**GERM8000** 

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# Rule Book Possession Workers Manual



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# **POSSESSION WORKERS MANUAL**

# **GERM8000/possessionworkers**

RSSB has produced this manual to provide end-users with access to the content of GERT8000 (The Rule Book) that is relevant to all roles who carry out activities in a possession as defined in the <u>Rule Book Matrix</u> published by RSSB.

The manual is intended to be read electronically and on a device of your choice. To facilitate navigation, the manual includes bookmarks and the contents page includes links enabling you to find the information you require quickly. The content can also be searched using keywords or phrases, for example, worksite. It is not intended for printing.

If you require individual copies of the modules or handbooks contained within this manual, then these can be downloaded from <u>Railway Group Standards</u> or ordered in hardcopy from Willsons Printers: Newark.

Any party wishing to apply for a deviation or to propose a change should apply referencing the individual handbook(s) and/or module(s) and not this manual. The manual will be updated and re-issued as individual handbooks and modules are revised.

Any party wishing to access the impact assessments or briefing notes associated with the individual modules and handbooks can do so by referring to the specific module or handbook on <u>Railway Group Standards</u>.

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### Inforce dates are set out in the individual handbooks within this manual.

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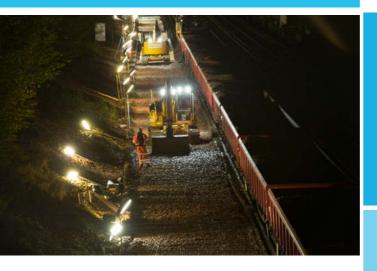
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GERT8000-T3 Rule Book



Possession of a running line for engineering work

# Issue 9

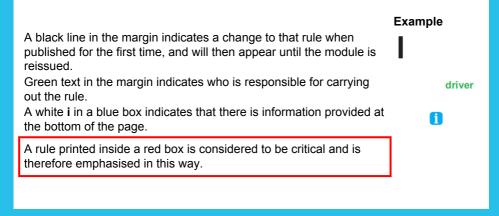


Module T3



September 2020 Comes into force 05 December 2020

#### Conventions used in the Rule Book



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# You will need this module if you carry out the duties of:

- a driver
- a signaller.

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# **Possession details**

The person responsible: signaller

## **1.1 Possession details to be published**

signaller Except where a possession must be taken in an urgent situation, details of the possession must be published in the *Weekly Operating Notice or Engineering Notice*.

## **1.2 Changing the possession limits**

# signaller The limits of the possession may be shortened or lengthened as long as:

- the details of the changed limits, including the planned time, are published in the Weekly Operating Notice or Engineering Notice, or
- in exceptional circumstances, it is agreed by Operations Control.

You must record the details in the Train Register.

## **1.3** Changes to the published details

# signaller Operations Control will let you and the person in charge of the possession (PICOP) know if it is necessary for any of the published details to be changed.



# **2** Taking the possession

The person responsible: signaller

# 2.1 PICOP confirming the details

The PICOP will contact the signaller, who controls the signal leading to the section of line that is to be taken under possession, and will state the published possession reference if there is one. signaller

If you are that signaller, you and the PICOP must agree:

- the line that will be taken under possession
- whether possession is to be taken around one or more trains
- the signals leading to the possession that will be kept at danger or the block markers leading to the possession from which the route will be kept closed
- the details of any points or crossings that may be used for trains outside the possession
- the position that points within the possession must be placed in
- the arrangements to be applied for each level crossing within the possession
- the exact location of the detonator protection and whether this is less than the standard distance
- the time the possession is to be taken.

# 2.2 Taking possession around one or more engineering trains

When possession will be taken or lengthened around an engineering train, you must signal the engineering train concerned as normal to the signal, block marker or flexible train arrival point (FTAP) location specified in the notices.

signaller



### signaller

When the engineering train arrives at the specified signal, block marker or FTAP, you must tell the driver not to move the train again until instructed to by the PICOP, engineering supervisor (ES) or safe work leader (SWL) after the possession has been granted.

When every engineering train is at its specified signal, block marker or FTAP, you must tell the PICOP.

You must record the details in the Train Register.

## 2.3 Arranging to block the line

#### signaller

When the section of line concerned is clear other than any trains at a stand as shown in section 2.2, or where the possession is to be taken for the purpose of removing derailed vehicles or any other obstruction, the following must apply.

You must make sure the signals that you agreed with the PICOP will protect the possession have been placed to danger or the routes have been closed.

If a protecting signal needs to be placed to danger by operating a signal post replacement switch (SPRS), you must arrange for this to be done.

You must also make sure all points are in the position necessary to protect the possession.

You must record the details in the Train Register.

You must arrange for the following signals to be placed to danger or routes to be closed:

- all controlled signals or routes within the possession, and
- all other signals or routes which lead to or across the possession.

If any protecting signals or routes are controlled by another signaller, you must get confirmation from that signaller that the protecting signals are at danger and will be kept at danger or the routes have been closed and will kept closed until the possession is given up.



If another signaller is involved with the possession arrangements, you must:

- tell them what the possession arrangements are
- get their assurance that they will keep to these arrangements.

If you are another signaller and are told about the possession arrangements, you must record in the Train Register:

- which line is blocked
- the limits of the possession
- the signals you must keep at danger or the routes you must keep closed to protect the possession
- the points you must operate to protect the possession
- the position that points within the possession must be placed in.

If it applies, you must place the block indicator for the affected line to **train on line**.

When all protecting signals are at danger or when the routes have been closed, you must tell the PICOP who will then complete section 1 of the possession arrangements form (RT3198). The PICOP will then read the details back to you.

When you are satisfied that all the details on the PICOP's RT3198 form are correct, you must tell the PICOP that the possession protection can be placed.

If any unworked points need to be secured, the PICOP is responsible for arranging for this to be done.

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# 2.4 Arranging detonator protection at the standard distance

### signaller

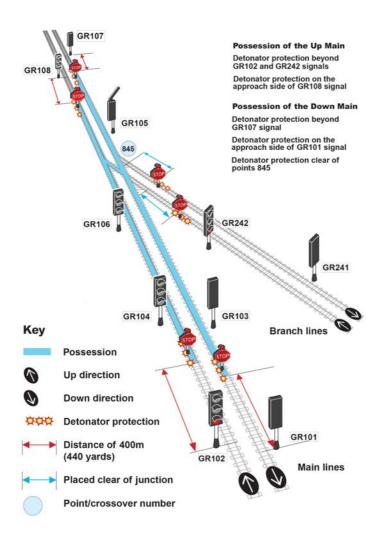
The PICOP will arrange for detonator protection to be placed as shown in diagram T3.1, or where points are involved, diagram T3.2.

You must record in the Train Register that standard detonator protection has been provided.

The PICOP will not provide detonator protection:

- at a crossover, siding or loop where it joins the line under possession, or
- on a single line where the PICOP has the token as protection.

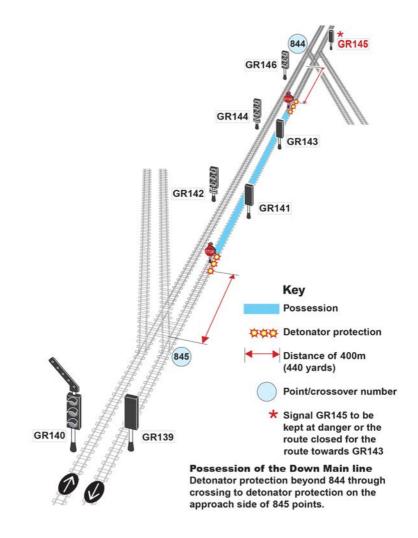




### Standard detonator protection

Diagram T3.1





### Standard detonator protection-points involved

Diagram T3.2



## 2.5 If the standard distance is not available If, due to the work that is to take place, it is not possible to place the signaller detonator protection at the standard distance as shown in diagram T3.1 or diagram T3.2, the following must apply. The detonator protection must be placed as close to the standard distance as possible. Any train movement approaching the detonator protection from within the possession must be made as shown in section 4.8. You must record in the Train Register that the standard distance for detonator protection is not available. **2.6** When detonator protection is in place signaller The PICOP will tell you when all detonator protection is in place. When you are sure that the line concerned is correctly protected, you may grant the possession to the PICOP. You must enter these details in the Train Register. 2.7 Using the token as protection If the token is used as protection, the PICOP does not need to signaller arrange detonator protection on a single line.

You must give the token to the PICOP or give a release so that it can be obtained from a token instrument that is not at the signal box. You may then grant the possession to the PICOP.

You must enter these details in the Train Register.

The PICOP must keep the token until the possession is given up.



# **3** Arrangements at level crossings

The person responsible: signaller

### signaller

The PICOP must not allow any train or OTP movement to take place, or any work to be carried out, that will affect the operation of any level crossing until the necessary arrangements have been put in place for that level crossing.

You must reach a clear understanding with the PICOP about the arrangements that will apply at each level crossing.

You must record in the Train Register the arrangements that are applied for each level crossing within the possession.

In addition to the instructions shown in module TS9 *Level crossings* - *signallers' regulations*, you must:

- tell any crossing keeper who will be affected by the possession arrangements
- tell the PICOP when an attendant is appointed or withdrawn at a level crossing.



The person responsible: signaller

## 4.1 Movements towards the possession

You must keep the route closed and not clear any signal leading to signaller the possession.

When an engineering train is to enter the possession, you must authorise the driver to pass the signal at danger or pass an end of authority (EoA) without a movement authority (MA) and proceed to the detonator protection.

You must get permission from the PICOP before doing this.

If there is no detonator protection because the token is being used as protection, you must agree with the PICOP the exact location you must authorise the driver to proceed to.

## 4.2 Propelling

You must not allow any of the following movements to be propelled unless the details are published in the *Weekly Operating Notice* or *Engineering Notice*.

- Movements entering the possession.
- Movements leaving the possession.

If it is necessary to propel when details have not been published, you must get authority from Operations Control before you can allow any of the above movements to be propelled. signaller



# **4.3 Entering the possession at the detonator protection**

# signaller Before you give the driver permission to proceed towards the detonator protection, you must make sure:

- the PICOP has given you permission
- you have not authorised a conflicting movement.

When the engineering train has entered the possession, the PICOP will tell you when the detonator protection has been replaced.

# **4.4 Entering the possession at an intermediate point**

### signaller

Before you give the driver permission to proceed from the protecting signal or protecting block marker towards the possession, you must make sure:

- the PICOP has given you permission
- the PICOP has positioned someone at the intermediate point to give instructions to the driver
- you have not authorised a conflicting movement to take place.

You must tell the driver to stop and get instructions from the person at the intermediate point.

The PICOP will tell you when the engineering train has entered the possession and is clear of the points or crossings at the intermediate point.

You must then return the points to the agreed position.



signaller

## **4.5 Entering the possession from an adjacent siding under possession**

If a movement is to enter the possession from an adjacent siding under possession, you must first agree with the PICOP and the person in charge of the siding possession (PICOS) how this is to be done.

## 4.6 Leaving the possession

When the PICOP tells you that an engineering train is ready to leave signaller the possession, you must personally authorise the driver to pass:

- beyond the protecting detonators out of the possession, or
- through points or crossings that are protecting the possession at an intermediate point.

You must make sure that the line is clear and safe for the movement to proceed before you authorise the driver to pass beyond the detonators.

If you can, you must signal the train normally beyond the protecting detonators.

To protect the possession, after the movement has left it, you must restore to their original position all points that you have operated for the movement.

# 4.7 Leaving the possession directly into a siding under possession

If a movement is to leave the possession directly into an adjacent siding under possession, you must first agree with the PICOP and the PICOS how this is to be done.

signaller



# **4.8** Movements towards the detonator protection when the standard distance is not available

### signaller

If the detonators have not been placed at the standard distance from points or crossings, the PICOP will not allow a movement to approach the detonator protection from within the possession without your permission.

You must give this permission only when any previous movement you have authorised through those points or crossings has passed clear.

After giving permission for the movement towards the detonator protection to be made, you must not allow a train to pass over the points or crossings until the movement has passed clear or has been completed.

## 4.9 Leaving the possession when there is no detonator protection

signaller When the PICOP is using the token as protection, you must agree with the PICOP how each movement is to leave the possession.



# **5** Movements over level crossings

The person responsible: signaller

## **5.1** When these instructions apply

You must apply the instructions shown in sections 5.2 to 5.11 as appropriate when authorising a movement to enter or leave the possession.

signaller

If the ES, PICOP or SWL is responsible for authorising the movement, the following will apply.

### AHBC

The ES, PICOP or SWL will get your permission before allowing an engineering train to pass over an AHBC that is not being locally controlled.

You must not give this permission if you are aware of any reason why the train must not pass over the level crossing.

OTP will not be allowed to pass over an AHBC level crossing unless it is being locally controlled.

### CCTV, OD or RC

If the crossing is not being locally controlled, the ES, PICOP or SWL will get confirmation from you that the barriers have been lowered and the crossing is clear before they authorise the movement to pass over the level crossing.



## 5.2 Before making a movement

# signaller Before the movement takes place, you must give details of the movement to those personnel operating:

- any CCTV, OD or RC level crossing
- other level crossings, if possible.

## **5.3 AHBC locally controlled**

# signaller You must tell the driver that the movement must not pass over the level crossing unless the crossing attendant is displaying a green handsignal.

## **5.4 AHBC that is not locally controlled**

signaller

Only an engineering train that is to pass normally over the level crossing and in a direction that has controls, may be allowed to proceed over the level crossing.

You must tell the driver not to stop specially before passing over the level crossing.

## 5.5 CCTV, OD or RC locally controlled

signaller

You must tell the driver that the movement must not pass over the level crossing unless the crossing attendant is displaying a green handsignal.



# 5.6 CCTV, OD or RC that is not locally controlled

You must not allow any movement in the wrong direction to pass over the level crossing.

For other movements, you must not authorise the driver to pass the signal or block marker protecting the level crossing until the barriers have been lowered for the movement.

You must then tell the driver not to stop specially at the level crossing.

## 5.7 AOCL and ABCL not switched off

If the level crossing has not been switched off as shown in module TS9 *Level crossings - signallers' regulations*: regulation 4.1, the following must apply.

You must instruct the driver of a train that is to pass over the level crossing normally, to proceed over the level crossing only when it is safe to do so.

For any train movements not passing normally over the level crossing, you must not allow the movement to take place unless:

- the level crossing has been closed to road traffic, or
- a competent person is positioned at the level crossing and has stopped road traffic by displaying a red handsignal on both sides of the level crossing.

You must instruct the driver to stop at the level crossing, sound the horn and then pass over the level crossing only when it is safe to do so.

signaller

signaller



# **5.8 AOCL and ABCL that has been switched off**

### signaller

If the level crossing has been switched off as shown in module TS9 *Level crossings - signallers' regulations*: regulation 4.1, the following must apply.

