174	3	1		
202.97	Y175	3	1		
202.98	Y176	3	1		
202.99	Y177	3	1		
203.00	Y178	3	1		
203.01	Y179	3	1		
203.02	Y180	3	1		
203.03	Y181	3	1		
203.04	Y182	3	1		
203.05	Y183	3	1		
203.06	Y184	3	1		
203.07	Y185	3	1		
203.08	Y186	3	1		
203.09	Y187	3	1		
203.10	Y188	3	1		
203.11	Y189	3	1		
203.12	Y190	3	1		
203.13	Y191	3	1		
203.14	Y192	3	1		
203.15	Y193	3	1		
203.16	Y194	3	1		
203.17	Y195	3	1		
203.18	Y196	3	1		
203.19	Y197	3	1		
203.20	Y198	3	1		
203.21	Y199	3	1		
203.22	Y200	3	1		
203.23	Y201	3	1		
203.24	Y202	3	1		
203.25	Y203	3	1		
203.26	Y204	3	1		
203.27	Y205	3	1		
203.28	Y206	3	1		
203.29	Y207	3	1		
203.30	Y208	3	1		
203.31	Y209	3	1		
203.32	Y210	3	1		
203.33	Y211	3	1		
203.34	Y212	3	1		
203.35	Y213	3	1		
203.36	Y214	3	1		
203.37	Y215	3	1		
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203.39	Y217	3	1		
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203.41	Y219	3	1		
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203.46	Y224	3	1		
203.47	Y225	3	1		
203.48	Y226	3	1		
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203.50	Y228	3	1		
203.51	Y229	3	1		
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203.63	Y241	3	1		
203.64	Y242	3	1		
203.65	Y243	3	1		
203.66	Y244	3	1		
203.67	Y245	3	1		
203.68	Y246	3	1		
203.69	Y247	3	1		
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203.73	Y251	3	1		
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203.83	Y261	3	1		
203.84	Y262	3	1		
203.85	Y263	3	1		
203.86	Y264	3	1		
203.87	Y265	3	1		
203.88	Y266	3	1		
203.89	Y267	3	1		
203.90	Y268	3	1		
203.91	Y269	3	1		
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203.93	Y271	3	1		
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203.96	Y274	3	1		
203.97	Y275	3	1		
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204.01	Y279	3	1		
204.02	Y280	3	1		
204.03	Y281	3	1		
204.04	Y282	3	1		
204.05	Y283	3	1		
204.06	Y284	3	1		
204.07	Y285	3	1		
204.08	Y286	3	1		
204.09	Y287	3	1		
204.10	Y288	3	1		
204.11	Y289	3	1		
204.12	Y290	3	1		
204.					

Maintenance Work Instruction

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<p>3.4 Maintain Safe track separation distances.</p>	<p>Calculating Separation Distances</p> <p>FORMULA</p> <p>$SPEED \times 4 = \text{Separation Distance}$</p> 	<p>Use the separation distance calculation of speed x 4. <input type="checkbox"/></p> <p>Where possible, remain a distance of approximately 500m behind any rail traffic.</p>  <p>There is a high risk of interaction with trains and other rolling stock, track mounted machinery and workgroup personnel.</p>
<p>3.5 Remain vigilant for other work group's on-track.</p>	 	<p>Follow the correct procedure for passing through workgroup locations. <input type="checkbox"/></p> <p>When approaching work groups on or near the track, Hi-Rail operators shall contact TPO / worksite supervisor via radio to gain permission to enter the TOA / work site.</p> <p>On arriving at the work group's location, the Hi-Rail Operator shall;</p> <ul style="list-style-type: none"> • Slow down to 20kph. • Sound your horn and await the all clear signal from the work group before proceeding. • Maintain a speed of 20kph until clear of the work group and any lookouts (if posted).

Maintenance Work Instruction

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3.6 Operating a Hi-Rail within the boundaries of a worksite.



