Code of Practice for On, Off and Cross Tracking of On Track Plant (OTP)

M&EE Networking Group
Document revision history

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<th>Reason for change</th>
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<tbody>
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</table>

Background

A sub-group of the M&EE Networking Group have looked at the process for on, off and cross tracking of On Track Plant (OTP). The M&EE Networking Group recommend this COP as good practice for the industry.

M&EE COPs are produced for the benefit of any industry partner who wishes to follow the good practice on any railway infrastructure. Where an infrastructure manager has mandated their own comparable requirements, the more onerous requirements should be followed as a minimum for work on their managed infrastructure.

The M&EE Networking Group makes no warranties, express or implied, that compliance with this document is sufficient on its own to ensure safe systems of work or operation. Users are reminded of their own duties under health and safety legislation.

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The M&EE Networking Group agreed and signed off this Code of Practice on 09 October 2019 and published on 07 December 2019.

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Purpose
This Code of Practice is intended to give guidance for the safe on, off and cross tracking of OTP to mitigate the possibility of derailing or overturning, potentially causing injury or damage to persons or infrastructure, whilst undertaking this process.

Scope
This Code of Practice is applicable to all types of OTP and covers all on, off and cross tracking of OTP by:

- driving onto and off the rails
- use of jack legs and lateral movement beams to allow side shift
- use of turntable

Note: This includes leaving and returning to the track where the rails have been removed.
Definitions

Cross Tracking
The process of transferring the OTP from one line to another by off and on tracking.

Engineering Conformance Certificate (ECC)
A certificate issued by a Plant Assessment Body (PAB) confirming conformance of the design and construction of OTP and associated equipment, and its maintenance instruction, with all relevant mandatory requirements of RIS-1530-PLT. This serves the same purpose as the former Engineering Acceptance Certificate (EAC) which was issued by a VAB.

On Track Plant (OTP)
Machines with rail wheels capable of running on railway track, limited by their engineering acceptance to running within a possession only. For the purposes of this document they are split into three main groups:

- de-mountable machines
- road-rail vehicles (RRVs)
- trailers

On Tracking
The process of placing OTP on the line.

Off Tracking
The process of removing OTP from the line.

Road-rail vehicle (RRV)
A vehicle that can travel on the ground under its own power and also travel on rail by virtue of a rail wheel guidance system under its own power system. Such vehicles are not allowed to operate, work or travel on rail outside possessions.
1. Requirements

1.1 OTP should only be on and off tracked by lifting on and off utilising approved lifting machine/equipment with a documented lift plan, or at an approved on and off tracking point, unless the OTP has the infrastructure manager's approval for on and off tracking at other locations (see Fig 9).

1.2 A suitable and sufficient risk assessment should be undertaken during the planning stage to determine the suitability and classification of the RRAP.

1.3 An approved on and off tracking point (commonly known as a RRAP – road-rail access point) should be of sufficient length appropriate to the type of machine (normally this is at least 1.5 times the length of the road-wheelbase, or as specified in the OEM operations manual. Where the RRV is required to drive onto the track – a longer length of RRAP permits a shallower approach angle and reduces the risk of fouling lines open to traffic).

1.4 On and off tracking points are either: permanent; semi-permanent or temporary.

1.4.1 Permanent on and off tracking points are designated by the infrastructure manager. Semi – permanent and temporary on and off tracking points are generally installed for the duration of planned works or possession and should either:

a) be removed before handing back the possession

or

b) approval obtained from the infrastructure manager's track engineer or project engineer for a RRAP to remain in place and arrangements made to ensure the RRAP remains safe to use for the duration of the planned works or possessions

Note: These installations may be subject to routine maintenance and/or inspection as directed by the Infrastructure Manager’s requirements.

Note: When any RRAP is removed the infrastructure should be inspected to ensure no damage is present and it is fit to run trains.

1.4.2 Permanent Installations

- public highway level crossing - See Fig 1
- yard where the road surface is level with rail top - Concrete, tarmac or consolidated stone – See Fig 2
- proprietary RRAP's e.g. rubber Bomac, Omni, Strail, Holdfast etc.
Note: In regard to level crossings, consideration should be given to the implementation of suitable traffic management controls during the on/off tracking process.

1.4.3 Semi-Permanent Installations

- Semi – Permanent Road Rail Access Point Fig 3
- Secured timber infill - See Fig 4
- Proprietary RRAP’s e.g. rubber Bomac, Omni, Strail, Holdfast etc.