### **During daylight**

You must instruct the driver of a train that is to pass over the level crossing to stop the train at the level crossing, sound the horn and then pass over the level crossing only when it is safe to do so.

### **During darkness**

The movement of a train over the level crossing must not take place unless:

- the level crossing has been closed to road traffic, or
- a competent person is positioned at the level crossing and has stopped road traffic by displaying a red handsignal on both sides of the level crossing.

You must instruct the driver to stop at the level crossing, sound the horn and then pass over the level crossing only when it is safe to do so.

## 5.9 Manned level crossing

signaller You must instruct the driver to pass over the level crossing only if the level crossing barriers or gates are closed to road traffic.

If it is a traincrew operated (TMO) level crossing, you must make sure that a competent person is available to operate the level crossing before authorising the driver to proceed.



# 5.10 Crossing with red and green warning lights (R/G)

You must instruct the driver to stop at the level crossing, sound the horn and then pass over the level crossing only when it is safe to do so.

# 5.11 Barrow or foot crossing with white light indicators

You must instruct the driver to pass over the level crossing only signaller when it is safe to do so.



# 6 Change of personnel

The person responsible: signaller

## 6.1 Change of PICOP

signaller The PICOP will tell you the name of the new PICOP if there is a change. You must record the details in the Train Register.

## **6.2** Change of signaller

signaller If you are the new signaller taking duty, you must countersign the entries in the Train Register.



# **7** Giving up the possession

The person responsible: signaller

# 7.1 Giving up the possession around engineering trains

The PICOP may give up the possession around engineering trains standing at the agreed stop signals or block markers on the line under possession, as long as all of the following apply.

- The line is signalled by track circuit block (TCB) or ERTMS and the train is standing at a location where the train detection is by means of track circuits and not by axle counters.
- The movement, after the possession is given up, will be in the normal signalled direction and will be driven from the leading cab.
- You have agreed with the PICOP the stop signal or block marker to be used.
- The agreed signals are controlled signals or signals that you can replace to danger when the possession is to be given up around two or more trains.
- The agreed block markers are ones at which you can keep the route closed when the possession is to be given up around two or more trains.
- · Each train is standing at a separate signal or block marker.

When the engineering train arrives at the agreed stop signal or block marker, you must:

- tell the driver to make no further movement until you have given verbal permission for the engineering train to proceed, then
- tell the PICOP the train has arrived at the agreed stop signal or block marker and will not be moved.

You must not start the arrangements to give up the possession until all the engineering trains have arrived at the agreed signals or block markers. signaller



## 7.2 Removing the protection

signaller

When the possession is no longer needed, the PICOP will:

- if single line working is still in operation, tell the pilotman that the possession is being given up
- arrange to release any unworked points or train-operated points that have been secured
- arrange for the detonator protection to be removed.

If the token is being used as the protection and the possession is no longer needed, the PICOP will:

- · return the token to the signal box at either end of the section, or
- place it in an instrument that is not at a signal box after reaching a clear understanding with you about what is to be done.

## 7.3 Signaller being told when the possession is no longer needed

### signaller The PICOP will tell you that the line is clear and safe for trains to run on (or if section 7.1 applies, clear and safe other than the trains standing at the agreed signals or block markers) when:

- any unworked points or train-operated points that had been secured have been released
- the detonator protection has been removed.

## 7.4 Confirming the possession is given up

signaller

You must record the details in the Train Register. You must read the entry back to the PICOP.

When the entry has been made in the Train Register and if the PICOP agrees with the entry, this is confirmation that the possession has been given up.



# 8 Resuming normal working

The person responsible: signaller

# 8.1 Restoring signals and block indicator

When the PICOP has given up the possession, you must arrange for all signals that have been kept at danger or all routes which have been kept closed to be restored to normal working.

If it applies, you must arrange for the block indicator to be restored to **normal**.

# 8.2 Telling personnel the possession is given up

You must tell the following that the possession has been given up:

- any other signaller concerned
- any crossing keeper concerned.

If you are another signaller who is told the possession has been given up, you must write the details in the Train Register.

# 8.3 AHBC, CCTV, OD or RC level crossings

You must arrange for normal working to be restored at any AHBC, signaller CCTV, OD or RC level crossing at which an attendant has been appointed.

signaller



# 8.4 Possession given up around an engineering train

signaller If the possession was given up with an engineering train standing at a stop signal or block marker, you must tell the driver of that train that the possession has been given up and to proceed obeying all signals or in-cab indications.

# 8.5 First train over the affected portion of line

### signaller a) Checking the operation of track circuits

You must specially watch the operation of the track circuits during the passage of the first train over the line that was affected by the possession.

### b) On a TCB line

On a TCB line, you must not allow a second train to pass over the line that was affected by the possession unless there is a controlled signal which you have replaced to danger between the first and second trains.

### c) On an ERTMS line

On an ERTMS line, you must not allow a second train to pass over the line that was affected by the possession unless there is an EoA at which the route is closed between the first and second trains.

### d) Intermediate block signals

If there are intermediate block signals, you must not clear the section signal for a second train until the first train has arrived at the signal box ahead.





The person responsible: driver

# 9.1 Authority for movement of engineering trains (See diagram T3.3)

You must make movements only if you have the authority of the following personnel.

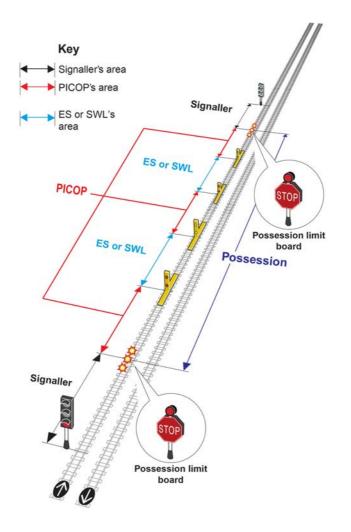
driver

### a) Signaller

The signaller will personally authorise you to make a movement that is required to:

- proceed from either end towards the detonator protection for the possession
- proceed to the location where your train will be met when entering the possession when the PICOP has the token on a single line
- enter the possession at an intermediate point where your train will be met
- pass through points or crossings that are protecting the possession at an intermediate point when leaving the possession
- proceed past the location of the detonator protection when leaving the possession
- proceed from the location agreed between the PICOP and signaller when the train is leaving the possession when the PICOP has the token on a single line.





Areas of responsibility

Diagram T3.3



### b) PICOP

The PICOP (or competent person on the PICOP's behalf) will authorise you to make a movement that is required to:

- go past the location of the detonator protection into the possession
- pass through points or crossings that are protecting the possession at an intermediate point when entering the possession
- enter or leave the possession from a siding that is also under possession
- move between the detonator protection at each end of the possession and the nearest work site
- pass the work-site marker board (WSMB) at the exit from a work site, this will be showing two yellow flashing lights
- move between work sites.

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

### c) ES or SWL

The ES or SWL (or a competent person on the ES's or SWL's behalf) will authorise you to make a movement:

- past a WSMB into a work site, this will be showing two red flashing lights
- within a work site.

The ES or SWL can permit a person to travel in your cab to give you instructions about the working of your train while loading and unloading, as shown in module SS2 *Shunting.* 

driver



driver The ES will wear an armlet on the left arm, or a badge on the upper body, with 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 body, with SWL in blue letters on a yellow background.

## **9.2 Reaching a clear understanding with others**

driver You must reach a clear understanding with the person authorising the movement as to:

- what you must do
- how far the movement is to proceed.

#### 9.3 Headlights and tail lamps

driverIf the train is detained outside a work site, you must make sure that:a red light is showing at both ends of the train

the headlights are switched off.

#### **9.4 Detonator protection**

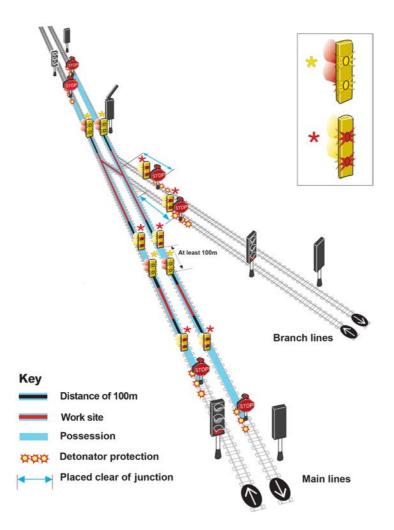
# driver Detonator protection is three detonators placed on the same rail, 20 metres (approximately 20 yards) apart with a possession limit board (PLB) placed at the centre detonator.

#### 9.5 Indicating each work site

driver A work-site marker board (WSMB) will be placed in the 'four-foot' at each end of the work site. See diagram T3.4.

The WSMB for one work site will be no closer than 100 metres (approximately 100 yards) from the WSMB of another work site.





#### Indication of work sites

Diagram T3.4



### driver WSMBs are not needed if there will be no engineering trains or OTP movements within the possession.

Only the ES or SWL can give authority for your train to pass the WSMB displaying two red lights and enter the work site.

Only the PICOP can give authority for your train to pass the WSMB displaying two yellow lights and leave a work site.

#### 9.6 During the movement

#### driver a) Making the movement

You must:

- make the movement at caution
- not exceed 25 mph (40 km/h) at any point in the journey when entering, making a movement within, or leaving the possession
- make any movement in a work site at no greater than 5 mph (10 km/h) unless you are given specific instructions by the ES or SWL
- be prepared to stop before reaching a handsignal that is being displayed.

You can use GSM-R radio to speak at any time about details of the movement being made.

You must also carry out the instructions shown in module S5 *Passing a signal at danger or an end of authority (EoA) without a movement authority (MA)* or TW7 *Wrong-direction movements* until your train is brought under the control of a signal after you leave the possession.

When vehicles are being loaded or unloaded, you must also carry out the instructions shown in module SS2 *Shunting*.



driver

#### b) Passing a signal or block marker within the possession

You must not pass a signal at danger or a block marker within the possession unless you are authorised to do so by the PICOP, or by the ES or SWL if it is inside a work site.

You can pass without authority a signal showing a proceed aspect or indication, but you must disregard the normal meaning of that signal.

#### c) Level crossings

You must not pass over any level crossing unless you have been given instructions to do so.

When you pass over the crossing, you must carry out the relevant instructions regarding level crossings shown in module S5 *Passing a signal at danger or an end of authority (EoA) without a movement authority (MA)* or TW7 *Wrong-direction movements*.

#### **9.7 When a possession is to be taken around one or more engineering trains**

#### a) Conditions

If the arrangements have been published, the signaller can grant possession to the PICOP when your train is standing at a specified signal, block marker or flexible train arrival point (FTAP) on the line on which the possession will be taken. driver



driver

driver

The specified signal, block marker or FTAP this applies to will be shown in the *Weekly Operating Notice* or *Engineering Notice*.

#### b) Proceeding to the specified signal, block marker or FTAP

Your movement to the specified signal, block marker or FTAP will be signalled under normal arrangements.

#### c) Arriving at the specified signal, block marker or FTAP

When your train arrives at the specified signal, block marker or FTAP the signaller will instruct you to make no further movement until you are authorised by the PICOP, ES or SWL, as appropriate.

# **9.8** When a possession is to be given up around engineering trains

#### a) Conditions

The PICOP can give up the possession with engineering trains standing at stop signals or block markers on the line under possession, as long as:

- the movement, after the possession is given up, will be in the normal signalled direction
- the movement is driven from the leading cab.

The PICOP will agree with the signaller which stop signal or block marker each train will stop at.



If the possession is to be given up around your train, one of the following will apply.

- If your train is standing at a signal or block marker within a work site, the ES or SWL will tell you that the work site is being given up, and you must not move your train.
- If your train is not within a work site, the PICOP will tell you the location and identity of the signal or block marker you must stop at.

#### b) Arriving at the specified signal or block marker

When your train arrives at the specified signal or block marker, or if it is already standing there, you must immediately contact the signaller. You must make no further movement with the train until the signaller tells you to proceed.

The PICOP will tell you, and anyone else on the train, that the line you are standing on must be considered as no longer under possession.

#### c) When the possession has been given up

When the possession has been given up, the signaller will tell you this and the conditions under which the train may proceed.

#### driver

# **10** Protection zones

The people responsible: driver, signaller

#### **10.1** Setting up the protection zone

#### signaller

You can only agree to set up a protection zone (PZ) if details have been published in the *Weekly Operating Notice or Engineering Notice*.

The ES or SWL will contact you and tell you the published PZ reference (if there is one).

You and the ES or SWL must agree the following.

- The line the PZ will be set up on.
- The locations the work will take place between.
- Whether the PZ will be set up around a train.
- The signal leading to the PZ that will be kept at danger.
- The exit signal beyond the PZ that will be kept at danger.
- The limits of the PZ, which must be from at least 400 metres (440 yards) beyond the protecting signal to at least 200 metres (200 yards) before reaching the exit signal.
- Which signals may need to be passed at danger within the PZ, and that the ES or SWL can pass your authorisation to do so on to the driver.
- What wrong-direction movements may be necessary towards the start of the PZ, and that the ES or SWL can pass your authorisation for the movement to the driver.
- What type of additional protection will be used.

If additional protection will be provided by disconnecting signalling equipment, you must agree the necessary disconnections with the signalling technician. You must tell the ES or SWL when the disconnections have been made. You can use a track circuit operating device (T-COD) as additional protection only if all the following conditions apply.

- The use of a T-COD at a particular location is authorised by the *Sectional Appendix.*
- The signalling equipment is working normally.
- The work will not affect the operation of the track circuit concerned.

When the protecting signal has been placed to danger, you must check that the track circuit concerned is showing clear. You can then give the ES or SWL permission to place the T-COD on the line or to activate it.

When the ES or SWL tells you that the T-COD has been placed on the line or activated, you must check that the track circuit is showing occupied.

When you are sure that the line concerned is correctly protected and the signal beyond the PZ has been placed to danger, you can grant the PZ to the ES or SWL.

You must record all the details in the Train Register.

## **10.2 Setting up a PZ around an engineering** train

If it has been published in the *Weekly Operating Notice or Engineering Notice*, you can allow the PZ to be set up around an engineering train that is standing at a signal or FTAP location specified in the notice. You must signal the train normally.

When the engineering train arrives at the specified signal or FTAP, you must tell the driver not to move the train again until told to by the ES or SWL after the PZ has been granted.

When the engineering train is at its specified signal or FTAP, you must tell the ES or SWL.

You must record the details in the Train Register.

#### signaller

signaller

If it has been published in the Weekly Operating Notice or

<b>10.3 Movements entering the PZ</b>
When you arrive at the specified signal or FTAP the signaller will tell you not to make any further movement until you are authorised by the ES or SWL
Your movement to the specified signal or FTAP will be signalled under normal arrangements.
<i>Engineering Notice</i> , the signaller can grant the PZ to an ES or SWL when your train is standing at a signal or FTAP on the line the PZ is to be set up on.