When operating in the immediate vicinity of work groups on or near the track, Hi-Rail operators **shall**:

- Follow the directions of the TPO and / or the Worksite Supervisor at all times, except in the case where under the direction of a dogman or spotter
- Maintain visual contact with the designated dogman / spotter at all times. If visual contact is lost at any time, the Hi-Rail shall be brought to a stand and any operations ceased
- Sound the horn prior to start-up of the Hi-Rail or any movement (forward or reverse) of the Hi-Rail as per the On-Track horn signals
- Halt all operations if anyone other than the dogman / spotter enters the exclusion zone

If on-tracking within an existing worksites boundary, the Hi-Rail will operate under the direction of the TPO in regard to all safe working. **A TRI 3 form is not required.**



Horn signals and spotters shall be used at all times when operating Hi-Rails within work areas!



3.7 Traversing turnouts.



Always visually check points and crossing alignment before attempting to traverse turnouts.

When traversing points and crossings, apply slight pressure on the steering wheel to guide Hi-Rail wheels through turnouts.

Don't attempt to steer trucks, etc. through turnouts, as the steering road wheels are not usually in contact with the rail.

Maintenance Work Instruction

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3.8 Hi-Rail Entry to Train Load Out Areas.

The relevant TLO contact numbers are;

Newman TLO

Zone 5 CH 14

PH: 08 9174 5906

OB24 TLO

Zone 5 CH 6

PH: 63217065

OB25 TLO

Zone 5 CH 8

PH: 0417 96 8494

OB18 TLO

Zone 5 CH 16

PH: 08 9158 2795

Jimblebar TLO

Zone 5 CH 5

PH: 08 9158 2981

Yandi 1 TLO

Zone 5 CH 12

PH: 0408382489

Yandi 2 TLO

Zone 5 CH 13

PH: 0467781793

MAC TLO

Zone 5 CH 7

PH: 0457524192

Hi-Rail Entry to Train Load Out Areas (Cont:)

Hi-Rail Operator

On arrival at the Mine, the Hi-Rail Driver shall contact Crusher Control advising of journey and requesting permission to proceed through the Train Load out.

Proceed with caution and bring the Hi-Rail to a stand short of the Ownership Transfer Point.

If there is no response from the Crusher Control the Hi-Rail shall be brought to a stand short of the Ownership Transfer Point (OTP) and remain there until contact is Established.

The Hi-Rail shall not pass the OTP until verbal authority is obtained from the OHP personnel.

The Hi-Rail shall not enter the TLO until the entrance light displays a proceed aspect.

Note Should the entrance light be unable to be cleared to a proceed aspect or no indication is displayed, the Hi-Rail shall not proceed past the OTP until verbal authority has been obtained to pass the entrance light and enter the load-out facility.

Under no circumstances shall any person exit a Hi-Rail vehicle inside the TLO unless all energy sources have been positively isolated and the individual exiting the Hi-rail vehicle has applied personal danger locks and tags to the isolation points in accordance with the WAIO isolation procedure and applicable TLO isolation procedures.

When the Hi-Rail is clear of the TLO area the Hi-Rail operator shall advise the OHP personnel that they are clear.

OHP Personnel

Maintenance Work Instruction

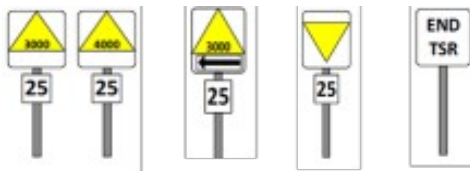
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		<p>Acknowledge the Hi-Rails presence and arrange for the Train Load out to be resourced.</p> <p>OHP personnel shall inspect TLO area for spillage or obstructions and ensure that adequate isolation/security of loading devices are in place before authorising any movements through that area.</p> <p>Clear the Train Load out entry light to a green proceed aspect and provide verbal authorisation for the Hi-rail to proceed through that location.</p> <p>Wait until the Hi-Rail has cleared the TLO location and provided a verbal clearance of doing so.</p> <p>Normalise the TLO location and indicator lights.</p> <p>All verbal communication shall be repeated back to ensure clarity amongst the two parties</p>
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Maintenance Work Instruction

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3.9 Observe all track speed limits including Temporary Speed Restrictions (TSR).



Hi-Rails **shall** observe any posted TSR's and these will be detailed on the Speed Sheet Hi-Rail Operators are required to carry.

