

OPERATIONAL MANAGEMENT OF BEAVER TAMPER ACCESS ARRANGEMENTS AND PROTECTION OF THE INFRASTRUCTURE

PE350

1. PURPOSE

Beaver tampers are delivered to site by road transport then placed onto the track either via the use of the machine lifting cylinders or machine lifting cylinders and turntable. Alternatively the machine can be placed on track via Rail Ramps from the rear or the front of the trailer.

Arrangements for on/off tracking are covered in the following industry and company standards:

- NR/L2/RMVP/0200 Network Rail Plant Manual modules P301 and P507 both Mandatory documents.
- PE334 VolkerRail Procedure 'Road Rail Access Points' Mandatory
- COP0007 M&EE Code of Practice for On, Off and Cross Tracking of On Track Plant

Arrangements, safe systems of work, planning for use, site visits and safe access are contained within the following industry and company standards:

- NR/L2/OHS/019 Safety of People at Work on or Near the Line Mandatory
- NR/L2/RMVP/0200 Network Rail Plant Manual modules P501 'Systems of Work, P502 'Planning for Use' P503 'Planning for Lifting Operations' P505 'Safe Working with Plant' P507 On Track Plant and P519 'Planning for the Use of OTP all of which are Mandatory.
- SAF23M001 VolkerRail procedure 'Management of Site Deliveries and Collections' Mandatory

It is intended that this document sets out Operational Management arrangements which will guide VolkerRail delivery units. This will include the efficient consideration, preparation and execution of the delivery of a Beaver road transportable tamper. It will also further guide management of related unforeseen events.

2. SCOPE

These arrangements apply to all occasions and circumstances where Beaver Tampers are required to undertake the processes of On / Off tracking.

They also apply to the public highway or private road delivery location. This will include all areas within boundary fences deemed to be on the line-side and all approaches to and from On /Off tracking points.

3. REFERENCES (INPUTS) / RELATED DOCUMENTS

Reference Number	Title
GE/RT8000	Rule Book
GS6	Avoidance of danger from Overhead Electrical Lines
HSG47	Avoiding danger from Underground Services
M&EE COP 0007	Code of Practice for On /Off Tracking of Road-Rail Vehicles (RRV)
NR/L3/TRK/3241	Network Rail Specification Marking of track for tamping machines
NR/L2/RMVP/0200	Network Rail Plant Manual
NR/ L2/RMVP/0200/P301	Network Rail Plant Manual Module for Road rail access points
NR/ L2/RMVP/0200/P501	Network Rail Plant Manual Module for Systems of work
NR/ L2/RMVP/0200/P502	Network Rail Plant Manual Module for Planning for use
NR/ L2/RMVP/0200/P505	Network Rail Plant Manual Module for Safe working with plant
NR/ L2/RMVP/0200/P507	Network Rail Plant Manual Module for On track plant
RIS-1530-PLT	Rail Industry Standard - Engineering Acceptance of Possession-only Rail Vehicles and Associated Equipment
RIS-1700-PLT	Rail Industry Standard - for the safe use of Plant for Infrastructure Work

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4. DEFINITIONS

Definition	Meaning
Bridging Material	Material such as steel plates (road plates), which cannot constitute part of an actual On /Off and cross-tracking point but may be used to protect the infrastructure.
Machine Access	The machine route of travel from highway or private road delivery location(s) to the On / Off tracking point(s).
On/Off tracking point	Any point where the process occurs of transferring the Beaver tamper to or from the low loader onto the infrastructure.
Demountable Machine formerly known as Rail Mounted Maintenance Machine (RMMM)	A demountable machine is a vehicle that can travel on rail under its own power system. Such vehicles are not allowed to operate, work or travel outside possessions.

5. PROCESS

5.1 Management Arrangements

5.1.1 Machine Suitability Assessment

When a hire request comes in for the Beaver Tamper the Operations Manager POM or delivery supervisor POM are to liaise with the client to find out the following:

- The exact site location, and contact details in order to arrange a time and date for a site visit.
- Machine type required, be it plain line or S&C Beaver.
- Track details where the machine will travel and work, such as but not limited to the maximum gradient on site, maximum cant on site and minimum curve radius on site.