#### signaller

driver

The only trains that you can allow to enter the PZ are:

- the engineering train that is to work within the PZ
- an on-track machine that is to work as part of the same engineering work.

When the train arrives at the protecting signal, you must ask the ES or SWL:

- for permission to allow the train to enter the PZ
- how far the train can proceed, either to a signal or to an FTAP.

If the ES or SWL gives you permission to allow the train to enter the PZ, you must tell the driver:

- to pass the protecting signal at danger
- to proceed to the signal or FTAP
- to stay there and not make any further movement until authorised by the ES or SWL.

driver

If your engineering train or on-track machine is required to enter a PZ, your train will be stopped at the protecting signal.

<ul> <li>The signaller will tell you:</li> <li>that you are authorised to pass that signal at danger</li> <li>to proceed to a specified signal or FTAP</li> <li>to stay there and not make any further movement until you are authorised by the ES or SWL.</li> </ul>	driver
<b>10.4</b> Movements within the PZ	
The only person who can authorise you to make a movement within the PZ is the ES or SWL.	driver
When you have arrived at the signal or FTAP within the area of the PZ, the ES or SWL will tell you:	
<ul> <li>where you are required to move to</li> </ul>	
<ul> <li>to pass signals at danger when necessary</li> </ul>	
<ul> <li>not to make any further movement until the ES or SWL authorises you.</li> </ul>	
You can make any wrong-direction movements if necessary when the ES or SWL authorises you to.	
You must make sure that you do not make any wrong-direction movement that will bring the train within 400 metres (440 yards) of the protecting signal.	
When your train is to leave the PZ, the ES or SWL will tell you to:	
<ul> <li>move your train to the end of the PZ which is at least 200 metres (200 yards) before reaching the exit signal</li> </ul>	
<ul> <li>to stop there and contact the signaller.</li> </ul>	
You must make all movements within the PZ at caution, and carry out any other instructions given to you by the ES or SWL.	

section

#### signaller

#### **10.5** Leaving the PZ

The ES or SWL will tell you when an engineering train is ready to leave the PZ.

When the train arrives at the end of the PZ, the driver will contact you.

If you can give permission for the train to leave, you must, if you can:

- clear the exit signal
- signal the train normally.

You must make sure the line is clear and safe for the movement to proceed before you authorise the driver to proceed.

You must tell the driver:

- that the train is leaving the PZ
- to proceed normally
- to obey all signals.

If you cannot clear the exit signal for any reason, you must also authorise the driver to pass that signal at danger and to obey all others.

driver

- When your train is to leave the PZ, the ES or SWL will tell you to:
- move your train to the end of the PZ on the approach to the exit signal
- stop the train there and contact the signaller.

When you have permission to leave the PZ the signaller will tell you that:

- you are leaving the PZ
- you can proceed normally
- you must obey all signals.

If necessary, you will also be authorised to pass the exit signal at danger and obey all other signals.	driver
<b>10.6 Giving up the protection zone</b>	
<ul> <li>When the PZ is no longer needed, the ES or SWL will tell you that:</li> <li>the work has been completed</li> <li>all engineering trains have left the PZ</li> <li>all personnel are clear of the line</li> <li>additional protection can now be removed.</li> </ul>	signaller
If the PZ was protected by disconnecting signalling equipment, after the PZ has been given up, you must arrange for a signalling technician to make the necessary reconnections.	
You must check that the track circuit where the T-COD was used is showing clear. If it is not showing clear, you must check with the ES or SWL that the T-COD has been removed or deactivated.	
The ES and SWL will then confirm that the PZ has been given up.	
You must record the details in the Train Register.	



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### ERTMS Rule Book



Possession of an ERTMS running line for engineering work where lineside signals are not provided Issue 4



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# You will need this module if, on ERTMS lines, you carry out the duties of a:

- driver
- signaller.

Conventions used in the Rule Book	Example
A black line in the margin indicates a change to that rule and is shown when published in the module for the first time.	1
Green text in the margin indicates who is responsible for carrying out the rule.	driver
A white ${f i}$ in a blue box indicates that there is information provided at the bottom of the page.	0
A rule printed inside a red box is considered to be critical and is therefore emphasised in this way.	

#### Section

#### Possession details

- 1.1 Possession details to be published
- 1.2 Changing the possession limits
- 1.3 Changes to published details

### 2

3

#### Taking the possession

- 2.1 PICOP confirming the details
- 2.2 Taking the possession around one or more engineering trains
- 2.3 Arranging to block the line
- 2.4 When signalling protection has been provided
- 2.5 Possession procedure T3-A (using a track circuit operating device T-COD)
- 2.6 Possession procedure T3-D (disconnecting signalling equipment)
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- **2.8** Possession procedure T3-E (barring the route)
- 2.9 Granting the possession
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#### Arrangements at level crossings

### 4

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#### Change of personnel

- 6.1 Change of PICOP
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#### Section

7

#### Giving up the possession

- 7.1 Giving up the possession around an engineering train
- 7.2 Removing the protection
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8

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- 8.5 First train over the affected portion of line
- Ĉ

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- 9.1 Authority for movement of engineering trains
- 9.2 Reaching a clear understanding with others
- 9.3 Headlights and tail lamps
- 9.4 Indicating work sites within the possession
- 9.5 During the movement
- **9.6** When a possession is to be taken around one or more engineering trains
- **9.7** When a possession is to be given up around an engineering train



The person responsible: signaller

#### **1.1** Possession details to be published

Except when a possession must be taken in an urgent situation, details of the possession must be published in the *Weekly Operating Notice* or *Engineering Notice*.

#### **1.2 Changing the possession limits**

The limits of the possession may be shortened or lengthened as	signaller
long as:	

- the details of the changed limits, including the planned time, are published in the Weekly Operating Notice or Engineering Notice, or
- in exceptional circumstances, it is agreed by Operations Control.

You must record the details in the Train Register.

#### **1.3 Changes to published details**

Operations Control will let you and the person in charge of the signaller possession (PICOP) know if it is necessary for any of the published details to be changed.



# **2** Taking the possession

#### The person responsible: signaller

#### **2.1 PICOP** confirming the details

#### signaller

The PICOP will contact the signaller who controls the block marker leading to the section of line that is to be taken under possession and will state the published possession reference if there is one.

If you are that signaller, you and the PICOP must agree:

- · the line that will be taken under possession
- · the possession procedure to be used
- · whether the possession is to be taken around one or more trains
- the locations between which the possession will be taken including the protecting block markers or points
- the details of any points or crossings that may be used for trains outside the possession
- · the position that points within the possession must be placed in
- the arrangements to be applied for each level crossing within the possession
- the exact location of the first work-site marker board (WSMB) in the normal direction of travel
- the exact location of the last WSMB in the normal direction of travel
- the time the possession is to be taken and the time it will be given up.



## 2.2 Taking the possession around one or more engineering trains

When the possession is to be taken or lengthened around an engineering train, you must signal the train concerned normally to the block marker specified in the notices.

When the engineering train arrives at the specified block marker, you must tell the driver not to move the engineering train again until given instructions by the PICOP, engineering supervisor (ES) or safe work leader (SWL) after the possession has been granted.

When every engineering train is at its specified block marker you must tell the PICOP.

You must record the details in the Train Register.

#### 2.3 Arranging to block the line

#### Protecting the line with block markers

Each entrance to the section of line on which the possession is taken must be protected by a block marker in the normal direction of travel.

On a single or bi-directional line, each exit from the section of line on which the possession is taken must be protected by a block marker.

On a line that is not single or bi-directional, each exit from the line on which a possession is taken must be protected by a block marker in the normal direction of travel.

The distance between the block marker or points used to protect the entrance to the possession and the first WSMB must not be less than 200 metres.

The block marker immediately beyond the last WSMB must be no closer than 200 metres. This must be the point where normal working starts for train movements in the right direction.

signaller

#### signaller



#### **Closing the route**

#### signaller

When the section of line concerned is clear other than any trains at a stand, as shown in section 2.2 or when the possession is to be taken for the purpose of removing derailed vehicles or any other obstruction, the following must apply.

You must make sure the routes are closed from the block markers you have agreed will protect the possession.

You must also make sure all points are in the position necessary to protect the possession.

You must record the details in the Train Register.

You must also close:

- · all routes within the possession
- · all other routes which lead to or across the possession.

You must then ask a competent person, if present in the signal box, to check that this has been done correctly.

#### If another signaller is involved

If any protecting block markers are controlled by another signaller, you must get confirmation from that signaller that the routes from the protecting block markers have been closed and will be kept closed until the possession is given up.

If any signallers at other signal boxes are involved with the possession arrangements, you must:

- tell them what the possession arrangements are
- · get their assurance that they will keep to these arrangements.



If you are the signaller at another signal box and you are told about the possession arrangements, you must record in the Train Register: signaller

- which line is blocked
- · the limits of the possession
- the block markers at which you must keep the routes closed to protect the possession
- the points you must operate to protect the possession
- the position that points within the possession must be placed in.

#### **Telling the PICOP**

When all the routes have been closed to protect the possession, you must tell the PICOP who will then complete section 1 of the Possession Arrangements Form (RT3198 ERTMS). The PICOP will then read the details back to you.

When you are satisfied that all the details on the PICOP's RT3198 ERTMS form are correct, you must tell the PICOP that the possession protection procedure can be carried out.

If any unworked points need to be secured, the PICOP is responsible for arranging for this to be done.



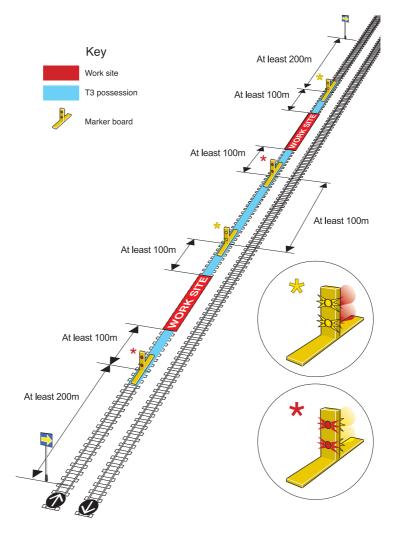


Diagram T3.1 ERTMS Protecting block markers



# 2.4 When signalling protection has been provided

When protection by block markers and points has been provided as shown in section 2.3 of this module, one of the following possession procedures must be carried out before the possession can be granted.

The only exception to this is possession procedure T3-A. This procedure must be carried out after the possession is granted.

You must record in the Train Register which possession procedure has been used.

#### **2.5 Possession procedure T3-A (using a track circuit operating device T-COD)**

You may use procedure T3-A only if all of the following apply.

- Use of a T-COD is authorised at the location concerned.
- The signalling equipment is working normally at the time the T-COD is to be placed on the line.
- The work within the possession will not affect the correct operation of the track circuit concerned.

The PICOP will arrange for the T-COD to be placed after the possession has been granted.

Before giving the PICOP permission to place the T-COD, you must make sure the track circuit concerned is showing clear. You must tell the PICOP when the track circuit concerned shows occupied. signaller



#### **2.6 Possession procedure T3-D** (disconnecting signalling equipment)

#### a) When this procedure can be used

### signaller You may use procedure T3-D only if it is authorised at the particular location.

#### b) Arranging for a disconnection to be made

When you have told the PICOP all routes leading towards the possession have been closed, as shown in section 2.3 of this module, the PICOP will arrange for the signalling controls of these routes to be disconnected.

The PICOP will tell you when this has been done.

#### 2.7 Possession procedure T3-P (PICOP or PICOP's agent going to the signal box)

#### a) When this procedure may be used

signaller You may use procedure T3-P only if it is authorised at the particular location.

#### b) PICOP going to the signal box

When you have told the PICOP all routes protecting the entrances and exits from the possession have been closed as shown in section 2.3 of this module, the PICOP will check that this has been done and that the possession is being correctly protected.

If the PICOP cannot personally attend the signal box that controls the routes protecting the entrances to and exits from the possession, the PICOP will arrange for a PICOP's agent to be in the controlling signal box to check that the correct routes have been closed.

If possession procedure T3-P is being used, you must not grant the possession until the PICOP or the PICOP's agent is present and the PICOP is satisfied that the possession is correctly protected.



# **2.8** Possession procedure T3-E (barring the route)

Possession procedure T3-E **must** always be used except when it is not possible to do so and one of the alternative procedures has been agreed at the planning meeting.

In exceptional circumstances, this may be agreed by Operations Control.

When you have told the PICOP all routes leading towards the possession have been closed as shown in section 2.3 of this module, the PICOP will arrange for the signalling controls of these routes to be barred.

The PICOP will tell you when this has been done.

#### 2.9 Granting the possession

You must only grant possession when:

- signalling protection has been provided
- any additional protection required under possession procedure T3-D or T3-E has been carried out and the PICOP has recorded the details in section 2 of the Possession Arrangements Form (RT 3198 ERTMS)
- the necessary entries have been made in the Train Register.

When you are sure all these requirements have been carried out, you may tell the PICOP the possession is granted.

signaller

#### signaller



# 2.10 Changing the limits of the possession after the possession has been granted

# signaller If it is necessary to set up another work site on the approach to the first WSMB or beyond the last WSMB, the PICOP will first ask your permission to do so.

The PICOP must tell you the exact location (mileage or kilometres and metres) of the new WSMB before allowing any further train movements.

You must not give the PICOP permission to set up another work site until any movement already authorised has passed clear of the area concerned.

You must record the details of the new WSMB in the Train Register.

If possession procedure T3-A is being used, the PICOP must make sure a T-COD is placed on the line at the same time and at the same place as the new first WSMB, as shown in section 2.5.

The PICOP will also, if necessary, arrange to remove the T-COD placed at the previous first WSMB.

# 2.11 Carrying out signalling work in the possession

# signaller You must not allow signalling work to be carried out if it would affect the route barring or the functioning of the balises protecting the exits from a possession.



# **3** Arrangements at level crossings

The person responsible: signaller

The PICOP must not allow any train or OTP movements to take place, or any work to be carried out, that will affect the operation of any level crossing until the necessary arrangements have been put in place for that level crossing. signaller

You must reach a clear understanding with the PICOP about the arrangements that will apply at each level crossing.

You must record in the Train Register the arrangements that are applied for each level crossing within the possession.

As well as the instructions shown in module TS9 *Level crossings* - *signallers' regulations*, you must:

- tell any crossing keeper who will be affected by the possession arrangements
- tell the PICOP when an attendant is appointed or withdrawn at a level crossing.





#### 4.1 Passing the protecting block marker

signaller You must not set any route leading to the possession.

You must not allow any train other than an ERTMS-fitted train to make a movement from either end towards the first or last WSMB.

When an engineering train is to enter a possession, you must dictate written order No.1 (RTWO01) and authorise the driver to pass the block marker and proceed to the first WSMB.

You must get permission from the PICOP before doing this.

#### 4.2 Propelling

# signaller You must not allow any of the following movements to be propelled unless the details are published in the *Weekly Operating Notice* or *Engineering Notice*.