Maximum speeds limits:

- **80 k/ph:** M/L tangent
- **70 k/ph:** Yarrie M/L
- **70 k/ph:** M/L curves
- **50 k/ph:** Garden Sth - Hesta
- **50 k/ph:** M287-M300
- **35 k/ph:** Passing stationary rolling stock
- **35 k/ph:** within yard limits
- **20 k/ph:** Passing w/groups
- **20 k/ph:** Traversing turnouts
- **20 k/ph:** Hedland Yard
- **50 k/ph:** Hi-Rail trucks



Cruise control must never be used whilst on-track!



Remember that these are maximum permissible speeds whilst on-track!

**Hi-Rail operators are to maintain safe speeds when operating on-track and may need to travel much slower than the indicated maximum speeds, depending on conditions.*

Maintenance Work Instruction

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3.10 Road crossings.



Give way to all road traffic (Inc. pedestrians) at active and passive road crossings.

Passive Road Crossings:

- Ensure the flashing light on the Hi-Rail is operating
- Ensure the headlights are on
- Sound the horn
- Reduce speed
- Give way to **all** approaching traffic and pedestrians

Active Road Crossings:

Whether boom gates or flashing lights are operating or not and there are vehicles or pedestrians approaching that may collide with the Hi-Rail vehicle:

- Slow down and be prepared to stop the Hi-Rail on the approach side of the road crossing and give way to all approaching traffic and/or pedestrians
- When the road crossing is clear, sound the horn and proceed over the crossing

Maintenance Work Instruction

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3.11 Coming to a stand on-track.



When a Hi-Rail comes to a stand for any reason, such as breakdown, incident or to carry out an inspection, the operator **shall**:

- Call Train Control immediately
- Inform Train Control of the Hi-Rails location, and
- The reason for stopping



These steps shall be taken prior to exiting the Hi-Rail to determine the fault or carry out any other work. Adjacent track protection may be required (see section 3.12).



3.12 Derailment Incident.



In the case of a derailment you shall, if possible, follow these steps;

- Call Train Control immediately
- Protect the Hi-Rail as per an obstruction to track (Place track leads down)
- If possible, have the Hi-Rail examined

If not:

- Move to an agreed location
- Have the Hi-Rail examined



Remember the Hi-Rail must be examined by a qualified person (fitter with Hi-Rail repair qualifications)

Maintenance Work Instruction


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3.13 Adjacent Track Protection



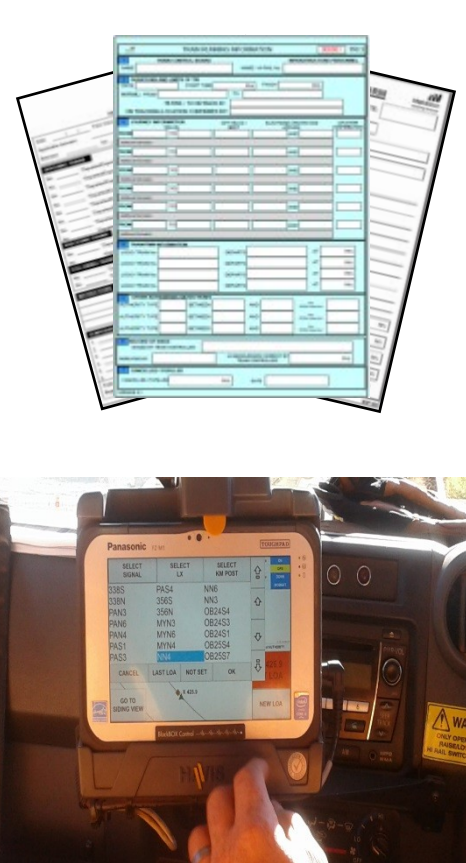
If there is a requirement to exit a hi-rail vehicle on the live side at multiple track locations, prior to exiting the hi-rail vehicle, the hi-rail vehicle operator shall either exit the vehicle under lookout protection (if a lookout is available and there is sufficient sighting distance). If a lookout is not available advise the train controller and receive verbal confirmation that;

- The section of live tracks is clear of rail traffic.
- Signals for live tracs are set to stop
- Electronic blocking has been applied.



All of the above steps shall be in place before exiting the Hi-Rail.