5.1.2 Machine Access Assessment

The planning for the delivery of a Beaver road transportable tamper shall be carried out well in advance of the date that tamping operations are scheduled to take place. This machine access planning is an inherent function of the planning process. It is essential for the enabling of appropriate preparation for immediate works and also for future works where established access arrangements may be required.

The person carrying out the site visit should ideally be the person who will be allocated to the delivery shift.

Due to the huge variation in potential Machine Access, from rural dirt-track to industrial estate and inner city high-street, it is not realistic to attempt to cover every possible contingency. It is essential however, that during the pre-works daylight site visit, the identification of all route(s) to and from the delivery area and the line-side shall be determined with consideration of the following as a minimum:

- Ground bearing capacity, relative to the type, size and weight of machine(s) to be used and the adequacy of under-bridges, culverts etc. along the route to support axle loads.
- Ground surface stability, specifically the susceptibility to surface degradation or penetration in terms of proposed frequency of use. Particular attention needs to be given to the infrastructure structural and component damage on the approach to the track.
- Any site lateral & horizontal proximity structures and hazards which could affect the safe machine access to the infrastructure. Attention needs to be given to the minimum gauge requirement for the passage of machine carried materials, accessories and attachments.

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- The appropriate traffic management controls which may be required to allow safe access by the machine to and from the infrastructure. Attention needs to be given to the interface with members of the public and need for pedestrian and personnel exclusion zones.
- Locations, quantities and the potential layout of other site associated facilities including parked vehicles. Attention needs to be given to the control measures for reversing the low loader and appropriate exclusion zones.
- Embankment vehicle edge protection to prevent subsidence and toppling.
- Environmental hazards including special considerations for noise, working over water, enclosed spaces and protected sites. For example Sites of Special Scientific Interest (SSSI).
- Positioning of support material, consumables, site control and lighting, either temporary or permanent.
- Security and potential vandalism of stabled machines, attachments, accessories and re-fuelling storage facilities.
- Overhead power lines and telephone cables.
- Cant and OHL limitations imposed by the Engineering Compliance Certificate/Engineering Acceptance Certificate (ECC/EAC) at the On / Off tracking point(s).
- Stabling arrangements and clearances between subsequent shifts to ensure continuous sufficient clearance from rail lines and OHL, attention needs to be given to consideration of the rule book, rail vehicle travel gauge, driver visibility and the possibility of anyone climbing on top of the machines.

5.1.3 Identification and Assessment of Potential On / Off tracking Points

The only acceptable arrangements are those listed in VolkerRail standard PE334 following this standard will achieve compliance with NR/L2/RMVP/0200 Module 301 for Road Rail Access points.

1. A suitable level crossing (permanent or temporary).
2. An On / Off tracking point where the road surface is level with the rail top.
3. Consolidated ballast to the top of the rail head.
4. Secured timbers which are level with the rail head.

On / Off tracking points are either permanent or temporary. Permanent On / Off tracking points are designated by Network Rail. Temporary On / Off tracking points are used for a possession or work site and should either be removed before handing back the possession. Alternatively approval can be obtained from the local Network Rail track engineer or Network Rail project engineer for the On / Off tracking point to remain in place.

Consideration is to be applied when assessing the potential of each On / Off and cross-tracking Point with regards to the following:

- Approved timber fastenings;
- Minimum timber thickness;
- Depth and type of consolidation;
- Minimum point dimensions;
- Angles of approach

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A member of the Beaver road transportable tamper crew who has been deemed competent to carry out the site assessment and complete the Beaver site visit inspection form (PE350F01), shall consider the following when identifying all potential On / Off and cross-tracking points:

- The immediate area for the delivery and collection of the Beaver road transportable tamper whilst on the low loader. Attention needs to be given to the access gate approach, road dimensions and any height or weight restrictions.
- The type of On / Off tracking point and method of delivery to be used.
- Ensure that there is sufficient room to allow the low loader to pull out from under the raised machine or reverse underneath it.
- Ensure that there is sufficient room to allow the machine to be turned on the turntable for correct orientation if required.
- Any infrastructure hazards such as signal posts, OLE stanchions, bridges, buildings, tunnels, platforms and any other limited clearances which could be a hazard to the safe delivery and operation of the Beaver road transportable tamper.
- Surface cable troughs, track drainage systems catch pits and if any protection is required.
- Level crossings, switches and crossings.
- Adjacent lines and ALO arrangements, possession arrangements and work-site limits and isolations.
- AC electrified lines, third and fourth rail systems and isolations which will be in place.
- Height of the OLE wires at the On / Off tracking point.
- Any preparation works to be completed by the client to ensure safe delivery and collection of the Beaver road transportable tamper from site.
- Additional pre-core works possession and logistical requirements to prepare and build-in embedded temporary inserts and secured timbers into the existing formation.

5.1.4 On / Off tracking Under OLE

If the On / Off tracking point is under OLE the following procedure is to be followed:

- There has to be a full isolation of the OLE and an isolation permit issued covering the full On / Off tracking area. This is to be briefed by the CoSS to all staff.
- On the site visit the minimum wire height at the On / Off tracking point is to be obtained and recorded on to the Beaver sit visit inspection form PE350F01 (section 10a).
- Consideration is to be given to the access point formation to determine if any additional outrigger blocks are required. This is to allow for adequate clearance for the low loader to pull out or reverse under the machine for differences in road height and camber. The height of any additional outrigger blocks plus the overall height of the machine on outriggers is to be recorded on the Beaver site visit inspection form PE350F01 (section 10b).
- The overall machine height on outriggers and any outrigger blocks is then subtracted from the minimum wire height. If the figure left is greater than 300mm then the machine may be On / Off tracked. If the figure left is less than 300mm then an alternate On / Off tracking point should be found.

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5.1.5 Arrangements prior to the delivery and collection of the beaver tamper.

Once the site visit has been completed and all information obtained, the operations manager POM or delivery supervisor POM are to review the information. They are also to arrange the following;

- All delivery and collection arrangements for the low loader with the assigned haulage company.
- That the roster team is informed of the crew required for the Beaver tamper and any accommodation for the beaver tamper crew is requested.
- Any arrangements for refueling and time for scheduled maintenance whilst the machine is on site are made.
- That the assigned Beaver tamper crew are given all the relevant information relevant to the works. This will include a copy of the completed Beaver site visit inspection form and any site contacts.

5.1.6 On site arrangements for safe delivery and collection of the Beaver tamper.

It is the responsibility of the Beaver Tamper crew to ensure that the Beaver is loaded and unloaded, ensuring that adequate support is provided under the outriggers and turn table.

On arrival at site the Beaver Tamper crew are to ensure that the following are carried out;

- That they identify themselves to the site contact and check that the information on the Beaver site visit inspection form is still correct regarding the machine orientation and line which the machine is to be placed on.
- That all the Beaver crew receives the relevant site briefings and inductions and that a CoSS is allocated to the Beaver.
- Once the Beaver crew have been briefed by the CoSS that the Beaver site operational briefing sheet is filled out and signed by the crew and the CoSS.
- Log in and out with VRCC at the start and end of the shift.
- That the pre work checks and log book are correctly filled out on the machine.
- Any faults and any rectified and outstanding faults on the machine are entered into the machine log book. These are to be reported through the appropriate reporting channels to the delivery supervisor POM and engineer POM. All correspondence is to be sent to faultreport.RMMM@volkerrail.co.uk
- To ensure the Beaver crew fully understand the machine orientation.
- Once the CoSS for the Beaver gets the authorisation to go on track, the Beaver Tamping crew and the CoSS are to check the on tracking point for hazards.
- Attention needs to be given to the correct position for the Beaver to on track, allowing sufficient room to deploy outriggers on firm ground.
- Sufficient clearance for the machine to be rotated to line up correctly in required direction and sufficient room to pull the low loader out from underneath must also be considered
- Ensure that the machine is correctly placed on the correct line.
- Sufficient outrigger pads are placed under the outriggers to spread the weight of the load.
- The machine is safely unloaded from the low loader and positioned on the track facing the correct direction.

