



NP22 Hi-Rail Vehicle Operation

NP22 - 1.0 Introduction

Hi-Rail Vehicles are a specific type of Track Vehicle that can travel on the road and the BHPIO rail network. Approved Hi-Rail Vehicles are detailed in the [Rail Traffic Operations] Manual.

The Hi-Rail Vehicle Operator is responsible for the:

- movement of the Hi-Rail Vehicle, and
- integrity and operation of the Hi-Rail Vehicle.

Hi-Rail Vehicles must have the authority of the Rail Controller to on track at the approved rail access points.

NP22 - 2.0 Hi-Rail Vehicle on Tracking



When the Hi-Rail Vehicle on tracks within a Work on Track Authority, the Hi-Rail Vehicle Operator must get permission from the Possession Officer or Track Protection Officer.

Hi-Rail Vehicle Operator

- 1 Prepare the Hi-Rail Vehicle before entering the network in accordance with the [Rail Traffic Operations] Manual.
- 2 Make sure the dGPS is operational by calling the Rail Communication NOC Desk.
- 3 Identify and verify the on tracking location with the Rail Controller using a track shorting device in accordance with the procedure [NP09 - Identification and Verification of Location].
- 4 Confirm with the Rail Controller



Network Procedures

- the name of the Hi-Rail Vehicle Operator
- number of passengers on the Hi-Rail Vehicle
- the starting point and destination of the movement
- if there is a requirement to stop during the movement
- if there are any temporary speed restrictions on the route
- that the dGPS is operational
- request adjacent track protection if required
- any restrictions on the operation of the Hi-Rail Vehicle.

Rail Controller

- 5 Verify the on-track location of the Hi-Rail Vehicle in accordance with the procedure;
[NP09 - Identification and Verification of Location].
- 6 Confirm the details of the Hi-Rail Vehicle Operator and its intended operations, including the dGPS is operational.
- 7 Before authorising the Hi-Rail Vehicle to on track:
 - make sure no rail traffic is approaching the location, and
 - check for other authorities issued on the affected track section(s), and
 - notify all Track Protection Officers holding a Work on Track Authority for the affected track section(s), and
 - make sure the route is set for the intended movement.
- 8 Apply Blocking Facilities and endorse the rail control diagram.
- 9 Issue a *[TR/3]* Form to the Hi-Rail Vehicle Operator.



When there is any doubt or confusion about the exact location of the Hi-Rail Vehicle, the Rail Controller is not to authorise the Hi-Rail Vehicle to on-track until the location can be confirmed.



Network Procedures

Hi-Rail Vehicle Operator

- 10 Confirm that Blocking Facilities has been applied to the affected track and, where necessary, the adjacent track.
- 11 Complete the information provided by the Rail Controller on the *[TR/3]* Form.
- 12 Input Limit of Authority into dGPS terminal.
- 13 Repeat back the information to the Rail Controller.
- 14 When the information has been confirmed correct, and the Limit of Authority is confirmed, complete and sign the *Record of Issue* section on the *[TR/3]* Form.



A *[TR/3]* Form can only be issued if all Track Protection Officers on the affected track section(s) have been informed of the Hi-Rail Vehicle movement.

Rail Controller

- 15 Confirm the repeated information on the *[TR/3]* Form is correct and provide authority for the movement only when the following is confirmed:
 - RTS details the correct Limit of Authority.
 - Blocking Facilities is in place on the required tracks.
 - GPS virtual occupancy is displayed on the RTS in the correct on tracking location.
 - the Hi-Rail Vehicle ID is displayed on the RTS is correct.
 - the Hi-Rail Vehicle Operator has been informed of additional limits of authority, and the RTS has been checked for correctness.



Network Procedures

Hi-Rail Vehicle Operator

- 16 Activate the *ON TRACK BUTTON*.



When on-track, the Hi-Rail Vehicle ON-TRACK BUTTON must always be activated (this will automatically set the dGPS reporting rate to 15-second updates).

- 17 Request confirmation of GPS virtual occupancy on the RTS from the Rail Controller once the Hi-Rail Vehicle equipment has been lowered.

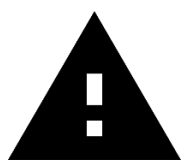


The Hi-Rail Vehicle Operator must not depart until the Rail Controller has confirmed the GPS virtual occupancy.