3.14 Receiving further “Journey Information”
Resetting your LOA




Whenever required to update the Journey Information or any other part of the travel authority, the Hi-Rail **shall** be brought to a complete stand before receiving any instructions.

When arriving at or calling on approach to a LOA, come to a stand no closer than 20m from that location where practicable.

LOA Green indicator will turn Yellow With an Audible chime within 500 metres of your LOA. At 200 metres it will turn Red with an Audible chime.

Once at a stand, contact train control. A new LOA will be given. Reset your LOA and confirm with train control.

The Hi-Rail operator and the Rail Worker **shall** both verify the received instructions and initial in the appropriate check box on the TRI 3 form.



The Hi-Rail cannot commence travelling until this is completed!

Maintenance Work Instruction

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3.15 ON TRACK DGPS location transmission and indications.



While the ON TRACK BUTTON is pressed IN the DGPS will continue to transmit your position every 15 seconds for GSM and every 30 seconds in Satellite coverage areas.

While the HI-RAIL GEAR is DOWN the light on the ON TRACK BUTTON will stay lit.



The Hi-Rail hydraulic pump switch must remain "ON" at all times when on track.

3.16 LOA Terminal Failure



In the event the LOA Terminal Fails Prior to on-tracking, the Train controller WILL NOT give permission to on track.

3.17 DGPS Failure








In the event of a Hi-Rail DGPS failure on track, the Hi-Rail Operator **shall** continue to travel on track in accordance with current Hi-Rail procedures, in conjunction with the verification of location (via track shorting cables) until off-track.

4. Off-tracking the Hi-Rail Vehicle

No.	Task Steps	Photo or Diagram	Notes	✓
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Maintenance Work Instruction

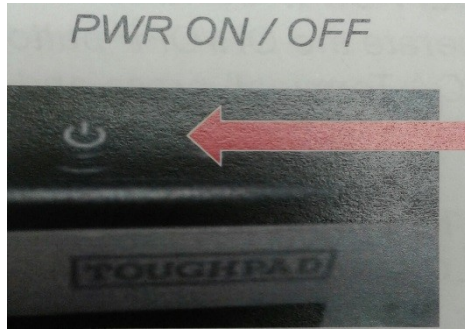
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<p>4.1 Come to a stand at the designated crossing.</p> <p><i>Where practicable, do not use high traffic active crossing locations to Off-Track.</i></p>		<p>Stop on the road crossing with the vehicles rear road wheels at the edge of the road crossing panel.</p> <p>The Train Controller will confirm that the adjacent track is clear and protected before allowing the Hi-Rail to off-track.</p> <p> <i>If confirmation of this is not received, the Hi-Rail Operator must request it before off-tracking!</i></p>
<p>4.2 Raise the Hi-Rail guide wheels.</p>	 <p>Hi-Rail Hydraulic Pump On/Off Switch</p>	<p>Always raise the rear Hi-Rail guide wheels fully first.</p> <p>Turn the road wheels in the direction required to clear track.</p> <p>Raise the front Hi-Rail guide wheels fully.</p> <p>Ensure the Hi-Rail hydraulic pump switch is turned to the "OFF" position.</p> <p> <i>Never raise the front & rear Hi-Rail equipment simultaneously!</i></p>
<p>4.3 Drive slowly clear of the track.</p>		<p>Come to a stand in a position of safety as described in Step 2.1.</p>

Maintenance Work Instruction

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- 4.4 Set DGPS to OFF TRACK position / turn off LOA Terminal.

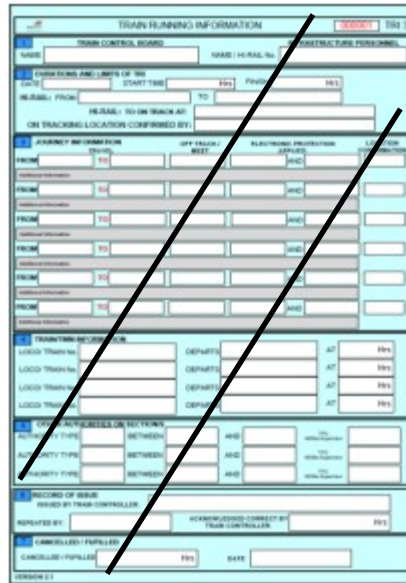


Press the ON TRACK BUTTON to unlatch it OUT. This will indicate to DGPS that you are OFF TRACK.