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- All equipment safely stowed away to enable travel in W6 gauge.
- Ensure that all tamping is carried out as per the client's instructions and to liaise with the track engineers to remedy any problems encountered.
- The safe loading of the beaver on to the low loader from the infrastructure in accordance with risk assessment 'Beaver Risk Assessment Loading and Unloading'.

5.1.7 Project & Site Responsibilities

The Project Manager and/or Site Engineer shall ensure that planned on off tracking points are documented within the Work Package Plan and Task Brief.

The Project Manager and/or Site Engineer shall ensure that a SSOW is in place for the site visit and that all relevant information is correctly recorded on the Beaver site visit inspection form PE350F01.

The Track Engineer and/or Track Quality Supervisor shall ensure that the beaver tamper crew are briefed on the work required. The tower operator is to ensure that copies of all ALC files used are saved on to the machine computer system.

It is the responsibility of the Track Engineer and/or Track Quality Supervisor to ensure that the infrastructure is correctly marked up in line with NR/L3/TRK/3241 specifications. The Beaver crew are to be briefed to identify any cables, bonds, axle counters, greasers, tie bars, areas where banks need to be raised, clamps need to be opened and any other obstructions.

5.1.8 Measuring Performance

There are no direct performance indicators associated with this standard, other than an annual review of any problems encountered on site.

5.2 Audit Requirements

The arrangements associated to this standard will be monitored for compliance through site inspections and safety tours.

5.3 Retention of Records

All Beaver site visit inspection form PE350F01 shall be retained for 5 years.

6. DOCUMENTATION (OUTPUTS)

- PE350F01 Beaver Site visit inspection form
- PE350F02 Beaver Site operations briefing sheet

7. ISSUE RECORD

Issue	Date	Comments
1	25/02/2016	New
2	23/11/2018	Minor amendments to reference documents (NR/PLANT/0200 now NR/L2/RMVP/0200) and reference to SAF33 in PE350F01 amended to PE326M002. Both forms formatted to current template.

8. WHAT HAS CHANGED IN THIS LATEST ISSUE AND WHY

This document has been changed as a result of periodic review and to reflect changes to the Network Rail Plant manual.

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PE350F01 – reference to SAF33 removed (this procedure has been withdrawn) and replaced with reference to PE326M002.

Both PE350F01 and PE350F02 have been re-formatted to current template.

9. BRIEFING REQUIREMENTS

All new employees will receive an introduction to the Integrated Management System (IMS) at induction, according to the nature of the role.

All employees with an email address receive the 'Record of Revisions' each month, which details changes to the IMS. All Line Managers retain the responsibility to ensure their staff are briefed on changes as appropriate.

The following table defines how revised issues of this document are briefed to existing employees according to related specific responsibilities.

This is determined using the 'RACI' principle. Those roles identified as 'Responsible' and 'Accountable' should receive a formal awareness briefing facilitated by the Document Owner.

Discipline	Role	RACI	Type of briefing
Senior Management	General Manager - Plant	Accountable	Detailed
Senior Management	Business Managers	Responsible	Detailed
Project Management	Project Managers	Responsible	Detailed
Engineering	Project Engineers	Responsible	Detailed
Engineering	Engineer - Plant	Consulted	Awareness
HSQES	Competence and Training Manager	Informed	Awareness
Senior Management	HSQES Director	Consulted	Awareness

Competence	RACI	Type of briefing
Beaver Operator	Responsible	Detailed

10. IMS AUTHORISATION

Document owner approval:

Jack Pendle, Engineering Director, 23/11/2018

Approval for IMS:

Paula Roberts, IMS Coordinator, 23/11/2018

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