- 18 When the movements commence, make sure the communication with the Rail Controller continues for the following requirements:
- when the Hi-Rail Vehicle has departed the on-tracking location.
 - to receive additional limits of authority and are updated on the dGPS.
 - to update the “Journey Information” section as supplied by Rail Controller.
 - to report:
 - after entering all station locations
 - after passing through all stations
 - when facing the signal/nodes/location as informed by Rail Controller
 - non-signalled areas as informed by the Rail Controller
 - when changing track or direction
 - when on or off tracking
 - when entering new rail control boundaries



Network Procedures



The Rail Controller must not remove adjacent protection until the Hi-Rail Vehicle GPS location has been confirmed and the Hi-Rail Vehicle Operator has confirmed departure.

NP22 - 3.0 TRI3 Forms

NP22 - 3.1 Alterations to TRI3 Forms

Rail Controller

- 1 Contact the Hi-Rail Vehicle Operator and give them the altered information.
- 2 Endorse the rail control diagram.

Hi-Rail Vehicle Operator

- 3 Write the new information on the existing *[TRI3]* Form and initial the alteration.
- 4 If applicable, select a new Limit of Authority on the dGPS terminal.
- 5 Repeat back altered information to the Rail Controller.

Rail Controller

- 6 Check the repeated *[TRI3]* Form information for correctness against the rail control diagram.
- 7 Make sure the GPS virtual occupancy is displayed on the RTS in the correct on-tracking location.
- 8 If applicable, check RTS for Limit of Authority correctness.
- 9 Make sure the Hi-Rail Vehicle ID displayed on the RTS is correct.
- 10 Acknowledge the repeated *[TRI3]* Form information as correct and give acknowledgement time to the Hi-Rail Vehicle Operator.



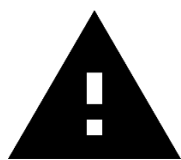
Network Procedures

NP22 - 3.2 Fulfilling TRI3 Forms

Hi-Rail Vehicle Operators must complete all instructions en-route issued on *[TRI3]* Form and confirm with the Rail Controller that the instructions have been completed before fulfilling the *[TRI3]* Form.

Hi-Rail Vehicle Operator

- 1 Before confirming with the Rail Controller that the Hi-Rail Vehicle is in clear of a loop line, you must make sure the Hi-Rail Vehicle:
 - is on the correct running line, and
 - has cleared running signals, and
 - is clear of points and frogs.
- 2 If applicable, select a new Limit of Authority on the dGPS terminal.
- 3 Repeat back altered information to the Rail Controller.



When the Hi-Rail Vehicle Operator fulfils all the instructions of the *[TRI3]* Form on duplicated track sections, they must further confirm that they are on either the East or West mainline.

- 4 When all instructions of the *[TRI3]* Form have been fulfilled, notify the Rail Controller when clear of the track.
- 5 Complete *Fulfilled* section of the *[TRI3]* Form.
- 6 Draw two parallel lines together with the word “FULFILLED” in block letters across the face of the *[TRI3]* Form.

Rail Controller

- 7 Acknowledge that the *[TRI3]* Form has been fulfilled and endorse the rail control diagram.



Network Procedures

- 8 Remove Blocking Facilities once the Hi-Rail Vehicle Operator has confirmed clear of the track and the GPS virtual occupancy has cleared from the RTS.

NP22 - 3.3 Cancelling TR/3 Forms

Hi-Rail Vehicle Operator

- 1 When the journey is not completed within the period of validity of the *[TR/3]* Form, clear the Hi-Rail Vehicle from the track section, if possible.
- 2 Inform the Rail Controller that the journey is not going to be completed.
- 3 Complete the *Cancellation* section of the *[TR/3]* Form.
- 4 Draw two parallel lines together with the words “CANCELLED at (location)(date /hrs)” written across the face of the *[TR/3]* Form
- 5 Request a new *[TR/3]* Form from the Rail Controller if required.

Rail Controller

- 6 Acknowledge that the *[TR/3]* Form has been cancelled.
- 7 Endorse the rail control diagram.
- 8 Remove Blocking Facilities once the Hi-Rail Vehicle Operator has confirmed clear of the track and the GPS virtual occupancy has cleared from the RTS.
- 9 Issue a new *[TR/3]* Form if required.