- · Movements entering the possession.
- Movements leaving the possession.

If it is necessary to propel when details have not been published, you must get authority from Operations Control before you can allow any of the above movements to be propelled.

## 4.3 Entering the possession at the first WSMB

signaller Before you give the driver permission to proceed towards the first WSMB, you must make sure:

- · the PICOP has given you permission, and
- you have not authorised a conflicting movement.

When the engineering train has entered the possession, the PICOP **signaller** will tell you when the first WSMB has been replaced.

#### 4.4 Entering a possession at an intermediate point

Before you give the driver permission to proceed from the signaller protecting block marker towards the possession, you must make sure:

- the PICOP has given you permission
- the PICOP has positioned someone at the intermediate point to give instructions to the driver
- you have not authorised a conflicting movement to take place.

You must tell the driver to stop and get instructions from the person at the intermediate point.

The PICOP will tell you when the engineering train has entered the possession and is clear of the points or crossings at the intermediate point.

You must then return the points to the agreed position.

#### 4.5 Entering the possession from an adjacent siding under possession

signaller

If a movement is to enter the possession from an adjacent siding under possession, you must first agree with the PICOP and the person in charge of the siding possession (PICOS) how this is to be done.



#### 4.6 Leaving the possession

#### signaller

You must not allow any engineering train other than an ERTMS-fitted engineering train to make a movement between the last WSMB and the block marker protecting the exit from the possession.

When the PICOP tells you that an engineering train is ready to leave the possession, you must reach a clear understanding with the PICOP about the instructions to give the driver about the movement:

- beyond the WSMB out of the possession, or
- through points or crossings that are protecting the possession at an intermediate point.

You must make sure that the line is clear throughout to the next block marker and safe for the movement to proceed before you give the PICOP instructions to authorise the driver to pass beyond the WSMB and out of the possession.

To protect the possession, after the movement has left it, you must:

- restore to their original position all points that you have operated for the movement
- · close the route protecting the exit from the possession.

## 4.7 Leaving the possession directly into a siding under possession

signaller If a movement is to leave the possession directly into an adjacent siding under possession, you must first agree with the PICOP and the PICOS how this is to be done.



# **5** Movements over level crossings

The person responsible: signaller

#### 5.1 When these instructions apply

You must apply the instructions shown in sections 5.2 to 5.11 as appropriate when authorising a movement to enter or leave the possession.

signaller

Where the ES, PICOP or SWL is responsible for authorising the movement, the following will apply.

#### AHBC

The ES, PICOP or SWL will get your permission before allowing an engineering train to pass over an AHBC that is not being locally controlled.

You must not give this permission if you are aware of any reason why the train must not pass over the level crossing.

OTP will not be allowed to pass over an AHBC level crossing unless it is being locally controlled.

#### CCTV, OD or RC

If the crossing is not being locally controlled, the ES, PICOP or SWL will get your confirmation that the barriers have been lowered and the crossing is clear before they authorise the movement to pass over the level crossing.

#### 5.2 Before making a movement

Before the movement takes place you must give details of the movement to those personnel operating:

signaller

- any CCTV, OD or RC level crossing
- other level crossing, if possible.



#### **5.3 AHBC locally controlled**

signaller You must tell the driver that the movement must not pass over the level crossing unless the crossing attendant is displaying a green handsignal.

#### 5.4 AHBC that is not locally controlled

signaller Only an engineering train that is to pass normally over the level crossing in a direction that has controls may be allowed to proceed over the level crossing.

You must tell the driver not to stop specially before passing over the level crossing.

#### 5.5 CCTV, OD or RC locally controlled

signaller You must tell the driver that the movement must not pass over the level crossing unless the crossing attendant is displaying a green handsignal.

## 5.6 CCTV, OD or RC that is not locally controlled

signaller You must not allow any movement in the wrong direction to pass over the level crossing.

For other movements, you must not authorise the driver to pass the block marker protecting the level crossing until the barriers have been lowered for the movement.

You must then tell the driver not to stop specially at the level crossing.



signaller

#### 5.7 AOCL or ABCL not switched off

If the level crossing has not been switched off as shown in module TS9 *Level Crossings - signallers' regulations*, regulation 4.1, the following must apply.

You must instruct the driver of a train that is to pass over the level crossing normally, to proceed over the crossing only when it is safe to do so.

For any train movements not passing normally over the level crossing, you must not allow the movement to take place unless:

- · the level crossing has been closed to road traffic, or
- a competent person is positioned at the level crossing and has stopped road traffic by displaying a red handsignal on both sides of the level crossing.

You must instruct the driver to stop at the level crossing, sound the horn and then pass over the level crossing only when it is safe to do so.

### **5.8 AOCL or ABCL that has been switched off**

If the level crossing has been switched off as shown in module TS9 *Level crossings - signallers' regulations*, regulation 4.1, the following must apply.

signaller

#### **During daylight**

You must instruct the driver of a train that is to pass over the level crossing to stop the train at the level crossing, sound the horn and then pass over the level crossing only it is safe to do so.



#### During darkness

### signaller The movement of a train over the level crossing must not take place unless:

- · the level crossing has been closed to road traffic, or
- a competent person is positioned at the level crossing and has stopped road traffic by displaying a red handsignal on both sides of the level crossing.

You must instruct the driver to stop at the level crossing, sound the horn and then pass over the level crossing only when it is safe to do so.

#### **5.9 Manned level crossing**

signaller You must instruct the driver to pass over the level crossing only if the level crossing barriers or gates are closed to road traffic.

If it is a traincrew-operated (TMO) level crossing, you must make sure that a competent person is available to operate the level crossing before authorising the driver to proceed.

# 5.10 Crossing with red and green warning lights (R/G)

signaller You must instruct the driver to stop at the level crossing, sound the horn and then pass over the level crossing only when it is safe to do so.

## 5.11 Barrow or foot crossing with white light indicators

signaller You must instruct the driver to pass over the level crossing only when it is safe to do so.



The person responsible: signaller

#### 6.1 Change of PICOP

The PICOP will tell you the name of the new PICOP if there is a signaller change. You must record the details in the Train Register.

#### 6.2 Change of signaller

If you are the new signaller taking duty you must countersign the signaller entries in the Train Register.



# **7** Giving up the possession

The person responsible: signaller

# 7.1 Giving up the possession around an engineering train

#### signaller

The PICOP may give up the possession with an engineering train standing at a block marker on the line under possession, as long as all of the following apply.

- The train is standing at a location where the train detection is by means of track circuits and not by axle counters.
- The movement, after the possession is given up, will be in the normal signalled direction and will be driven from the leading cab.
- You have agreed with the PICOP the block marker to be used.

When the train arrives at the agreed block marker, you must:

- tell the driver to make no further movement until you have given verbal permission for the engineering train to proceed, then
- tell the PICOP the train has arrived at the agreed block marker and will not be moved.

You must not start the arrangements to give up the possession until the engineering train has arrived at the agreed block marker.

#### 7.2 Removing the protection

signaller When the possession is no longer needed the PICOP will:

- if single line working is in operation, tell the pilotman that the possession is being given up
- arrange to release any unworked points or train-operated points that have been secured
- arrange for any disconnection made under possession procedure T3-D to be reconnected or for any route barring carried out under possession procedure T3-E to be restored
- arrange for the first and last WSMBs to be removed.



#### 7.3 Signaller being told when the possession is no longer needed

The PICOP will tell you that the line is clear and safe for trains to run on (or if section 7.1 applies, clear and safe other than the train standing at the agreed block marker) when:

- any unworked points or train-operated points that had been secured have been released
- any disconnection made under possession procedure T3-D has been reconnected or any route-barring carried out under possession procedure T3-E has been restored
- the first and last WSMBs have been removed.

#### 7.4 Confirming the possession is given up

You must record the details in the Train Register. You must read the signaller entry back to the PICOP.

When the entry has been made in the Train Register and if the PICOP agrees with the entry, this is confirmation that the possession has been given.

signaller



# 8 Resuming normal working

The person responsible: signaller

### 8.1 Restoring the signalling to normal working

signaller When the PICOP has given up the possession, you must arrange for all routes which have been closed to be restored to normal working.

### 8.2 Telling personnel the possession is given up

#### signaller

You must tell the following that the possession has been given up.
 Any other signaller concerned.

• Any crossing keeper concerned.

If you are the signaller at an adjacent signal box, you must record the details in the Train Register.

#### 8.3 AHBC, CCTV, OD or RC level crossings

signaller You must arrange for normal working to be restored at any AHBC, CCTV, OD or RC level crossing at which an attendant is appointed.

### 8.4 Possession given up around an engineering train

signaller If the possession was given up with an engineering train standing at a block marker, you must tell the driver of that train that the possession has been given up and the conditions under which the train may proceed.



### 8.5 First train over the affected portion of line

You must specially watch the operation of the track circuits during signaller the passage of the first train over the line that was affected by the possession.

You must not allow a second train to pass over the line that was affected by the possession unless there is a route setting position (RSP) at which the route is closed between the first and second trains.

# **9** Driver's duties

The person responsible: driver

# 9.1 Authority for movement of engineering trains

driver

You must make movements only on the authority of the following personnel.

#### a) Signaller

The signaller will **personally** authorise you to make a movement that is required to:

- · proceed from either end towards the first WSMB
- enter the possession at an intermediate point where your train will be met.

The signaller will give the PICOP the necessary instructions to pass on to you when you are to make a movement that must:

- pass through points or crossings that are protecting the possession at an intermediate point when leaving the possession
- proceed beyond the last WSMB when leaving the possession.

All movements described in section 9.1 a) are restricted to engineering trains fitted with ERTMS and operating in SR mode.

Any engineering train not fitted with ERTMS, or with ERTMS not working, must be operated by a traction unit that is fitted with ERTMS.



driver

#### b) PICOP

The PICOP (or competent person on the PICOP's behalf) will authorise you to make a movement that is required to:

- pass through points or crossings that are protecting the possession at an intermediate point when entering the possession
- enter or leave the possession from or to a siding that is also under possession
- pass the WSMB at the exit from a work site; this will be showing two yellow flashing lights
- move between work sites
- proceed beyond the last WSMB after passing on the signaller's instructions when leaving the possession.

You do not need a written order to leave a possession at a WSMB or at an intermediate point. However, you must be prepared to stop at the next block marker unless an MA is received.

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

Within the protection of the first and last WSMBs, all movements may be made by any engineering train or OTP.

#### c) ES or SWL

The ES or SWL (or a competent person on the ES's or SWL's behalf) will authorise you to make a movement:

- past a WSMB into a work site; this will be showing two flashing red lights
- · within a work site.

The ES can permit a person to travel in your cab to give you instructions about the working of your train while loading or unloading.

The ES will wear an armlet on the left arm, or a badge on the upper body, with 'ENGINEERING SUPERVISOR' shown in blue letters on a yellow background.

#### driver



### **driver** The SWL will wear an armlet on the left arm, or a badge on the upper body, with SWL in blue letters on a yellow background.

# 9.2 Reaching a clear understanding with others

### driver You must reach a clear understanding with the person authorising the movement as to:

- what you must do
- how far the movement is to proceed.

#### 9.3 Headlights and tail lamps

- driver If the train is detained between two work sites, you must make sure that:
  - · a red light is showing at both ends of the train
  - · the headlights are switched off.

### 9.4 Indicating work sites within the possession

#### driver

A WSMB will be placed in the 'four-foot' at each end of the work site. See diagram T3.1 ERTMS.

The WSMB for one work site will be no closer than 100 metres from the WSMB of another work site.

WSMBs are not needed if there will be no engineering train or OTP movements within the possession.

Only the ES can give authority for your train to pass the WSMB displaying two red lights and enter the work site.

Only the PICOP can give authority for your train to pass the WSMB displaying two yellow lights and leave a work site.



#### **9.5 During the movement**

#### a) Making the movement

You must make the movement at caution and not exceed 40 km/h (25 mph) at any point in the journey when entering, making a movement within, or leaving the possession.

The PICOP, when authorising the movement between work sites, will tell you the location of any permissible or temporary speed restriction lower than 40 km/h (25 mph) on the portion of line concerned and you must not exceed these speeds.

You must:

- make any movement in a work site at not more than 10 km/h (5 mph) unless you are given specific instructions by the ES or SWL on the maximum speed to be applied
- be prepared to stop before reaching a handsignal that is being displayed.

You can use GSM-R radio to speak at any time about details of the movement being made.

You must also carry out the instructions shown in module S5 Passing a signal at danger or an end of authority (EoA) without a movement authority (MA) or TW7 Wrong-direction movements.

When vehicles are being loaded or unloaded, you must also carry out the instructions shown in module SS2 *Shunting.* 

#### b) Passing a block marker within the possession

You must not pass a block marker within the possession unless you are authorised to do so by the PICOP or by the ES or SWL if it is within a work site. In this case you do not need a written order. driver



#### c) Level crossings

driver You must not pass over any level crossing unless you have been instructed to do so.

When you pass over the crossing, you must carry out the relevant instructions regarding level crossings shown in module S5 *Passing a signal at danger or an end of authority (EoA) without a movement authority (MA)* or TW7 *Wrong-direction movements.* 

## 9.6 When a possession is to be taken around one or more engineering trains

#### a) Conditions

driver If the arrangements have been published, the signaller can grant a possession to the PICOP when your train is standing at a block marker on the line on which the possession is to be taken.

The block marker this applies to will be shown in the *Weekly Operating Notice* or *Engineering Notice*.

#### b) Proceeding to the specified block marker

Your movement to the specified block marker will be signalled under normal arrangements.

#### c) Arriving at the specified block marker

When your train arrives at the specified block marker, the signaller will instruct you to make no further movement until you are authorised by the PICOP, ES or SWL, as appropriate.



# 9.7 When a possession is to be given up around an engineering train

#### a) Conditions

The PICOP can give up the possession with one engineering train standing at a specified block marker on the line under possession as long as:

driver

- the movement, after the possession is given up, will be in the normal signalled direction, and
- the movement must be driven from the leading cab.

If the possession is to be given up around your train, the PICOP will tell you the location and identity of the block marker you must stop at.

This block marker will be agreed between the PICOP and the signaller and must not be within a work site.

The PICOP will also tell you and anyone else on the train, that the line on which you are standing must be considered as no longer under possession.

#### b) Arriving at the block marker

When your train arrives at the block marker, you must immediately contact the signaller. You must make no further movement with the train until the signaller tells you to proceed.

#### c) When the possession has been given up

When the possession has been given up, the signaller will tell you this and the conditions under which the train may proceed.

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Rule Book

Handbook

General duties of a controller of site safety (COSS)

#### Issue 7



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#### 1 Competence and identification

To act as a controller of site safety (COSS), you must have with you a valid COSS certificate of competence issued by your employer.

You must wear a COSS armlet on the left arm or a COSS badge on the upper chest when you are carrying out the duties of a COSS.

