RIVERSIDE MINIATURE RAILWAY

TRAVERSER

OPERATIONS POLICY

RIVERSIDE MINIATURE RAILWAY

TRAVERSER OPERATIONS POLICY

CONTENTS

REVISION RECORD SHEET

Revision	Date	Description of Revision	Prepared by	Approved by RMR
1.0	August 2020	Initial copy issued for review	D. Stapleton	RMR Committee
2.0	September 2020	Updated as requested by the RMR Committee	D. Stapleton	RMR Committee

1 INTRODUCTION

1.1 FUNCTION

To safely and efficiently load and unload individual carriages from their carriage store, on two levels, and to the adjacent operational rail tracks. It can also be used to load and unload to the workshop container (at an elevated level only).

The carriage store and workshop are approached from the running lines through a single blade point.

This point can be positioned to align with the left hand (1A) or right hand (1B) carriage store lines, as shown.

The traverser is then used to transfer the rolling stock between the approach lines and the carriage store (at either the lower or elevated levels), as shown below.

The workshop is accessed using the traverser positioned at the workshop door at the elevated level, as shown below.

1.2 DESIGN PRINCIPLES

The carriage traverser consists of a lorry tail lift system (Dhollandia) which is mounted on a bespoke welded framework. This traverses across the face of the carriage store on castor wheels running on V section rails. This traversing system caters for 3 ground level and 3 elevated storage positions in the container in both loading or unloaded operational environments.

The traverser is designed to ensure carriages are restrained within the lift platform whilst in lifting/lowering or traversing movements at ground level. The platform uses two hinged link rails to retain the carriage. These are also used to interconnect the platform rail to the carriage store rails and the operational rail track.

Positioning of the traverser relative to the carriage and rail track rails is achieved using a lock-bolt system, ensuring good alignment between all rails.

2 SAFE WORKING PRACTICES

During lifting, lowering and traverser movements on this equipment, safety is of major importance.

2.1 GENERAL SAFETY REQUIREMENTS

Whilst the traverser is in use operators should ensure that others will not be endangered by the movements of the equipment.

On lifting, lowering or traversing, the person in charge should call ‘all clear’ before the operation starts and must monitor a safe situation during the relevant movement.

Carriages retrieved onto the traverser at height (Level 1) must never be subjected to traversal movement. The equipment must be lowered to ground level and then be subjected to the traversal movement.

2.2 SPECIFIC SAFETY ISSUES

The person-in-charge should ensure that the operations cable is correctly routed around the container and traverser frame and that there are no possibilities of the cable hanging so low that it could be damaged by traverser movement at ground level by the traverser rollers.

The traverser locking mechanism must always be used before any movements or parking are undertaken. These positions are Park, Rail 1, Rail 2, Rail 3 and Workshop.

The traverser must only be pushed into position, never pulled. The operator must shout ‘all clear’ before he starts pushing the equipment.

Lowering of the platform must be undertaken by 2 people; one to lift the release bolt and hold it there whilst the other person lowers the counter-balanced platform.

When lifting or lowering the platform, with or without a carriage, the hinged rail links must be moved to their upright ‘locked’ position.

When retrieving carriages from the container or from the operating track back onto the platform, the operator must shout ‘all clear’.

All operators to be aware of elements of the equipment, tracks and rails at ground level. In particular, traverser rollers and frame, ground V rails and operating track sleepers.

On completion of activities on operating days the traverser platform will be returned to its vertical storage condition. Operators are to take care that the detachable hinged link rail has been removed and stored in the carriage container only. Also when lifting the counter-balanced platform to its stored condition care should be taken to ensure the fixed hinged link rail (carriage end) does not strike the traverser upright members and that it rests in the retaining bracket provided.

3 OPERATING PROCEDURE (GROUND LEVEL)

1 Unlock the traverser in the parked position to allow free movement (using the yellow handle). Move it away from container sufficiently to allow opening of the Left Hand (LH) carriage door

2 Open the LH carriage door to clear traverser and move traverser into desired position for first loading/unloading position

3 Lock traverser position (using the yellow handle) allowing the drop bolt to locate in top floor retention rail

4 Check the battery condition on the regulators. If fully charged, connect the power and control cables across traverser frame

5 Engage both connectors to underside of power pack mounted on traverser

6 Using hand held controller lower the platform at least 10cm and lift release bolt at end of platform

7 Using the hand controller, carefully lower the platform from its vertically stored position to a horizontal working position

Note: The platform is counterbalanced for safety

8 Fit the detachable hinged link rail at the incoming rail end (stored in carriage container)

Refer to: Hinged Link Rail Procedure for details

9 Lift and drop hinged link rail at the carriage end of the traverser platform onto the selected stored carriage rail

10 Slowly pull the carriage out and across the platform and onto the incoming rail track.

Note: Loading of carriages back into carriage store is a reverse of the above procedure