NP22 - 4.0 Hi-Rail Vehicles Travelling

NP22 - 4.1 Hi-Rail Vehicles Following Other Rail Traffic

Rail Controller

- 1 When a Hi-Rail Vehicle is following other rail vehicles, inform the Rail Traffic Crew of the affected rail vehicle by providing:



Network Procedures

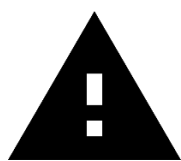
- the Hi-Rail Vehicle identification number, and
- intended destination.

Hi-Rail Vehicle Operator

- 2 Maintain radio communications with the other Rail Traffic Crew.

Rail Traffic Crew

- 3 Maintain radio communications with the Hi-Rail Vehicle Operator and inform any altered operations, reduced speed or stopping.

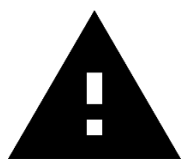


The rail traffic with a Hi-Rail Vehicle following must not be authorised to set back.

NP22 - 5.0 Hi-Rail Vehicles Crossing

Rail Controller

- 1 Inform the Rail Traffic Crew of the affected rail vehicle by providing:
 - the Hi-Rail Vehicle identification number, and
 - the crossing or passing location.



The Rail Controller must not remove the Blocking Facilities until informed by the Rail Traffic Crew that the opposing Hi-Rail Vehicle has arrived at the crossing location.

Rail Traffic Crew

- 2 Acknowledge receipt of the information.
- 3 Visually confirm the Hi-Rail Vehicle identification number against the number given by the Rail Controller.
- 4 Inform the Rail Controller that the Hi-Rail Vehicle has arrived at the crossing location.



Network Procedures

Hi-Rail Vehicle Operator

- 5 Inform the Rail Controller that the Hi-Rail Vehicle has arrived at the crossing location.



The Rail Traffic Crew must not move until the crossing with the Hi-Rail Vehicle has occurred or has been altered. The Rail Controller is to be challenged if a proceed authority is given before the scheduled crossing.

NP22 - 5.1 Alterations to Hi-Rail Vehicles Crossing

This section does not apply to rail traffic which is:

- travelling in the same or opposing direction on duplicated tracks, or
- not crossing, or
- diverging onto a track being travelled by Hi-Rail Vehicles or vice versa.

Rail Controller

- 1 Inform the Rail Traffic Crew and Hi-Rail Vehicle Operator of the new crossing or passing location.
- 2 Do not allow rail traffic to proceed if the crossing is altered until the rail traffic being restricted has received acknowledgement of the new crossing location.
- 3 Notify the Rail Traffic Crew of the new crossing or passing location before authorising the alteration to the Hi-Rail Vehicle journey.

NP22 - 5.2 Change of Track

When a Hi-Rail Vehicle is required to change track by travelling through a crossover or set of points, the Rail Controller must be informed.

Hi-Rail Vehicle Operator

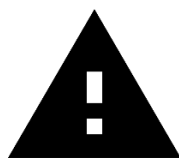


Network Procedures

- 1 Inform the Rail Controller of the:
 - Hi-Rail Vehicle identification number, and
 - change of track has taken place, and
 - Hi-Rail Vehicle is now on track travelling on (e.g., East track or West track).
- 2 Request confirmation of GPS virtual occupancy on the RTS from the Rail Controller.

Rail Controller

- 3 Make sure the Hi-Rail Vehicle identification number displayed on the RTS is correct.
- 4 Cross-check the Hi-Rail Vehicle GPS virtual occupancy displayed on the RTS against the reported location.



The Hi-Rail Vehicle Operator must not continue until the Rail Controller has confirmed the Hi-Rail Vehicle GPS virtual occupancy.

NP22 - 5.3 Hi-Rail Vehicle Location in Doubt

Rail Controller

- 1 In the event there is doubt about the location of a Hi-Rail Vehicle in the network, inform the Hi-Rail Vehicle Operator to bring the Hi-Rail Vehicle to a stand
- 2 Make sure the Hi-Rail Vehicle identification number displayed on the RTS is correct.
- 3 Cross check the Hi-Rail Vehicle GPS virtual occupancy displayed on the RTS against the reported location.