You must not wear the COSS armlet or badge at any other time.

The COSS armlet or badge must have COSS in white letters on a blue background.

#### 2 Work that you can do without the line being blocked

### 2.1 Work that does not affect the safety of the line

If the work will not affect the safety of the line and nobody will come within 2 metres (6 feet 6 inches) of the nearest running rail of an open line, or 1.25 metres (4 feet) if a rigid or tensioned barrier or permanent fence is used, you may carry out the work without blocking that line.

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### **2.2 Patrolling, examining or inspecting when** alone

You can patrol, examine or inspect an open line when you are alone if you are sure you will be able to look up often enough (at least every 5 seconds) to see any train approaching and:

- you will be able to reach a position of safety at least 10 seconds before any approaching train arrives, and
- you can reach that position of safety without crossing any open line other than the one you are on.

You must not rely on these arrangements during darkness, poor visibility or when in a tunnel.

#### **2.3 Crossing the line procedure**

You can use this procedure if you are walking alone, or with a group that is walking and need to:

- cross no more than four running lines
- walk past a structure that restricts clearance from a running line.

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You can only use this procedure if all of the following apply.

- The location is one that has been approved for the use of the procedure, and you and signallers have been given details about the location and the conditions for using it.
- You are competent in using the procedure and your name has been given to signallers.
- You are not using the procedure during the time you or any of the group are carrying out any work, including patrolling or inspecting, only when walking.
- You, or any of the group, must not carry anything that will affect your ability to walk safely.

You must contact the signaller using a mobile phone.

You must tell the signaller:

- where you want to cross the line or pass by a structure
- your name and employer
- how long it will take to cross the line or pass by the structure.

When the signaller tells you that the group can cross the line or pass by a structure you must:

- tell the group that they can cross the line or pass by a structure
- immediately cross the line or pass by the structure
- stay on the phone to the signaller until everyone has crossed the line or passed by the structure
- make sure that everyone is in a position of safety.

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You must then tell the signaller that the group is clear of any line.

#### 3 Work that needs the line to be blocked

#### **3.1** Work group at risk from trains

If the activity could be carried out using lookout or equipment warning but neither is available, the line concerned must be blocked or another safe system used. Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020

#### 3.2 Work affecting the safety of the line

Unless specifically allowed in your company instructions, you must consider the following as types of work that affect the safety of the line.

- Carrying heavy or awkward equipment or materials across or along the line.
- Work that will affect the condition of the track.
- Digging a hole or stacking material or equipment close to the line or near the edge of a platform.
- Placing a hand trolley on the line.
- Using plant within 2 metres (6 feet 6 inches) of the line.
- Using a road vehicle within 2 metres (6 feet 6 inches) of the line.
- Using on-track plant (OTP) that will foul the line.
- Using a crane or other lifting equipment that will foul the line.
- Attaching anything to a railway structure, such as a bridge, a station roof or building, a signal post or gantry, or electrical equipment.
- Using a ladder, unless secured so that it cannot fall towards the line.
- Using scaffolding or a climbing tower, unless secured so that it cannot fall or move towards the line.
- Felling or trimming trees.

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#### **3.3 Before starting work**

You must not start or allow your group to start work as shown in section 3.1 or 3.2 unless the line concerned is blocked by one of the following methods.

- You have blocked the line as shown in handbook 8 or the line has been blocked by a protection controller (PC) and you have agreed a safe system of work with that PC as shown in handbook 8.
- Your site of work is within an engineering supervisor's (ES) or safe work leader's (SWL) work site and you have agreed the safe system of work with the ES or SWL as shown in handbook 9.
- Your site of work is within an engineering supervisor's (ES) or safe work leader's (SWL) protection zone and you have agreed the safe system of work with the ES or SWL, as shown in handbook 12.
- Your site of work is within a siding and you have agreed a safe system of work with the person in charge of the siding possession (PICOS) as shown in handbook 9.

#### 3.4 Placing possession protection

You may place detonator protection for a possession as long as the PICOP has assured you that the protecting signal for the line concerned has been placed to danger or the route has been closed.

You may place work-site marker boards for a work site within a possession as long as the ES or SWL has given you permission to do so.

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#### 4 Working with a group

#### 4.1 Remaining with your group

You must stay with your group so that you are able to personally observe and advise everyone until:

- work is completed and your group is no longer on or near the line, or
- you are replaced by another COSS or an SWL.

#### 4.2 Safe systems of work

The following are the safe systems of work available.

**Safeguarded -** where every line at the site of work has been blocked to normal train movements.

**Fenced -** where there is a suitable barrier between the site of work and any line open to the normal movement of trains.

**Separated -** where there is a distance of at least 2 metres (6 feet 6 inches) between the nearest running rail of an open line and the site of work, and a site warden has been appointed.

There must be an identifiable limit to the site of work.

If it is only you and one other person in the group, you do not need to appoint a site warden. However, you must make sure neither of you go any closer than 2 metres (6 feet 6 inches) to the nearest running rail of the open line.

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**Equipment warning -** where there is equipment provided to give enough warning to allow everyone involved to reach a position of safety before any train arrives at the site of work.

**Lookout warning -** where one or more lookouts are positioned to provide enough warning to allow everyone involved to reach a position of safety before any train arrives at the site of work.

#### **4.3 Setting up the safe system of work**

There must be at least 3 metres (10 feet) between any open line and any member of your group.

Where this is not possible, the instructions shown in 4.4, 4.5, 4.6, 4.7 or 4.8 must be applied.

Before allowing your group to walk to the site of work or to start work, you must have:

- set up the safe system of work so that no body in the group will be put in danger by a passing train
- tested the safe system of work to make sure it is adequate
- briefed everyone in the group about the safe system of work.

#### 4.4 Blocking the line

You may use a blocked line as part of the safe system of work.

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You must only consider a line to be blocked if at least one of the following applies.

- You have blocked the line or lines concerned as shown in handbook 8.
- The line or lines concerned have been blocked by a PC and you have agreed a safe system of work with that PC as shown in handbook 8.
- Your site of work is within an ES or SWL's work site and you have agreed the safe system of work with the ES or SWL, as shown in handbook 9 or handbook 9 ERTMS.
- Your site of work is within an ES or SWL's protection zone and you have agreed the safe system of work with the ES or SWL, as shown in handbook 12.
- Your site of work is within a siding and you have agreed the safe system of work with the PICOS, as shown in handbook 9 or handbook 9 ERTMS.

When all lines are blocked, you may consider your safe system of work as safeguarded.

### 4.5 Safe system of work using a safety barrier (fenced)

If there is a safety barrier that is approved by the infrastructure manager between you and any open line, you may work as follows.

#### Rigid or tensioned barrier or permanent fence

As long as the barrier or fence is at least 1.25 metres (4 feet) from the nearest running rail of the open line, you may allow work to start on the safe side of the fence.

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**Fence made of barricade tape or plastic netting** If the fence is placed at 1.25 metres (4 feet) from the nearest running rail of the open line and the maximum speed on the open line is no greater than 40 mph (65 km/h), you may work on the safe side of the fence.

If the fence is at least 2 metres (6 feet 6 inches) from the nearest running rail of the open line, you may work on the safe side of the fence. There is no restriction on the speed of trains on the open line.

**Note:** A rigid or tensioned barrier placed at 0.9 metres (3 feet) from an open line along with automatic track warning system (ATWS) is sometimes used when on-track plant is being used close to an open line. You must not use a barrier at this distance as part of your safe system of work.

#### 4.6 Safe system of work (separated)

You may set up a safe system of work using one or more site wardens as long as all of the following conditions apply.

- There will be at least 2 metres (6 feet 6 inches) between the site of work (the safe area) and the nearest running rail of an open line.
- You appoint one or more site wardens to watch all members of the group to make sure no one is allowed to go outside the safe area.
- You and each site warden can clearly identify the limits of the safe area.
- If you act as a site warden, you must take no part in the actual work.

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#### Before starting work

You must check that each site warden is competent and is correctly wearing a site warden armlet or badge.

You must point out the limits of the safe area and who will be the site wardens to each member of the group.

You must agree with each site warden and each member of the group what warning the site warden is to give if anyone attempts to move out of the safe area.

You must position each site warden so that the limits of the safe area and everyone in the group can clearly be seen and the warning will be heard by everyone in the group.

You must test the warning before allowing work to start.

You must make sure nobody distracts the site warden.

**Note:** If it is only you and one other person in the group, you do not need to appoint a site warden, but you must make sure neither of you go any closer than 2 metres (6 feet 6 inches) to the nearest running rail of the open line.

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### 4.7 Safe system of work using ATWS, TOWS or LOWS (equipment warning)

If there is an automatic track warning system (ATWS), train operated warning system (TOWS) or lookout operated warning system (LOWS), you can use this equipment to give warning of approaching trains as long as all of the following conditions apply.

- You or a member of your group are competent to use the equipment at that location.
- The equipment will provide an adequate warning of all approaching trains on the line or lines concerned.
- You and all members of the group will be able to stop work and reach the position of safety at least 10 seconds before the train arrives.

You must test the warning before allowing work to start.

If the equipment is already in use when you arrive, you must reach a clear understanding with the other person using it so that you each know what is happening.

When leaving the site of work, you must agree with anyone else using the equipment whether or not to leave the equipment in use.

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### 4.8 Safe system of work using lookouts (lookout warning)

#### Conditions

You may set up a safe system of work using one or more lookouts as long as all of the following conditions apply.

- There is no realistic alternative safe system of work that can be used.
- Using lookouts at that location is not prohibited.
- You do not act as a lookout.
- There will be no need for anyone to cross more than two open lines to reach the position of safety.
- The group will not need to walk more than 25 metres (approximately 25 yards) along the line to reach the position of safety.
- The warning time needed is not more than 45 seconds.
- The warning time will be enough for everyone in the group to stop work and to then reach the position of safety at least 10 seconds before any train arrives (this is called the required warning time).

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#### Arranging lookouts

You must make sure each lookout:

- knows the direction and lines that need to be watched for approaching trains
- is not distracted
- takes no part in the actual work
- has no other duties.

You must check that each lookout is competent and is correctly wearing a lookout armlet or badge.

You must position site lookouts so that:

- any train approaching can clearly be seen
- the required warning time is available (use distant and intermediate lookouts if necessary)
- the warning will be received by everyone in the group (if necessary, use more than one site lookout).

On single or bi-directional lines, or when single line working is taking place, you must make sure enough warning is given for both directions.

You must test the warning before allowing work to start.

#### Deciding what is an approaching train

In deciding which lines the lookout needs to watch for approaching trains, you must consider all of the following.

a) A line on which the group is walking or working.

**b)** A line adjacent to a) that could also put anyone in the group in danger.

Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020

c) A line that has to be crossed to reach the position of safety.

**d)** A line on which a train could be routed towards a), b), or c) from any direction.

**e)** A line where, at the required sighting distance, it is not possible to tell whether a train is on a line shown in a) to d) above.

**Note:** A lookout is not needed for an adjacent line, as shown in b) above, if a train approaching on the adjacent line cannot put the group in danger, for example where the group will not pass beyond the six-foot rail.

## Using distant and intermediate lookouts

If the site lookout cannot achieve enough sighting to provide the required warning time, you may appoint distant and intermediate lookouts as long as the following conditions apply.

- It is daylight with clear visibility.
- Not more than one distant and one intermediate lookout is used in any direction.

You must make sure that any distant or intermediate lookouts are located in a position of safety.

However, if the site of work is mobile and the intermediate and distant lookouts will walk while carrying out their duties, they may leave the position of safety when they need to pass an obstruction.

You must make sure the distant lookout or intermediate lookout communicate correctly with each site lookout by using the blue and white chequered flags.

#### **Method of warning used by a site lookout** You must choose the warning to suit the type of work and the location from:

- a horn
- a whistle
- a touch.

You may, if necessary, also get the lookout to shout.

## When a site lookout gives the warning

You must make sure everyone goes to the position of safety when the warning is given.

If someone does not immediately stop work and go to the position of safety, the lookout will give an urgent warning.

Make sure tools and equipment are taken to the position of safety, unless they are too heavy to be moved by the slipstream of a passing train and are left clear of the line.

#### Working out the required warning time

You must consider how long it will take to stop work and place any tools or equipment down and how long it will take to get to the position of safety.

You may take into account an emergency speed restriction (ESR) or temporary speed restriction (TSR) as long as it has been imposed for the work.

Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020 You must add the following:

- 5 seconds for each additional direction the site lookout will be looking
- 5 seconds for each distant lookout
- 5 seconds for each intermediate lookout.

You must then add 10 seconds to be in the position of safety before the train arrives.

Use the sighting distance chart, shown at the back of this handbook, to work out the required sighting distance needed for your safe system of work.

You must not use lookouts as your safe system if:

- they cannot achieve the required sighting distance
- the warning time needed is more than 45 seconds
- the number of lookouts needed is not available.

# Using lookouts during darkness, poor visibility or when in or near a tunnel

You may use lookouts during darkness, poor visibility or when in or near a tunnel as long as:

- the speed of approaching trains is no greater than 20 mph (30 km/h)
- the site lookout has enough sighting distance available
- you do not need to use a distant lookout or an intermediate lookout.

Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020

## 5 COSS briefing

Before the group goes on or near the line, you must make sure each member fully understands the safe system of work.

You will need to tell the group:

- the nature of the work
- the location of the work
- which lines have been blocked and which are still open
- if they are using a safety barrier, not to pass beyond the barrier and not to lean or place tools on it
- if they are using site wardens, who the site wardens are and the limits of the safe area
- if they are using equipment warning, the method of warning and the position of safety
- if they are using lookouts, who the site lookouts are, the method of warning and the position of safety.

You must make sure each member of the group confirms they understand the safe system of work by signing your safe-work briefing form (RT9909). Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020

## 6 Visitor permits

If a person is issued with a visitor permit as shown in your company instructions, you may allow that person to take part in the work even though they do not hold the required track safety competence.

The person concerned must give you a document telling you that their visit onto the operational railway has been approved.

You must:

- brief the person on the safe system of work
- sign and keep the visitor permit
- stay with the person until they leave the operational railway.