1.4.4 Temporary Installations

- Temporary timber decking also known as Bog Matting (where the timbers are fixed to each other) should be suitably restrained, supported and be removed at the end of the possession. Installation should be in sections covering the four foot, cess and six foot as required. Care should be taken when installing to ensure a smooth transition between sections and top of rail. See Fig 5
- Consideration should be given to the method of lifting including size and weight of sections to be installed. All lifts to be undertaken in accordance with COP 0011
- A proprietary track access system approved by the Infrastructure Manager for OTP to be on or off tracked - See Figures 6 & 7
- Consolidated ballast to at least the underside of the rail head See Fig 8

1.5 When considering the use of a RRAP cognisance should be given to the following:

a) The work activity to be undertaken
b) The type, size and weight of machine to be used
c) The RRAP should be of adequate length to allow the machine to manoeuvre on the RRAP safely
d) Any limitations detailed for the machines concerned (EAC, ECC) or other relevant certification/documentation

1.6 It is considered best practice to wherever possible utilise a permanent installation, where this is not possible a semi permanent installation should be considered next, followed by a temporary installation taking into account the additional factors below:
• access availability and limitations including third party permissions

• the frequency of use and potential to damage the approach to the track

• RRAPs should not be placed closer than 20 metres from:
  ▪ any switch and crossing unit
  ▪ a platform ramp
  ▪ an underbridge or tunnel where there are vertical or lateral restrictions that could restrict vehicle manoeuvrability
  ▪ where infrastructure assets such as lineside structures are located which could:
    i. restrict vehicle manoeuvrability
  ▪ next to, or over, under track crossings
  ▪ where there is an excessive height difference between adjacent running lines
  ▪ within trespass and vandalism hotspots or
  ▪ where road access is hazardous (for example, access is directly from a dual carriageway or areas of limited visibility)
  ▪ where live 3rd/4th rail is present

Note It may be permissible to place a RRAP within 20 m of the above provided the risk assessment required in 1.2 above demonstrates it is safe to do so.

• cant, gradients and other relevant track geometry

• structure and condition (e.g., high, low, soft) of ballast shoulder and cess

• protecting roadway and verges from damage

• protecting the infrastructure from damage. (e.g., sleepers, check rails and other infrastructure equipment e.g. cables, bonds, troughing routes, drainage routes and buried services)

• protecting railhead from damage, especially from tracked vehicles
  i. proprietary rail head protection equipment approved by the infrastructure manager should be used where required – see Fig 7
  ii. adequate bridging materials should be used to prevent damage
• OLE and other overhead obstructions including structures, cables etc.

• 3rd and 4th rail systems
  i. It is considered best practice to on and off track where a gap in the conductor rail exists. Where no suitable gap exists, measures should be taken to protect the conductor rail(s) and the associated components from damage

• ground bearing capability – use of load distribution materials

• positioning of any jacking legs (see fig 9) – these should always be used on proprietary pads or suitable packing on ballast (never place jacking legs onto sleepers

• any other site specific hazards

• the approach to the rail should be of a suitable incline for the OTP

1.7 The site specific work plan should cover all planned on, off and cross tracking activities including emergency recovery arrangements.

Note COP 0019 Covers Recovery of OTP.

1.8 Consideration should be given to any line open to traffic during the on, off and cross tracking process.

Note: Details of Any Lines Open protection measures are detailed in COP0032.

1.9 Provisions should be made for machines to safely enter and exit an area where the rails and sleepers have been removed (e.g. in a dig, excavation etc.), by suitably graded ramping at the beginning and end of excavation (e.g. using ballast or proprietary temporary ramp) and adequately supporting the end of the rail. See Figures 10 and 11.

1.10 Using the boom dipper arm to assist in the on/off and cross tracking process is bad practice and should not be undertaken.

1.11 All on, off and cross tracking locations including site access points should be inspected for damage pre and post works. Any damage identified should be reported in accordance with the infrastructure manager’s arrangements.

1.12 On, off and cross tracking under OLE or in 3rd/4th rail areas should only be undertaken with a safe system of work and with the infrastructure manager’s approval.
Illustrations

Fig 1  Public level crossing

Fig 2  Yard.
Fig 3 Semi – Permanent RRAP

Fig 4 Secured timber in-fill.
Fig 5 Temporary timber decking (Bog Matting).

Fig 6 Proprietary temporary access equipment
Fig 6 Proprietary temporary access equipment.

Fig 7 Proprietary access equipment with rail head protectors.

Fig 8 Consolidated ballast to the underside of the rail head.
Fig 9 Example of a machine, with a jacking system that can on/off track at locations other than shown in previous illustrations.

Fig 10 Example of ramp for entry / exit to dig. Machine approaches work area where track has been removed, ballast has been provided in four-foot and over both ends of the sleeper (for the length of the machine) and as a ramp down into the dig.
Fig 11  Machine is able to lift rail guidance wheels and drive on ballast ramp.