Note: If traversal movement is required at ground level to align to the outgoing rail track, both the hinged rail links MUST BE LOCKED VERTICALLY FOR THE DURATION OF THE TRAVERSAL MOVEMENT. When finally aligned to the outgoing rail track, the outgoing hinged link rail can be lowered and the carriage moved on to the outgoing operational rail track

CARRIAGE TO TRACKBED 1A ROUTE VIA TRAVERSER

LOCKING MECHANISM

RELEASE BOLT FOR PLATFORM
(RAISE AND HOLD BOLT VERTICALLY WHILST LOWERING PLATFORM)

ALIGNING THE DETACHABLE HINGED LINK RAIL

CARRIAGE STORE TO PLATFORM ROUTE
VIA THE ATTACHED HINGED LINK RAIL

CARRIAGE HINGED LINK RAIL CONNECTION TO STORE RAIL
UTILISING LOCATION LUGS

CARRIAGE RETAINED BETWEEN LOCKED HINGED LINK RAIL PRIOR TO ANY GROUND LEVEL TRAVERSE MOVEMENT

POWER AND CONTROL CABLE ARRANGEMENTS FROM CARRIAGE STORE ACROSS TRAVERSER FRAME AND INTO POWER PACK

4 OPERATING PROCEDURE (ELEVATED)

1 Raise both hinged link rails and lock them vertically when at ground level

2 Lift platform to maximum height using hand held controller (default setting)

3 Lift and lower hinged link rail at carriage end of platform (refer to the hinged link rail procedure for details)

4 Slowly pull the carriage onto platform and park just in front of outgoing raised hinged link rail at the other end. Disconnect any connected carriages when accessibility allows

5 Raise the carriage end hinged link rail vertically to trap carriage on platform

6 Stand clear and lower platform to ground level using hand controller

7 Drop outgoing track end hinged link rail and engage lugs between the outgoing rail track. Move carriage off platform and onto outgoing operational track

Note: If traversal movement is required at ground level to align to the outgoing rail track, both the hinged rail links MUST BE LOCKED VERTICALLY FOR THE DURATION OF THE TRAVERSAL MOVEMENT. When finally aligned to the outgoing rail track, the outgoing hinged link rail can be lowered and the carriage moved on to the outgoing operational rail track

See below for further explanations for the fitting and operating of the hinged link rails.

5 OPERATING PROCEDURE FOR HINGED LINK RAILS

This procedure applies to ground level and elevated level operations

1. When alignment of the platform rail to the carriage has been achieved, the carriage hinged link rail (already attached) needs to be connected to the selected carriage store rail. To do this, lift it vertically until the rail can be pivoted angularly downwards towards the connecting rail

2. Locate the hinged link rail into the stored carriage rail with the inner location lugs. Ensure the rails are level with the hinged rail and that it is siting firmly on the protruding carriage cross-member

3. To fit the outgoing hinged link rail, locate the open slot of the captive inner location plates onto the shoulder bolts in the platform rail. When fully engaged, fit the captive thumbscrews through the platform rail clearance holes and screw into the inner location plates until finger tight

4. The procedure for both hinged link rails for locking into a vertical locking mode is identical. Lift rail end sufficiently to clear the connecting rail and pull rail away from pivot. When resistance is felt, lift the rail to a vertical position and then allow the rail to drop through the ‘pear drop slot’ until it bottoms

5. Store the detachable hinged rail link in the carriage for future operations.

6 TRAVERSER PROCEDURE FOR WORKSHOP MAINTENANCE

There will be an occasional requirement to load and unload carriages or engines into the adjacent workshop container to allow maintenance work to be undertaken.

The workbench rail for this is situated in the workshop container (adjacent to the carriage container). The maintenance rail track is approximately the same height as the elevated storage height

1. To gain access to the workshop container it is necessary to first close the adjacent carriage RH door

2. The workshop LH door is then fully opened until it abuts the closed carriage RH door.

3. When the doors are positioned as above, the traverser is now ready to be moved to the workshop bench rail position

4. At this point, the engine/carriage should have been rolled onto the platform with both hinged link rails locked vertically as defined in the above procedures

5. The traverser is then moved to the workshop rail position and locked in place with the locking system

6. When in position, the traverser lift should be activated until it reaches the required level. When elevated, the carriage end hinged link rail must be lowered with the rail end lugs locating inside the workbench rail

7. The engine/carriage can then be pulled off the traverser platform rail and onto the workbench rail

8. Unloading of the engine/carriage is the reverse of the above procedure and in accordance with loading/unloading procedures previously stated

9. The traverser is now moved beyond the extents of the open LH. workshop door. The workshop door is then closed and the traverser moved and locked to its next position