#### Aid to working out warning times

	Up	Down
Maximum speed (from the Sectional Appendix or TSR or ESR)		
Time needed to stop work and down tools		
Time needed for everyone to reach a position of safety		
Add 5 seconds for each additional direction the site lookout is looking		

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	Up	Down
Add 5 seconds for each distant lookout		
Add 5 seconds if working alone		
Add 5 seconds for each intermediate lookout		
Add 10 seconds (minimum time to be in a position of safety)	10	10
Total warning time needed (Must be no more than 45 secs)		
Sighting distance needed		
Sighting distance available		

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## Sighting distance chart (in metres) mph

	45 secs	2600m	2500m	2400m	2300m	2200m	2050m	1950m	1850m	1750m	1650m	1550m	1450m	1350m
ng time of	40 secs	2300m	2200m	2100m	2000m	1900m	1800m	1700m	1700m	1600m	1500m	1400m	1300m	1200m
t to give a warni	35 secs	2000m	1900m	1800m	1800m	1700m	1600m	1500m	1450m	1350m	1300m	1200m	1100m	1050m
Sighting distance, in metres (m), needed to give a warning time of	30 secs	1700m	1650m	1550m	1500m	1450m	1350m	1300m	1250m	1150m	1100m	1050m	950m	900m
distance, in me	25 secs	1400m	1400m	1300m	1300m	1200m	1200m	1100m	1050m	950m	900m	850m	800m	750m
Sighting	20 secs	1200m	1100m	1100m	1000m	1000m	900m	850m	850m	800m	750m	700m	650m	600m
	15 secs	900m	900m	800m	800m	800m	700m	650m	650m	600m	550m	550m	500m	450m
Maximum	Speed	125 mph	120 mph	115 mph	110 mph	105 mph	100 mph	95 mph	90 mph	85 mph	80 mph	75 mph	70 mph	65 mph

## Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020

## Sighting distance chart (in metres) mph

Maximum		Sighting (	Sighting distance, in metres $(m)$ , needed to give a warning time of	es (m), needed	to give a warnin	g time of	
Speed	15 secs	20 secs	25 secs	30 secs	35 secs	40 secs	45 secs
60 mph	450m	550m	700m	850m	950m	1100m	1250m
55 mph	400m	500m	650m	750m	900m	1000m	1150m
50 mph	340m	500m	600m	680m	800m	900m	1050m
45 mph	320m	420m	520m	620m	720m	820m	920m
40 mph	280m	360m	460m	540m	640m	720m	820m
35 mph	240m	320m	400m	480m	560m	640m	720m
30 mph	220m	280m	340m	420m	480m	540m	620m
25 mph	180m	240m	280m	340m	400m	460m	520m
20 mph	140m	180m	240m	280m	320m	360m	420m
15 mph	120m	160m	180m	220m	240m	280m	320m
10 mph	80m	100m	120m	140m	160m	180m	220m
5 mph	40m	60m	60m	80m	80m	100m	120m

Sighting distance chart (in metres) mph

Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020

		45 secs	2600m	2500m	2400m	2300m	2200m	2050m	1950m	1850m	1750m	1650m	1550m	1450m	1350m
	g time of	40 secs	2300m	2200m	2100m	2000m	1900m	1800m	1700m	1700m	1600m	1500m	1400m	1300m	1200m
km/h	Sighting distance, in metres (m), needed to give a warning time of	35 secs	2000m	1900m	1800m	1800m	1700m	1600m	1500m	1450m	1350m	1300m	1200m	1100m	1050m
Sighting distance chart (in metres) km/h	es (m), needed	30 secs	1700m	1650m	1550m	1500m	1450m	1350m	1300m	1250m	1150m	1100m	1050m	950m	900m
tance charl	listance, in metr	25 secs	1400m	1400m	1300m	1300m	1200m	1200m	1100m	1050m	950m	900m	850m	800m	750m
Sighting dis	Sighting c	20 secs	1200m	1100m	1100m	1000m	1000m	900m	850m	850m	800m	750m	700m	650m	600m
		15 secs	900m	900m	800m	800m	800m	700m	650m	650m	600m	550m	550m	500m	450m
	Maximum	Speed	200 km/h	195 km/h	185 km/h	175 km/h	170 km/h	160 km/h	155 km/h	145 km/h	135 km/h	130 km/h	120 km/h	115 km/h	105 km/h

## Sighting distance chart (in metres) km/h

## Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020

Sighting distance chart (in metres) km/h

	45 secs	1250m	1150m	1050m	920m	820m	720m	620m	520m	420m	320m	220m	120m
g time of	40 secs	1100m	1000m	900m	820m	720m	640m	540m	460m	360m	280m	180m	100m
to give a warnin	35 secs	950m	900m	800m	720m	640m	560m	480m	400m	320m	240m	160m	80m
es (m), needed	30 secs	850m	750m	680m	620m	540m	480m	420m	340m	280m	220m	140m	80m
Sighting distance, in metres (m), needed to give a warning time of	25 secs	700m	650m	600m	520m	460m	400m	340m	280m	240m	180m	120m	60m
Sighting (	20 secs	550m	500m	500m	420m	360m	320m	280m	240m	180m	160m	100m	60m
	15 secs	450m	400m	340m	320m	280m	240m	220m	180m	140m	120m	80m	40m
Maximum	Speed	95 km/h	90 km/h	80 km/h	70 km/h	65 km/h	55 km/h	50 km/h	40 km/h	30 km/h	25 km/h	15 km/h	10 km/h

Sighting distance chart (in metres) km/h

# Sighting distance chart (in miles and yards)

Maximum		Sighting distance, in miles (m) and yards (y), needed to give a warning time of	ce, in miles (m) a	and yards (y), ne	seded to give a l	warning time of	
Speed	15 secs	20 secs	25 secs	30 secs	35 secs	40 secs	45 secs
125 mph	920y	1240y	1540y	1m80y	1m380y	1m700y	1m1000y
120 mph	<sup>1</sup> 2 mile	1180y	1480y	1 mile	1m300y	1m600y	1 <sup>1</sup> 2 mile
115 mph	860y	1140y	1420y	1700y	1m220y	1m500y	1m780y
110 mph	820y	1080y	1360y	1620y	1m140y	1m400y	1m660y
105 mph	780y	1040y	1300y	1540y	1m40y	1m300y	1m560y
100 mph	740y	980y	1240y	1480y	1720y	1m200y	1 <sup>1</sup> 4 mile
95 mph	700y	940y	1180y	1400y	1640y	1m100y	1m340y
90 mph	660y	<sup>1</sup> 2 mile	1100y	34 mile	1540y	1 mile	1m220y
85 mph	640y	840y	1040y	1260y	1460y	1680y	1m120y
80 mph	600y	800y	980y	1180y	1380y	1580y	1 mile
75 mph	560y	740y	920y	1100y	1300y	1480y	1660y
70 mph	520y	700y	860y	1040y	1200y	1380y	1540y
65 mph	480y	640y	800y	960y	1120y	1280y	1440y

Sighting distance chart (in miles and yards)

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## Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020 Sighting distance chart (in miles and yards)

Printing this manual is not permitted

Maximum		Sighting distan	Sighting distance, in miles (m) and yards (y), needed to give a warning time of	and yards (y), ne	eded to give a v	vaming time of	
Speed	15 secs	20 secs	25 secs	30 secs	35 secs	40 secs	45 secs
60 mph	<sup>1</sup> 4 mile	600y	740y	<sup>1</sup> 2 mile	1040y	1180y	<sup>34</sup> mile
55 mph	420y	540y	680y	820y	960y	1080y	1220y
50 mph	380y	500y	620y	740y	860y	980y	1100y
45 mph	340y	14 mile	560y	660y	780y	<sup>1</sup> 2 mile	1000y
40 mph	300y	400y	500y	600y	700y	800y	<sup>1</sup> 2 mile
35 mph	260y	360y	14 mile	520y	600y	700y	780y
30 mph	220y	300y	380y	14 mile	520y	600y	660y
25 mph	200y	260y	320y	380y	14 mile	500y	560y
20 mph	160y	200y	260y	300y	360y	400y	14 mile
15 mph	120y	160y	200y	220y	260y	300y	340y
10 mph	80y	100y	140y	160y	180y	200y	220y
5 mph	40y	60y	80y	80y	100y	100y	120y

Sighting distance chart (in miles and yards)

Issue 7

Supersedes GERM8000-possessionworkers lss 4 with effect from 05/12/2020





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Rule Book



Handbook

IWA or COSS setting up safe systems of work within possessions

## Issue 7



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Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020

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Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020

## 1 Definitions

## Possession

A running line is under possession when arrangements have been made to block the line and engineering trains or on-track plant (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 a work site.

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).

## Work site

A work site is the portion of line within a possession of a running line where work will take place and usually has a work-site marker board 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 or SWL is also responsible for authorising every IWA or COSS to set up their safe system of work within the work site.

Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020

## 2 General

Before you, or you and your group, carry out any work within a possession you must first set up a safe system of work as shown in this handbook.

## 3 Working within a work site

# **3.1** Agreeing the site of work with the ES or SWL

Before starting work or allowing work to start in a work site, you must agree with the ES or SWL:

- the limits of your site of work
- the nature of the work
- the safe system of work you will use.

You must receive a work-site briefing from the ES or SWL and then sign the work-site certificate (RT3199).

# **3.2** Agreeing the arrangements before the work site is granted

**Note:** this arrangement is only permitted where it has been planned and published in advance and you and the ES or SWL are aware of what is to happen.

You may reach the agreement with the ES or SWL, receive the work-site briefing and sign the RT3199 form, as shown in section 3.1, before the work site is granted.

You must not allow work to start until the ES or SWL has told you that the work site has been granted and has given you an authority number.

You must record the authority number.

Issue 7

Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020

# **3.3** Safe system of work where all lines are blocked (safeguarded)

Before you can treat your safe system of work as safeguarded, you must agree with the ES or SWL that:

- there will be no train or OTP movements at your site of work, or
- if there are train or OTP movements at your site of work, they will be made at no greater than 5 mph (10 km/h).

You must make sure that any other line at your site of work that is not inside the work site is blocked as shown in section 3.2 of handbook 6 or 3.3 of handbook 7.

# **3.4 Safe system of work using a safety barrier (fenced)**

Before you can treat your safe system of work as fenced, there must be a safety barrier as described in section 2.3 of handbook 6 or section 4.5 of handbook 7 between your site of work and any open line.

You must also:

- reach a clear understanding with the ES or SWL that there will be no train or OTP movements at your site of work, or
- if there are train or OTP movements at your site of work, they will be made at no greater than 5 mph (10 km/h).

Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020

## **3.5** Safe system of work (separated)

Before you can treat your safe system of work as separated, you must carry out the instructions shown in section 4.6 of handbook 7 for any adjacent open line.

You must also:

- reach a clear understanding with the ES or SWL that there will be no train or OTP movements at your site of work, or
- if there are train or OTP movements at your site of work, they will be made at no greater than 5 mph (10 km/h).

A person acting as an IWA cannot use a site warden as part of this safe system of work.

# **3.6 Safe system of work using equipment** warning

You can use equipment warning for the lines open to traffic as long as it will provide an adequate warning of each train approaching on the line or lines concerned.

This safe system of work must not be used on any line within the work site.

Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020

# 3.7 Safe system of work using lookouts (lookout warning)

You may use lookout warning as described in handbook 7 for any line within the work site.

During daylight, you may use a maximum speed of 25 mph (40 km/h) for the lines within the work site. However, you must provide lookout protection in all directions.

A person acting as an IWA cannot use this safe system of work.

During darkness, poor visibility, or when in or near a tunnel, you may only use lookout warning if all the following conditions apply.

- The ES or SWL agrees that all movements within the work site will be made at no more than 20 mph (30 km/h).
- The maximum speed of trains on any open line is no greater than 20 mph (30 km/h).
- Only site lookouts are needed to achieve the sighting distance.

A person acting as an IWA cannot use this safe system of work.

Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020

#### 3.8 When your safe system of work includes movements at no greater than 5 mph (10 km/h)

If you have agreed with the ES or SWL that movements will be made at no greater than 5 mph (10 km/h), you must make sure you, and your group if you have one, are in a safe position before any movement passes through your site of work.

#### 3.9 When protection from the ES or SWL is no longer needed

When you, and your group if you have one, are no longer on or near the line, or you are sure the work may safely continue without the protection provided by the ES or SWL, you must tell the ES or SWL and sign the RT3199 form.

# **3.10** When protection is no longer needed and the ES or SWL is to be advised by telephone

**Note:** this arrangement is only permitted where it has been planned and published in advance and you and the ES or SWL are aware of what is to happen.

When you, and your group if you have one, are no longer on or near the line, or you are sure the work may safely continue without the protection provided by the ES or SWL, you must tell the ES or SWL that you no longer need protection, stating:

- your name
- the location of your work
- your authority number.

## 4 Working outside a work site

## 4.1 Protection arrangements

If your site of work is to be within a possession but outside a work site, you cannot treat your safe system of work as safeguarded.

You cannot treat your safe system of work as fenced or site-warden protected if this would involve the movement of trains or OTP to be stopped on any line that is under possession.

## **4.2** Working with the PICOP's authority

This safe system of work can only be used if it has been planned and the PICOP is aware of what is to happen.

Before you allow work to start, you must contact the PICOP and agree:

- the lines under possession
- the limits of the area under the control of the PICOP
- the line you want to work on
- the time the possession is to be given up.

> You must then ask for permission from the PICOP to use the possession arrangements to provide a speed restriction of 25 mph (40 km/h).

If you are a COSS and the PICOP agrees that you may use the possession arrangements, you must record this on the safe-work briefing form (RT9909).

If you are a COSS, as long as you are sure the agreed arrangements will provide enough warning time, you must set up warning arrangements using a maximum speed of 25 mph (40 km/h) in both directions for the lines under possession only.

If you are an IWA, you must be able to look up often enough in both directions to see any train approaching.

You must make sure your work is completed before the time the possession is to be given up.

When the work is completed, you must tell the PICOP that you no longer need to use the possession arrangements. If you are a COSS, you must record this on the safe-work briefing form.

You cannot use this safe system of work during darkness, poor visibility or when in or near a tunnel.

## 4.3 Working without the PICOP's authority

If you are to work within a possession but without the PICOP's authority, you must not rely on the possession arrangements for your protection.

You must set up suitable warning arrangements using the maximum speed. You must be aware that trains can approach in either direction on all lines that are under possession.

## 5 Working in a siding

If it is necessary to block one or more sidings for the work to take place, you must not allow that work to start until the PICOS has given you permission to do so.

If you are competent to do so, you may be the PICOS.

Supersedes GERM8000-possessionworkers lss 4 with effect from 05/12/2020





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Rail Safety and Standards Board Limited The Helicon One South Place London EC2M 2RB Printing this manual is not permitted Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020 GE/RT8000/HB9 ERTMS Rule Book

# Handbook 9 IWA or COSS setting up safe systems of work within possessions on **ERTMS** lines where lineside signals are not provided

Issue 2 September 2015 Comes into force 05 December 2015



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Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020

## **1** Definitions

## Possession

A running line is under possession when arrangements have been made to block the line and engineering trains or on-track plant (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 a work site.

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).

## Work site

A work site is the portion of line within a possession of a running line where work will take place and has 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 or SWL is also responsible for authorising every IWA and COSS to set up their safe system of work within the work site.

Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020

## 2 General

Before you, or you and your group, carry out any work within a possession you must first set up a safe system of work as shown in this handbook.

## **3 Working within a work site**

# 3.1 Agreeing the site of work with the ES or SWL

Before starting work or allowing work to start in a work site, you must agree with the ES or SWL:

- the limits of your site of work
- the nature of the work
- the safe system of work you will use.

