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# GERT8000-HB15 ERTMS Rule Book

## Handbook 15 ERTMS

Duties of the machine controller (MC) and on-track plant operator on ERTMS lines where lineside signals are not provided  
Issue 3



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# 1 Definitions

## **Loose shunting**

This means shunting vehicles that do not stay attached during the movement.

## **On-track plant (OTP)**

Also known as 'in possession only rail vehicles' and includes road-rail vehicles (RRV), rail-mounted maintenance machines (RMMM) and their trailers and attachments with guidance wheels.

## **Propelling**

This means any movement where vehicles are being pushed by the OTP.

## **Possession**

A running line is under possession when arrangements have been made to block the line and engineering trains or OTP may be used.

A possession on a running line will be under the control of a person in charge of the possession (PICOP).

The PICOP is responsible for authorising the movement of engineering trains or OTP anywhere within the possession, other than entering a work site or within a work site.

The PICOP will wear an armlet on the left arm or a badge on the upper chest. The armlet or badge will have PERSON I.C. POSSESSION in red letters on a yellow background.

A possession may also be arranged for a siding or group of sidings. This type of possession will be under the control of a person in charge of the siding possession (PICOS).

### **Travelling**

This means a movement of the OTP in rail mode along a running line or siding. The OTP must be in travel mode with all equipment safely stowed away. This includes anything attached to or being carried on the OTP.

### **Working**

This includes on and off-tracking and when the OTP is being used in rail mode for any purpose other than travelling.

### **Work site**

A work site is the portion of line within a possession of a running line where work will take place and will have a work-site marker board (WSMB) at each end.

Each work site is under the control of an engineering supervisor (ES) or safe work leader (SWL). The ES or SWL is responsible for authorising the movement of engineering trains or OTP entering or within the work site.

The ES will wear an armband on the left arm or a badge on the upper chest. The armband or badge will have ENGINEERING SUPERVISOR in blue letters on a yellow background.

The SWL will wear an armlet on the left arm or a badge on the upper chest. The armlet or badge will have SWL in blue letters on a yellow background.

## **2 Where these instructions apply**

The instructions in this handbook only apply to OTP within a possession of a running line or siding.

OTP must not be used or travel outside a possession.

A machine controller (MC) must be appointed when OTP will be on-tracked, off-tracked or will be used in rail mode.

It is not necessary for an MC to be appointed for each item of OTP as long as the method of work is shown in the method statement.

## **3 Competence and identification**

### **3.1 Machine controller**

You must have with you a valid machine controller certificate of competence issued by your employer.

You must wear an armlet on your left arm or a badge on your upper body with MACHINE CONTROLLER or MC in black letters on a white background.

If the OTP will be carrying out any lifting operations, you must also be competent as a crane controller and wear an armlet on your left arm or a badge on your upper body with CRANE CONTROLLER or CC in black letters on a white background.

You do not need to wear the machine controller armlet or badge if you are wearing the crane controller armlet or badge.

### **3.2 OTP operator**

You must have with you a valid OTP operator certificate of competence issued by your employer.

You may also act as the MC as long as you also hold an MC certificate of competence and this method of work is shown in the method statement.

## **4 Testing OTP**

The OTP operator must carry out all the tests shown in the specific instructions for the OTP concerned.

Except for those tests that can only be carried after OTP has been on-tracked, tests must be carried out before on-tracking.

If tests are carried out after on-tracking, the OTP must immediately be taken off the line if it fails the test.

The MC must make sure the OTP operator carries out the tests.

## **5 Briefing the OTP operator**

The MC must tell the OTP operator:

- the speed restrictions that apply
- to sound the horn at any whistle boards
- the location of any block marker the OTP must stop at
- the location of the WSMBs
- the location of any points or crossovers
- about any known poor rail-head conditions.

The MC must also tell the OTP operator of any hazards that the OTP operator must be aware of such as:

- gradients
- level crossings
- tunnels
- platform edges
- overhead obstructions
- other site activities.



## 6 On and off-tracking

### 6.1 General

An MC must be with the OTP when it is:

- being on or off-tracked
- being set up
- working in rail mode.

These activities must only be carried out within a possession of a siding or in a work site on a running line that is under possession.

The MC must get permission from the PICOS, ES or SWL before these activities are carried out.

When the OTP has finished work, has been off-tracked and is clear of the line, the MC must tell the PICOS, ES or SWL.

If another line will be fouled when the OTP will be on or off-tracked, the MC must:

- if the line is a running line under possession, make sure that the affected portion of line is within a work site and the ES or SWL has given permission
- if the line affected is a siding, make sure the affected portion of line is under possession and the PICOS has given permission
- if the line affected is a running line not under possession, make sure that a COSS or SWL has arranged a blockage of the affected portion of line.

## **6.2 On or off-tracking on lines with overhead line equipment (OLE)**

OTP must not be on or off-tracked or cross a line that has OLE until there is an isolation and:

- an overhead line permit has been issued to the COSS, and
- the COSS has given permission to start work.