Network Procedures



The Hi-Rail Vehicle Operator must not continue until the Rail Controller has confirmed the Hi-Rail Vehicle GPS virtual occupancy.

NP22 - 5.4 Hi-Rail Vehicle Confirming Arrival

Hi-Rail Vehicle Operator

- 1 Before confirming with the Rail Controller that the Hi-Rail Vehicle is in clear of a reporting location, make sure that the Hi-Rail Vehicle:
 - is on the correct running line, and
 - has cleared running signals, and
 - is clear of points.

NP22 - 5.5 Travelling Through Rail Control Boundaries

Rail Controller

- 1 When travelling from one Rail Control Boundary to another at locations with duplicated tracks, inform the receiving Rail Controller the:
 - Hi-Rail Vehicle identification number, and
 - destination of the Hi-Rail Vehicle, and
 - track the Hi-Rail Vehicle is travelling on, and
 - number of passengers travelling in the Hi-Rail Vehicle.

Receiving Rail Controller

- 2 Make sure the Hi-Rail Vehicle information received from the Rail Controller includes the:
 - Hi-Rail Vehicle identification number, and
 - destination of the Hi-Rail Vehicle, and
 - track the Hi-Rail Vehicle is travelling on, and
 - number of passengers travelling in the Hi-Rail Vehicle.
- 3 Check RTS for Blocking Facilities arrangements made by the Rail Controller.
- 4 Make sure the Hi-Rail Vehicle identification number displayed on the RTS is correct.



Network Procedures

- 5 Cross-check the GPS virtual occupancy displayed location of the Hi-Rail Vehicle on the RTS against the reported location.

Hi-Rail Vehicle Operator

- 6 Inform the Receiving Rail Controller of the:
 - Hi-Rail Vehicle identification number, and
 - destination of the Hi-Rail Vehicle, and
 - track the Hi-Rail Vehicle is travelling on, and
 - number of passengers travelling in the Hi-Rail Vehicle.
- 7 Request confirmation of GPS virtual occupancy on the RTS from the Receiving Rail Controller.

NP22 - 5.6 Arrival at Limit of Authority or Required to Stop

Rail Controller

- 1 When a Hi-Rail Vehicle arrives at the authorised limit of authority or is required to come to a stand while on a section of track, make sure the Hi-Rail Vehicle is at least 20 metres from an insulated rail joint or signal location.

NP22 - 5.7 Exceeding the Limit of Authority

Rail Controller

- 1 When a Hi-Rail Vehicle exceeds its authorised Limit, it must be managed in accordance with the rule;
[SS03 - Overrun a Limit of Authority]



NP22 - 6.0 Exiting a Worksite

Hi-Rail Vehicle Operator

- 1 When the Hi-Rail Vehicle is required to exit a worksite, stop the Hi-Rail Vehicle before leaving the established worksite boundary.
- 2 Inform the Rail Controller of the:
 - Hi-Rail Vehicle identification number, and
 - destination of the Hi-Rail Vehicle, and
 - track the Hi-Rail Vehicle is travelling on, and
 - number of passengers travelling in the Hi-Rail Vehicle.
- 3 Request confirmation of GPS virtual occupancy on the RTS from the Rail controller.
- 4 Inform the Track Protection Officer on departing the worksite.

Rail Controller

- 5 Make sure the Hi-Rail Vehicle identification number displayed on the RTS is correct.
- 6 Cross-check the Hi-Rail Vehicle GPS virtual occupancy displayed on the RTS against the reported location.



The Hi-Rail Vehicle Operator must not depart until the dGPS virtual occupancy, and the RTS Limit of Authority has been confirmed, and the Rail Controller has issued a [TR/3] Form.



Network Procedures

NP22 - 7.0 Hi-Rail Vehicle Off Tracking

Hi-Rail Vehicle Operator

- 1 Make sure the Hi-Rail Vehicle is clear of the running track before the expected arrival time of any rail traffic informed by the Rail Controller.
- 2 Make sure the 'ON TRACK BUTTON' is deactivated.

Rail Controller

- 3 If off tracking is required to go around a track obstruction, inform the Hi-Rail Vehicle Operator where the Hi-Rail Vehicle is to:
 - Clear the track.
 - Re-enter the track.
- 4 Once the Hi-Rail Vehicle Operator has confirmed clear of the track, check that the GPS virtual occupancy has cleared from the RTS.