You must receive a work-site briefing from the ES and then sign the work-site certificate (RT3199 ERTMS).

# **3.2** Agreeing the arrangements before the work site is granted

**Note**: this arrangement is only permitted where it has been planned and published in advance and you and the ES or SWL are aware of what is to happen.

You may reach the agreement with the ES or SWL, receive the work-site briefing and sign the RT3199 ERTMS, as shown in section 3.1, before the work site is granted.

You must not allow work to start until the ES or SWL has told you that the work site has been granted and has given you an authority number.

You must record the authority number.

Issue 2

#### Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020

# **3.3 Safe system of work where all lines are blocked (safeguarded)**

Before you can treat your safe system of work as safeguarded, you must agree with the ES or SWL that:

- there will be no train or OTP movements at your site of work, or
- if there are train or OTP movements at your site work, they will be made at extreme caution and no greater than 10 km/h (5 mph).

You must make sure that any other line at your site of work that is not inside the work site is blocked as shown in section 3.2 of handbook 6 or 3.3 of handbook 7.

# **3.4 Safe system of work using a safety barrier (fenced)**

Before you can treat your safe system of work as fenced, there must be a safety barrier as described in section 2.3 of handbook 6 or section 4.5 of handbook 7 between your site of work and any open line.

You must also:

- reach a clear understanding with the ES or SWL that there will be no train or OTP movements at your site of work, or
- if there are train or OTP movements at your site of work, they will be made at extreme caution and at no greater than 10 km/h (5 mph).

# **3.5 Safe system of work using site wardens** (site-warden protected)

Before you can treat your safe system of work as site-warden protected, the instructions shown in section 4.6 of handbook 7 must be carried out for any adjacent open line.

You must also:

- reach a clear understanding with the ES or SWL that there will be no train or OTP movements at your site of work, or
- if there are train or OTP movements at your site of work, they will be made at extreme caution and at no greater than 10 km/h (5 mph).

A person acting as an IWA cannot use this safe system of work.

# **3.6 Safe system of work using equipment** warning

You may use equipment warning for the lines open to traffic as long as it will provide an adequate warning of each train approaching on the line or lines concerned.

This safe system of work must not be used on any line within the work site.

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# 3.7 Safe system of work using lookouts (lookout warning)

You may use lookout warning as described in handbook 7 for any line within the work site.

During daylight, you may use a maximum speed of 40 km/h (25 mph) for the lines within the work site.

However, you must provide lookout protection in all directions.

A person acting as an IWA must not use this safe system of work.

During darkness, poor visibility, or when in or near a tunnel, you may only use lookout warning if all the following conditions apply.

- The ES or SWL agrees that all movements within the work site will be made at no more than 30 km/h (20 mph).
- The maximum speed of trains on any open line is no greater than 30 km/h (20 mph).
- Only site lookouts are needed to achieve the sighting distance.

A person acting as an IWA must not use this safe system of work.

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### 3.8 When your safe system of work includes movements at no greater than 10 km/h (5 mph)

If you have agreed with the ES or SWL that movements will be made at no greater than 10 km/h (5 mph), you must make sure you, and your group if you have one, are in a safe position before any movement passes through your site of work.

### 3.9 When protection from the ES or SWL is no longer needed

When you, and your group if you have one, are no longer on or near the line or you are sure the work can safely continue without the protection provided by the ES or SWL, you must tell the ES or SWL and sign the RT3199 ERTMS certificate.

# **3.10** When protection is no longer needed and the ES or SWL is to be advised by telephone

**Note**: this arrangement is only permitted where it has been planned and published in advance and you and the ES or SWL are aware of what is to happen.

When you, and your group if you have one, are no longer on or near the line, or you are sure the work may safely continue without the protection provided by the ES or SWL, you must tell the ES or SWL that you no longer need protection, stating:

- your name
- the location of your work
- your authority number.

Issue 2

# 4 Working outside a work site

### 4.1 Protection arrangements

If your site of work is to be within a possession but outside a work site, you cannot treat your safe system of work as safeguarded.

You cannot treat your safe system of work as fenced or site-warden protected if this would involve the movement of trains or OTP to be stopped on any line that is under possession.

# 4.2 Working with the PICOP's authority

This safe system of work can only be used if it has been planned and the PICOP is aware of what is to happen.

Before you allow work to start, you must contact the PICOP and agree:

- the lines under possession
- the limits of the area under the control of the PICOP
- the line you want to work on
- the time the possession is to be given up.

You must then ask for permission from the PICOP to use the possession arrangements to provide a speed restriction of 40 km/h (25 mph).

If you are a COSS and the PICOP agrees that you may use the possession arrangements, you must record this on the safe-work briefing form (RT9909).

If you are a COSS, as long as you are sure the agreed arrangements will provide enough warning time, you must set up warning arrangements using a maximum speed of 40 km/h (25 mph) in both directions for the lines under possession only.

If you are an IWA, you must be able to look up often enough in both directions to see any train approaching.

You must make sure your work is completed before the time the possession is to be given up.

When the work is completed, you must tell the PICOP that you no longer need to use the possession arrangements. If you are a COSS, you must record this on the RT9909 form.

You cannot use this safe system of work during darkness, poor visibility or when in or near a tunnel.

# 4.3 Working without the PICOP's authority

If you are to work within a possession but without the PICOP's authority, you must not rely on the possession arrangements for your protection.

You must set up suitable warning arrangements using the maximum speed. You must be aware that trains can approach in either direction on all lines that are under possession.

# **5** Working in a siding

If it is necessary to block one or more sidings for the work to take place, you must not allow that work to start until the PICOS has given you permission to do so.

If you are competent to do so, you may be the PICOS.



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# Handbook 10 Duties of the COSS or SWL and person in charge when using a hand trolley

Issue 4 September 2015 Comes into force 05 December 2015



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# **1** General

Unless it says otherwise in company instructions, the instructions in this handbook apply when using hand-controlled trolleys and other manually propelled equipment mounted on rail wheels or runners. All these items are referred to as trolleys in this handbook.

A competent person must always be appointed to be in charge of the trolley while it is in use.

A COSS or SWL must make sure the line is blocked before the trolley is placed on the line. The COSS or SWL can be the person in charge of the trolley.

Each trolley must be fitted with an operational fail-safe braking system. The correct brake handle must be used when operating the trolley.

A trolley must not pass over an axle counter head unless reset arrangements have been agreed.

# 2 Duties of the COSS or SWL

# 2.1 Making sure the line is blocked

If you are the COSS, you must make sure the line is blocked as shown in handbook 8, 9 or handbook 9 ERTMS and the necessary arrangements for the trolley have been made before you allow the trolley to be placed on the line.

If you are the SWL, you must make sure the line is blocked as shown in handbook 21 and the necessary arrangements for the trolley have been made before you allow the trolley to be placed on the line.

### 2.2 On a running line not under possession

You must agree with the signaller the position any points must be in. You must not allow the trolley to pass any signal at danger or a block marker without the signaller's authority.

# 2.3 On a running line in a possession

If you are a COSS working within a possession, you must agree with the ES or SWL when you can allow the trolley to be placed on the line.

# 2.4 Within a siding

If working within a siding, you must not allow the trolley to be placed on the line until the necessary protection arrangements have been made.

# 2.5 Level crossings

You must not allow the trolley to:

- pass over a manned level crossing unless the barriers are lowered or the gates are closed to road traffic and you are sure it is safe to do so
- come within the controls of an ABCL or AOCL
- come within the controls of an AHBC unless it is under local control
- pass over an AHBC unless it is under local control and the attendant displays a green handsignal
- pass over a level crossing which has red and green warning lights unless you have made sure it is safe to do so
- pass over a CCTV, OD or RC crossing without the signaller's authority.

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# **3** Duties of the person in charge of the trolley

The person in charge of the trolley must make sure that:

- the trolley's braking system has been tested and is in good order
- the COSS or SWL has given permission before the trolley is put on the line
- the trolley is not placed on or used on a line which has a gradient greater than 1 in 50, unless specially authorised in local instructions
- the trolley is correctly loaded
- the trolley is not overloaded
- no-one rides on the trolley
- the trolley, or its load, does not foul any other line
- the trolley has at least two people with it when moving and one of them must be in charge of the brake
- a red flag or red light is displayed on the trolley the flag or light must be visible in both directions
- when not being used, the trolley is placed well clear of the line and if left unattended, the trolley must be secured so it cannot be moved.



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**Rule Book** 

Handbook

Duties of the person in charge of the possession (PICOP)

# Issue 8



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# 1 Definitions

# Driver

This includes an operator of an on-track machine.

### **Engineering train**

This includes on-track machines but does not include on-track plant.

# Machine controller (MC)

The person with overall responsibility for the safe operation of OTP and will be identified by an armlet or badge with MACHINE CONTROLLER or MC in black letters on a white background.

When the MC is also competent as a crane controller, they will instead wear an armlet or badge with CRANE CONTROLLER or CC in black letters on a white background.

# **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.

# Person in charge of the siding possession (PICOS)

The person responsible for taking and supervising a possession of a siding.

# Token

Any single line token, staff or tablet.

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# Train

This includes a light locomotive, self-propelled rail vehicle, on-track machine, an RRV in rail mode and an RMMM.

# 2 Competence and identification

To act as the person in charge of the possession (PICOP), you must have with you a valid PICOP certificate of competence issued by your employer.

You must wear an armlet on the left arm or a badge on the upper chest when you are carrying out the duties of the PICOP. The armlet or badge must have PERSON I.C. POSSESSION in red letters on a yellow background.

# 3 Possession details

# 3.1 Possession details to be published

Except where a possession must be taken in an urgent situation, details of the possession must be published in the *Weekly Operating Notice* or *Engineering Notice*.

# 3.2 Changes to published details

If it is necessary for any of the published details to be changed, this must be agreed between the organisation responsible for the possession and Operations Control.

Operations Control will be responsible for letting you and the signaller know about the details of any agreed changes.

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# 4 Taking the possession

# 4.1 Confirming the details with the signaller

You must contact the signaller who controls the signal leading to the section of line that is to be taken under possession.

You must state the published possession reference if there is one and then confirm:

- the line that you will be taking under possession
- whether possession is to be taken around one or more trains
- the signals leading to the possession that will be kept at danger or block markers from which the route will be kept closed
- the details of any points or crossings that may be used for trains outside the possession
- the position any points within the possession must be placed in
- the arrangements to be applied for every level crossing within the possession
- the exact location of the detonator protection and whether this is less than the standard distance
- the time the possession is to be taken.

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# 4.2 Taking possession around one or more engineering trains

When the possession will be taken or lengthened around an engineering train, before you can proceed any further with the possession arrangements the signaller must tell you when every train concerned is at a stand at its specified signal, block marker or flexible train arrival point (FTAP).

You must not allow any of these trains to move again until the possession has been granted and all the necessary arrangements have been made.

There is no limit to the number of engineering trains a possession can be taken or extended around, as long as the details have been published for each train concerned.

### **4.3** Arranging the possession protection

When the line concerned is clear, other than any trains at a stand as shown in section 4.2 above, the signaller will tell you when the signals leading to the possession are at danger or the routes closed.

You must then complete section 1 of your possession arrangements form (RT3198).

You must then read the details back to the signaller.

When the signaller is satisfied that the details are correct, you will be told that you can arrange for the possession protection to be placed. Printing this manual is not permitted Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020 You may then authorise protection to be carried out as shown in section 4.4, 4.5 or 4.7 and authorise each engineering supervisor (ES) or safe work leader (SWL) to set up the work site and, if necessary, place work-site marker boards (WSMB) as shown in section 6.2.

# 4.4 Arranging detonator protection at the standard distance

You must arrange for detonator protection to be placed as shown in diagram HB11.1, or where points are involved, diagram HB11.2.

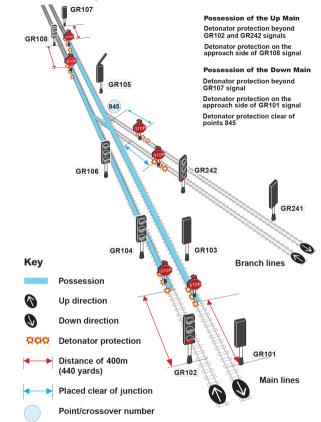
You do not need to provide detonator protection:

- at a crossover, siding or loop where it joins the line under possession, or
- on a single line where you will have the token as protection.

Detonator protection consists of three detonators being placed on the same rail, 20 metres (approximately 20 yards) apart with a possession limit board (PLB) placed at the centre detonator.

If detonator protection is used on a single line, it must be placed at both ends as shown in diagram HB11.1 for signal GR102 or diagram HB11.2 for crossover 844.

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# Diagram HB11.1 Standard detonator protection

# 4.5 If the standard distance is not possible

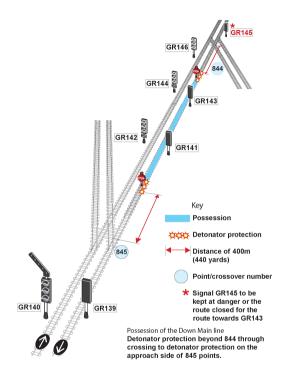
If, due to the work that is to take place, it is not possible to place the detonator protection at the standard distance as shown in diagram HB11.1 or diagram HB11.2, the following must apply.

- The detonator protection must be placed as close to the standard distance as possible.
- Any train movement approaching the detonator protection from within the possession must only be made as shown in section 8.12.

# 4.6 When all detonator protection has been placed

When all detonator protection is in place, you must record the details on your RT3198 form and then tell the signaller.

When the signaller is satisfied the line concerned is correctly protected, the signaller will tell you that the possession is granted.



#### **Diagram HB11.2**

#### Standard detonator protection - points involved

# **4.7** Using the token as protection

You do not need to arrange detonator protection on a single line if you use the token to provide protection.

You must get the token from the signal box or from a token instrument that is not at a signal box.

You must record the details on your RT3198 form.

You may now consider the possession granted.

You must keep the token until the possession is given up.

# **5** Arrangements for level crossings

# 5.1 General

You must not allow any train or OTP movement to take place, or any work to be carried out, that will affect the operation of any level crossing until the necessary arrangements have been put in place for that level crossing.

You must record on the RT3198 form the arrangements that are applied for each level crossing within the possession.

# 5.2 Automatic half barrier crossing (AHBC)

You must make sure an attendant has been appointed and local control taken at each AHBC throughout the time the possession is in place.

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#### Exceptions

You do not need to do this if:

- the crossing controls will not be activated by the work
- the only movements over the crossing will be engineering trains passing normally in a direction provided with controls
- it is shown in the notices that the AHBC will be on local control only while it is affected by the work or train movements.

### **5.3** Automatic barrier crossing locally monitored (ABCL) and automatic open crossing locally monitored (AOCL)

You must make sure the road traffic signals are switched off and the audible warnings disconnected at each ABCL and AOCL throughout the time the possession is in place.