An isolation is not required if a written safe system of work has been provided for this purpose, and the engineering acceptance certificate (EAC) or engineering conformance certificate (ECC) for the OTP allows this.

## **6.3 On or off-tracking on lines with conductor rails**

OTP must not be on or off-tracked or cross a line that has conductor rails until there is an isolation and:

- a conductor rail permit has been issued to the COSS, and
- the COSS has given permission to start work.

Additionally:

- there must be adequate gap in the conductor rail, or
- an approved conductor rail ramp must be used, or
- the conductor rail must have been lowered and protected.

You must carry out any other instructions to do with the conductor rail as shown on the EAC or ECC for the OTP.

## **7 Making rail movements**

### **7.1 Getting authority for movements**

Movements must only enter or take place within a work site when the ES gives permission. Only after the ES or SWL has given permission to the MC may the MC authorise the OTP movement.

Movements must only leave or take place outside a work site when the PICOP gives permission. Only after the PICOP has given permission to the MC may the MC authorise the OTP movement.

Movements must only enter or take place in a siding when the PICOS gives permission. Only after the PICOS has given permission to the MC, may the MC authorise the OTP movement.

OTP is not allowed outside a possession.

### **7.2 Sounding a warning**

Before making any rail movement, the OTP operator must give one short blast on the horn as a warning that the OTP is about to move.



### **7.3 Head and tail lights on OTP**

OTP must display two white lights at the leading end and at least one red light at the rear.

OTP must have a headlight at the leading end if it is to travel at a speed of 30 km/h (20 mph) or more.

Any vehicle that the OTP is hauling must display at least one red light at the rear.

Any vehicle that the OTP is propelling must display two white lights at the leading end.

### **7.4 Speed of movements**

The following movements are restricted to a maximum of 10 km/h (5 mph):

- over points
- anywhere within sidings
- controlled from the ground
- where speed has not been given by the ES, PICOP or SWL.

Other movements may be authorised by the ES, PICOP or SWL at a speed up to 40 km/h (25 mph).

However, the OTP operator must always be able to stop the OTP within the distance that can be seen to be clear of any obstruction, or before reaching a handsignal that is being displayed.

When CCTV equipment is being used as shown in section 7.9, speed must not exceed 15 km/h (10 mph).

## **7.5 Points**

Before any movement is made over points, the MC must check them to make sure they are in the correct position for the movement.

The MC must tell either the ES, PICOP or the SWL, if the EAC or ECC states that the OTP cannot be relied on to operate train-operated points.

## **7.6 Protecting an adjacent line in an emergency**

If an adjacent line becomes obstructed during the movement, emergency protection must immediately be carried out. The MC and OTP operator must decide how this is to be done.

## **7.7 Pulling or pushing a vehicle not coupled to the OTP**

Except as shown in the brake-testing procedure for trailers, a vehicle must not be moved using a chain or rope or by pushing the vehicle with the OTP in road mode.

Only tow bars and couplings specially designed for the purpose of coupling vehicles may be used.

Vehicles must never be moved using a prop or pole against the OTP or any rail or road vehicle.

Loose shunting must never be carried out.

## **7.8 Riding on OTP**

Nobody must ride on OTP or any vehicle attached to it unless it has purpose-made seating or a riding platform and its use is shown in the EAC or ECC.

## **7.9 Having a clear view ahead**

The OTP operator must always have a clear view of the line ahead. Mirrors must not be used for this purpose.

If for any reason the OTP operator cannot get a clear view of the line ahead, the OTP operator and the MC must arrange to turn the OTP.

If the OTP cannot be turned, all movements must be controlled by the MC using radio or handsignals.

The MC must do this from a safe position on the ground or riding on the leading end of the OTP if it is authorised in the EAC or ECC.

Some OTP have an approved on-board CCTV colour display. This may be used as long as:

- it gives a clear view of the line ahead
- the EAC or ECC allows its use
- its use is shown in the method statement.

## **7.10 Level crossings**

The MC must authorise the OTP to pass over a level crossing only when permission has been given by either the ES, PICOP or SWL as appropriate.

The ES, PICOP or SWL must give the MC specific instructions about what must be done at each level crossing. The MC must give these instructions to the OTP operator.

## **7.11 Block markers**

The MC must authorise the OTP to pass a block marker only when either the ES, PICOP or SWL as appropriate has given permission.

## **7.12 Work-site marker boards**

The MC may authorise the OTP to pass a WSMB displaying two flashing red lights only when permission has been given by the ES or SWL.

The MC may authorise the OTP to pass a WSMB displaying two flashing yellow lights only when permission has been given by the PICOP.



## 8 Propelling movements

All movements must be controlled by the MC from a safe position on the ground, where the OTP operator and MC can see each other, or stay in contact with each other.

If the EAC or ECC allows the use of purpose-built accommodation on the OTP, the MC may travel in the leading vehicle if it has been established that using handsignals or radio can properly control the movement.

The MC must use the horn or whistle to warn others when the propelling movement is taking place.

If propelling outside a work site the MC must get the permission of the PICOP.