Rail Controller

- 5 If the Hi-Rail Vehicle Operator applies to re-enter the track:
 - When on-tracking at the same location, update the original [TR/3] Form with additional information, or
 - When on-tracking at the new location, issue a new [TR/3] Form.



When off-tracking at locations with adjacent tracks, the Rail Controller must apply adjacent track protection. The Hi-Rail Vehicle Operator must confirm that adjacent track protection has been applied.



Network Procedures

NP22 - 8.0 GPS Failure

A GPS failure state includes the following:

- the Rail Controller is unable to receive accurate and current GPS data for the Hi-Rail Vehicle
- the Hi-Rail Vehicle GPS hardware fails on track
- complete failure of the RTS
- GPS location data is accurate and current but displays the Hi-Rail Vehicle in the incorrect location.

In the event of GPS failure, track shorting cables must be used in the following situations:

- change of track/direction (e.g., East to West track).
- change of Rail Control Boundaries (verification of location must occur with the receiving Rail Controller) and
- when the location of the Hi-Rail Vehicle is not confirmed (as requested by the Rail Controller).

Rail Controller

- 1 If the period of validity has expired and the Hi-Rail Vehicle Operator has not reported, make every effort to contact the Hi-Rail Vehicle Operator.
- 2 If the Hi-Rail Vehicle Operator is contacted and reports that the Hi-Rail Vehicle is clear of the track, remove the Blocking Facilities.
- 3 If the Hi-Rail Vehicle Operator cannot be contacted:
 - make all possible efforts to locate the Hi-Rail Vehicle Operator, and
 - do not allow rail traffic to enter the track section until the Hi-Rail Vehicle Operator is located.

NP22 - 9.0 Hi-Rail Vehicle Travelling Over Level Crossings

Hi-Rail Vehicle Operator

- 1 When the Hi-Rail Vehicle is travelling over level crossings:
 - make sure the flashing light on the Hi-Rail Vehicle is operating
 - make sure the headlight is on full
 - sound the horn



Network Procedures

- reduce speed
- give way to all approaching road traffic and pedestrians
- not proceed onto the crossing until it is safe.

NP22 - 10.0 Derailed or Damaged Hi-Rail Vehicle

When a Hi-Rail Vehicle has been derailed or damaged:

NP22 - 10.1 Hi-Rail Vehicle Derailed

Hi-Rail Vehicle Operator

- 1 Protect the derailed Hi-Rail Vehicle and manage as an obstruction in accordance with the rule *[RT02 - Protecting Rail Traffic]*.
- 2 Inform the Rail Controller.
- 3 Make sure a Competent Worker examines the Hi-Rail Vehicle before allowing it back into service.

Rail Controller

- 4 If the Hi-Rail Vehicle is derailed, manage in accordance with the rule *[RT02 - Protecting Rail Traffic]*
- 5 Endorse the rail control diagram.
- 6 Commence the recovery process for the Hi-Rail Vehicle, if necessary.



No recovery must commence until the investigation team has released the site.

NP22 - 10.2 Hi-Rail Vehicle Damaged

Hi-Rail Vehicle Operator

- 1 If the Hi-Rail Vehicle is damaged, assess the damage and inform the Rail Controller of the findings.
- 2 If the Hi-Rail Vehicle can continue, proceed at restricted speed to a nominated location to stable.



Network Procedures

- 3 Plan for the Hi-Rail Vehicle to be examined at the nominated location.

Rail Controller

- 4 If the Hi-Rail Vehicle is damaged and unable to move, arrange assistance in accordance with the rule *[RT06 - Disabled Rail Traffic]*.
- 5 If the Hi-Rail Vehicle can move, arrange to move to a location where it can be examined.
- 6 Authorise movement at restricted speed if the Hi-Rail Vehicle is to proceed.
- 7 Endorse the rail control diagram.

NP22 - 11.0 Related Documents

Rule *[RT02 – Protecting Rail Traffic]*

Rule *[RT06 – Disabled Rail Traffic]*

Rule *[SS03 – Overrun of Limit of Authority]*

Procedure *[NP09 – Identification and Verification of Location]*

Form *[TRI3 – Train Running Information]*

Manual *[Rail Traffic Operations]*

NP22 - 12.0 Effective Date

15 August 2022