☐

ON/OFF Button
Located top right side of the LOA Terminal, press and hold for a short time.

- 4.5 Cancel / Fulfil TRI-3 or Train Order and call Train Control.



Inform Train Control of the Hi-Rails clearance from track.

☐

Confirm the Train Controller can see that the Hi-Rail equipment is in the "UP" position on the DGPS.



Do not depart the off-tracking location unless acknowledgement of off-tracking has been received from Train Controller.

- 4.6 Conduct a walk around check of the vehicle.



Check for damage to, or excessive wear on guide wheel flanges, excessive heat on bearing caps and general condition of the vehicle.

☐

Always use the back of the hand to check bearing caps for excessive heat. This is an early indicator of a bearing fault.

Maintenance Work Instruction

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4.7 Conduct roll by inspection of trains if applicable.



Stand in a position of safety to conduct roll by inspections.

Report any defects (flat spots, etc.) to Train Control immediately.

☐

Maintenance Work Instruction

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5. Return to Site

No.	Task Steps	Photo or Diagram	Notes	✓
5.1	Call Journey Management.		 <p>Ensure hydraulic locking pins are engaged before travelling on the road!</p> <p>At the completion of a track run, where the end point is more than 100km from town (depot), the Rail Journey Management Procedure must be adhered to.</p>	<input type="checkbox"/>
5.2	Parking up.		<p>Ensure the Hi-Rail is refuelled and clean before returning to park up area.</p> <p>Reverse park when parking on site.</p> <p>Report any defects to supervision and tag out Hi-Rail (if required).</p>	<input type="checkbox"/>
5.3	Documentation.		<p>Submit all documentation from the day's activities to the appropriate supervisor or area.</p> <p>TRI3 paper work to be attached to track run work order</p> <p>Complete the Hi-Rail Operators Log Book and get it signed off by the mentor or supervisor.</p>	<input type="checkbox"/>

Maintenance Work Instruction**WIN-RTS-RTM-096****De-Isolation, Testing and Commissioning Tasks Steps**

- a. Contact Train Control and cancel TOA (if applicable). ☐
- b. Ensure Journey Management is advised when you depart site (if applicable). ☐

6. Close out

- 6.1** Upload Maintenance Record as an attachment to the work order in SAP, and or raise a notification for any deficiencies to be corrected. ☐

No. Task Description**Initial****HANDOVER**

- a. Contact the area supervisor and inform that the equipment maintenance is complete and ready to be returned to duty. ☐

HOUSEKEEPING

- a. Ensure all tools, equipment and materials are removed from worksite and stored correctly at the end of the job. ☐

ATTACHED PICTURES, DRAWINGS OR DIAGRAMS**ADDITIONAL WORK IDENTIFIED**

Maintainable Item	Details and comments on Work Required	Notification #

WIN FEEDBACK (To support content improvement)

Were the task instructions complete and clear?	Yes / No
Where applicable, was Isolation and Permit information correct and complete?	Yes / No
Were the materials, tools and equipment lists complete?	Yes / No
General Feedback:	

Maintenance Work Instruction**WIN-RTS-RTM-096****SIGN – OFF WORK COMPLETED (Person(s) Who Completed Work)**

Name:	Initial:	Sign:	Date:
Name:	Initial:	Sign:	Date:
Name:	Initial:	Sign:	Date:
Name:	Initial:	Sign:	Date:

SupervisorSchedule Id:
A000245.1[9]

Name:	Initial:	Sign:	Date:
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Record Keeping Responsibilities

All “Controlled Documents” become “uncontrolled” when printed or downloaded (i.e. they cease to be a “Controlled Document”), so you are responsible for ensuring that you use the most recent version.

If the business annotates the printed copy, it then becomes a business record (i.e. a paper “Managed Document”) which needs to be managed in accordance with GLD compliant Record Keeping Practices.

This document is designed to be used for recording your tasks and actions (annotations) and must be retained as a record of the work you performed.

Please contact the IKM Advisor if you have any questions.