Propelling outside a work site is only allowed if the details have been published in the *Weekly Operating Notice* or *Engineering Notice* and is shown in the method statement.

## 9 Controlling OTP rail movements

### 9.1 General

Authority for movements may be given face-to-face, by using a radio or by giving handsignals.

The MC and the OTP operator must agree how the movement will be controlled and exactly what needs to be done.

## 9.2 Using radio

When a radio is being used to control movements from the ground, the MC must:

- clearly identify the correct OTP and OTP operator
- speak continuously throughout the movement or transmit a continuous bleep signal
- instruct the operator to stop immediately if the radio transmission is failing.

The OTP operator must stop the movement immediately if the MC stops speaking or the continuous bleep signal cannot be heard.

The OTP operator should only restart the movement when the MC gives authority.

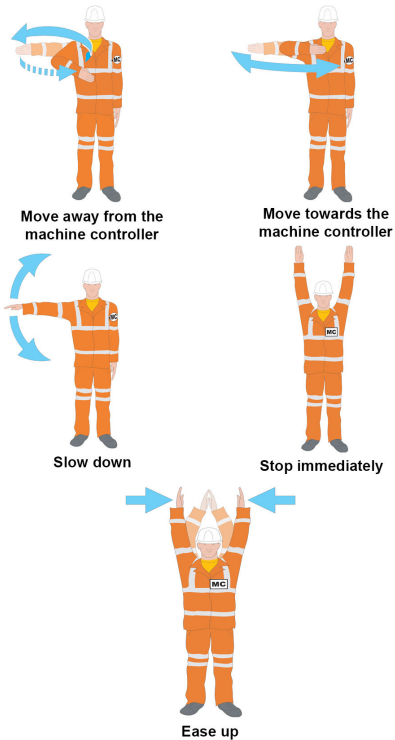
## 9.3 Using handsignals

When handsignals are being used to control movements from the ground, the MC must use the handsignals shown in diagram HB15.2 ERTMS or diagram HB15.3 ERTMS.

The OTP operator must stop the movement immediately if sight of the MC handsignal is lost.

The OTP operator must only restart the movement when the MC gives permission.

If the OTP operator does not understand the handsignal given or is unsure if it applies, the movement must not start or continue.



**Diagram HB15.2 ERTMS Handsignals during daylight**



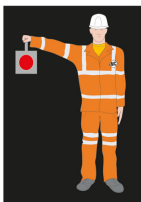
Slowly move away from  
the machine controller



Slowly move towards the  
machine controller



Ease up



Stop immediately

## Diagram HB15.3 ERTMS Handsignals during darkness or poor visibility

## 10 When working

### 10.1 General

Except as shown in section 10.3, there must always be enough clearance between the OTP, including any load, and any adjacent open line. An open line must not be fouled at any time.

This also applies to the line adjacent to vehicles being loaded by OTP with jibs, booms, conveyor belts or other extendable equipment.

If there is not enough clearance, the MC must arrange to protect the adjacent line before work starts.

### 10.2 Protecting other lines

When the affected line is in a running line possession, the MC must make sure that it is within an ES's or SWL's work site and the ES or SWL has given permission to foul that line.

When the affected line is in a siding possession, the MC must make sure that permission of the PICOS has been given.

When the affected line is not under possession, the MC must make sure that line has been blocked by a COSS or SWL and the COSS or SWL and has given permission for the line to be fouled.

### **10.3 Approved alternative method of working**

Any approved alternative method published in the infrastructure manager's company instructions may be used instead of the instructions shown in section 10.2, as long as this is shown in the method statement.

## **11 Leaving OTP unattended**

OTP may be left unattended in rail mode only when the MC has the permission of the:

- ES or SWL, if the line is within a work site
- PICOP, if it is outside a work site within a running line possession
- PICOS, if it is in a siding possession.

The OTP operator must make sure that any parking brake is correctly applied before the OTP is left unattended.

The OTP operator must also make sure a red light is showing on the OTP so that it can be seen by the driver of any movement that could approach.

## **12 Movements without an MC**

Movements may be made without an MC but only when it is being done as shown in the infrastructure manager's company instructions.

When working to these instructions the MC must make sure all the hazards within the route have been identified and are briefed to the OTP operator.

The MC and OTP operator must make sure they both know the exact location to which the unaccompanied movement may proceed.

The OTP operator must not go beyond this point until authorised by an MC.

## **13 Movement of multiple OTP**

### **13.1 General**

The PICOP is only allowed to authorise one movement at a time within the area controlled unless it is shown in the method statement.

Under these arrangements, more than one OTP may travel together without being coupled.

The PICOP will not allow the multiple movement to leave the work site until permission has been given to each MC and each OTP operator has been given the necessary instructions by the MC.

## **13.2 During the movement**

The OTP operator must make sure that a distance of at least 100 metres is kept between the OTP and the OTP ahead.

The speed must not exceed 30 km/h (20 mph) or any lower speed restriction that applies.

When the movement arrives at the destination, no further movement must take place until authorised by the MC.



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## Notes



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