You must also make sure the barriers are kept in the raised position at each ABCL.

#### Exceptions

You do not need to do this if:

- the crossing controls will not be activated by the work
- the only movements over the crossing will be engineering trains passing normally in a direction provided with controls.

#### 5.4 Barrier crossing with closed-circuit television (CCTV), barrier crossing with obstacle detection (OD) and remotely controlled crossing with barriers (RC)

You must make sure an attendant has been appointed at each CCTV, OD and RC crossing throughout the time the possession is in place.

#### Exceptions

You do not need to do this if:

- the crossing controls will not be activated by the work
- the only movements over the crossing will be trains passing normally in the right direction
- it is shown in the notices that a crossing attendant will be at the CCTV, OD or RC crossing only while it is affected by the work or train movements.

# 6 Work sites

### 6.1 Setting up work sites

You must not give permission for a work site to be set up or lengthened until any movement you have authorised has passed clear or has stopped short of the proposed work site.

# 6.2 Indicating each work site

You must arrange to provide WSMBs if there are engineering trains or OTP within the possession.

You must arrange with the ES or SWL to place a WSMB in the 'four-foot' 100 metres (approximately 100 yards) from each end of the work site.

You must not allow a WSMB for one work site to be closer than 100 metres (approximately 100 yards) from the WSMB of another work site on the same line.

When the work site will be taken around a train, you must tell the ES or SWL the location of each train before you give permission to place the WSMBs.

You must record the exact location of each WSMB on your RT3198 form.

If a work site will be close to the detonator protection for the possession, the WSMB must normally be placed at least 100 metres (approximately 100 yards) from that detonator protection.

If, due to the work, a distance of 100 metres is not possible between the WSMB and the detonator protection, the WSMB must be placed at the detonator protection.

# 6.3 Allowing work to start inside the work site

When the ES or SWL tells you the WSMB at each end of their work site is in position, you must dictate the details to the ES or SWL who will fill in a Work-site Certificate (RT3199).

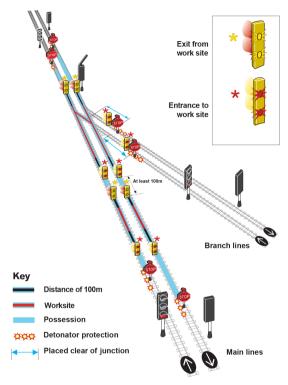
You must include all details, including the arrangements made for each level crossing within that work site.

The ES or SWL will read back the details to you.

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You must record the details on your RT3198 form.

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# Diagram HB11.3 Indication of work sites

#### 6.4 When a work site is suspended

If the ES or SWL tells you the work site has been suspended but the WSMBs are to stay in place, you must record the details on your RT3198 form.

You must not allow a movement to pass a WSMB into a work site where work is suspended.

## 7 Allowing work outside a work site

You may allow a COSS or IWA to set up a safe system of work that uses warning of approaching trains in the area between work sites or between the detonator protection and the work site.

You must make sure the COSS or IWA fully understands the details of the possession, including the time the possession is to be given up.

You must instruct each COSS or IWA that engineering trains or OTP may approach at any time and at a speed of up to 25 mph (40 km/h) in either direction on any line under possession.

You must record the details, including the name of each COSS or IWA, on your RT3198 form.

You must not give up the possession until each COSS or IWA involved has told you they no longer need to rely on the possession arrangements.

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## 8 Train movements

#### 8.1 General

#### Entering the possession

The signaller must keep the route closed and not clear any signal leading to the possession. The signaller will authorise the driver of each train entering the possession to pass the signal at danger or pass the end of authority (EoA) without a movement authority (MA) and proceed to the detonator protection.

The signaller will get your permission before doing this.

Only you can authorise train movements past the detonators into the possession or through points and crossings protecting the possession at an intermediate point.

If there is no detonator protection because you are using the token as protection, you must agree with the signaller the exact location the train must proceed to.

Only the ES or SWL can authorise a movement into a work site.

#### Points within the possession

If there are any unworked points within the possession, you must arrange for them to be secured if necessary, before a movement is made over them.

You must record the details on your RT3198 form.

Before you authorise any movement, you must make sure any points in the route are in the correct position.

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If the MC with an item of OTP tells you that the OTP cannot be relied upon to operate train-operated points, you must make sure these points are correctly secured before authorising the OTP to pass over them in the trailing position.

#### Instructions to drivers and machine controllers

You must instruct the driver of each engineering train, or the MC of each item of OTP, to make each rail movement at caution.

You must check that the driver or MC clearly understands the location the movement is to proceed to.

#### Competent person passing on your instructions

If you use someone else to give your instructions to the driver or MC, you must make sure the person:

- is competent to do so
- fully understands the instructions to pass on
- does not travel in the driving cab with the driver.

#### Signals and block markers within the possession

The normal meaning of a proceed signal does not apply within a possession as the signalling is suspended.

However, drivers and MCs will not pass a signal at danger or a block marker without verbal authority.

You are responsible for giving this authority within the possession outside work sites and the ES or SWL is responsible for doing this within their work site.

#### Vehicles left outside a work site

You must make sure a red light is showing at both ends of any vehicles stabled or detached outside a work site.

#### **Recording details of movements**

You must record the time you authorise each movement. You must also record the time you are told when a movement has been completed.

# 8.2 Entering the possession at the detonator protection

Before you give the signaller permission to let an engineering train proceed towards the detonator protection, you must make sure:

- the detonator protection is in place
- you have not authorised a conflicting movement.

You must not allow the detonator protection to be removed until the engineering train has stopped at it.

You must make sure that the detonator protection is replaced immediately after the engineering train has entered the possession.

When the detonator protection has been replaced you must tell the signaller.

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#### 8.3 Entering the possession at an intermediate point - between work sites

Before you give the signaller permission to let an engineering train proceed from the protecting signal or block marker towards the possession, you must make sure:

- you or a competent person sent by you is at the intermediate point to give the instructions to the driver
- you have not authorised a conflicting movement to take place.

Once the engineering train has entered the possession and is clear of the points or crossings, you must tell the signaller.

The signaller will then return the points to the agreed position.

#### 8.4 Entering the possession at an intermediate point - directly into a work site

Before you give the signaller permission to let an engineering train proceed from the protecting signal or block marker towards the possession, you must make sure:

- the ES or SWL, or a competent person sent by the ES or SWL, is positioned at the intermediate point to give the instructions to the driver
- you, the ES or SWL have not authorised a conflicting movement to take place.

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Once the engineering train has entered the possession, you must get confirmation from the ES or SWL that it has entered the work site and is clear of the points or crossings concerned.

You must then tell the signaller that the engineering train is clear of the points or crossings at the intermediate point.

The signaller will then return the points to the agreed position.

# 8.5 Entering the possession from an adjacent siding under possession

If a movement is to enter your possession from an adjacent siding under possession, you must first agree with the signaller and the person in charge of the siding possession (PICOS) how this is to be done.

If the movement is to pass directly from the siding under possession into the work site, you must make sure that:

- the ES or SWL, or a competent person sent by the ES or SWL, is positioned at the exit from the siding to give instructions to the driver
- you have not authorised a conflicting movement to take place.

#### 8.6 Leaving a work site

Only you can authorise a movement to leave a work site.

You must not allow the WSMB to be removed until the movement has stopped at it.

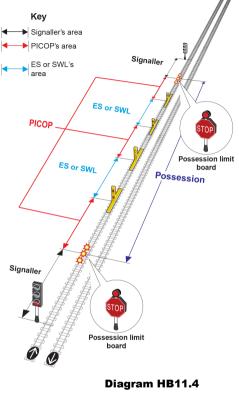
The WSMB must be replaced immediately the movement has passed beyond it.

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Before you allow a train to proceed from the WSMB, you must make sure that:

- any previous movement authorised over that section of line has passed clear or is at a stand at the agreed stop signal, block marker or detonator protection
- you, or a competent person, tell the driver the exact location of the agreed stop signal, block marker or detonator protection or the exact location of any train waiting at the detonator protection.

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Areas of responsibility

## 8.7 Moving between detonator protection and the work site or between work sites

Before you allow a train to proceed from the detonator protection or a WSMB to the next work site, you must make sure:

- any previous movement authorised over that section of line has passed clear or is at a stand at the WSMB
- you, or a competent person, tell the driver or MC the exact location of the next WSMB or the exact location of any train or vehicle waiting at that WSMB.

# 8.8 Assisting a failed train, failed OTP or removing a portion of a divided train

You may allow a train or OTP to enter an occupied area under your control to assist an OTP or a train that has failed or divided.

Before doing this you must:

- tell the driver of the failed train or MC of the failed OTP not to move the train or OTP until the assisting train or OTP arrives
- give the driver of the assisting train or MC of the assisting OTP the exact location of the failed train or OTP.

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#### 8.9 Movement of multiple OTP

If more than one item of OTP is to travel in an area you control, you may allow them to travel at the same time as long as:

- the details are shown in the method statement
- any previous movement in that area has arrived at the other end or has been shunted clear at an intermediate point
- each MC involved in the movement is given the necessary instructions.

Once you have given authority for the movement to start, you must not allow any other movement in that section until all the OTP in the movement:

- have arrived at the WSMB at the other end of that section, or
- have been shunted clear.

#### 8.10 Propelling

You must not allow any of the following movements to be propelled unless the details are published in the *Weekly Operating Notice* or *Engineering Notice* and are shown in the method statement.

- Movements entering the possession
- Movements within the possession but outside a work site
- Movements leaving the possession.

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## 8.11 Leaving the possession - standard detonator protection

You may allow an engineering train to proceed to the detonator protection to wait for the signaller to give permission for the engineering train to leave the possession.

You must make sure the detonator protection is not removed until:

- the engineering train is at a stand at the detonator protection
- the signaller has given the necessary instructions to the driver
- the signaller has given the driver permission for the engineering train to leave the possession.

When the engineering train has left the possession, you must make sure the detonator protection is immediately replaced.

When the detonator protection has been replaced, you must tell the signaller.

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#### 8.12 Movements towards the detonator protection - standard distance is not possible

You must not allow an engineering train to approach the detonator protection until the signaller has given you permission to do so.

If the WSMB is placed at the detonator protection, you must then give the ES or SWL permission to allow the movement.

You must then tell the signaller immediately it has arrived at the detonator protection.

You must make sure the detonator protection is not removed until:

- the engineering train is at a stand at the detonator protection
- the signaller has given the necessary instructions to the driver
- the signaller has given permission for the engineering train to leave the possession.

When the engineering train has left the possession, you must make sure the detonator protection is immediately replaced.

When the detonator protection has been replaced, you must tell the signaller.

#### 8.13 Leaving the possession at an intermediate point

If the engineering train is to leave the possession at an intermediate point, the signaller will give the driver the necessary instructions.

You must tell the signaller when the engineering train has passed clear of the points or crossings.

The signaller will then return the points to the agreed position.

## 8.14 Leaving the possession directly into a siding under possession

If a movement is to leave your possession directly into an adjacent siding under possession, you must first agree with the signaller and the PICOS how this is to be done.

# 8.15 Leaving the possession when there is no detonator protection

When you are using the token as protection, you must agree with the signaller how each movement is to leave the possession.

## 9 Movements over level crossings

#### 9.1 Before making a movement

Before authorising any movement that will pass over a level crossing, you must make sure any instructions in this section for the type of level crossing concerned are carried out.

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Before the movement takes place, you must give details of the movement to those personnel operating:

- any CCTV, OD or RC level crossing
- other level crossing, if possible.

#### 9.2 AHBC locally controlled

You must tell the train driver or MC that the movement must not pass over the crossing unless the crossing attendant is displaying a green handsignal.

#### 9.3 AHBC that is not being locally controlled

OTP must not pass over the level crossing.

You may allow an engineering train that is to pass normally over the level crossing, to proceed in a direction for which there are controls.

You must first get permission from the signaller for the movement over the crossing and then tell the driver not to stop specially before passing over the level crossing.

#### 9.4 CCTV, OD or RC locally controlled

You must tell the driver or MC that the movement must not pass over the crossing unless the crossing attendant is displaying a green handsignal.

#### 9.5 CCTV, OD or RC that is not locally controlled

You must not allow any movement in the wrong direction to pass over the level crossing.

For movements in the right direction, you must not authorise the driver or MC to pass the signal or block marker protecting the level crossing until the signaller has told you that the barriers have been lowered for the movement.

You must then tell the driver or MC not to stop specially at the level crossing.

#### 9.6 AOCL and ABCL not switched off

If the crossing has not been switched off as shown in section 5.3, the following must apply.

You must instruct the driver of an engineering train that is to pass over the crossing normally, to proceed over the crossing only when it is safe to do so.

For any engineering train movements not passing normally over the crossing and for all items of OTP, you must not allow the movement to take place unless:

- · the crossing has been closed to road traffic, or
- a competent person is positioned at the crossing and has stopped road traffic by displaying a red handsignal on both sides of the crossing.

You must instruct the driver or MC to stop at the crossing, sound the horn and then pass over the crossing only when it is safe to do so.

# 9.7 AOCL and ABCL that has been switched off

If the crossing has been switched off as shown in section 5.3, the following must apply.

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#### During daylight

You must instruct the driver of an engineering train that is to pass over the crossing to stop the train at the crossing, sound the horn and then pass over the crossing only when it is safe to do so.

The movement of OTP over the crossing must not take place unless:

- the crossing has been closed to road traffic, or
- a competent person is positioned at the crossing and has stopped road traffic by displaying a red handsignal on both sides of the crossing.

You must instruct the MC to stop at the crossing, sound the horn and then pass over the crossing only when it is safe to do so.

#### **During darkness**

The movement of an engineering train or OTP over the crossing must not take place unless:

- · the crossing has been closed to road traffic, or
- a competent person is positioned at the crossing and has stopped road traffic by displaying a red handsignal on both sides of the level crossing.

You must instruct the driver or MC to stop at the crossing, sound the horn and then pass over the crossing only when it is safe to do so.

#### 9.8 Manned level crossings

You must instruct the driver or MC to pass over the level crossing only if the level crossing barriers or gates are closed to road traffic.

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#### **9.9** Crossing with red and green lights (R/G)

You must instruct the driver or MC to stop at the crossing, sound the horn and then pass over the crossing only when it is safe to do so.

## 9.10 Barrow or foot crossings with white light indicators

You must instruct the driver or MC to pass over the crossing only when it is safe to do so.

## **10** Changing the possession limits

#### **10.1** When the limits may be changed

The limits of the possession may be shortened or lengthened as long as:

- the details of the changed limits, including the planned time, are published in the *Weekly Operating Notice* or *Engineering Notice*, or
- in exceptional circumstances, when agreed by Operations Control.

#### **10.2 Recording the details**

You must record the changed details on the RT3198 form.

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#### **10.3 Placing the new detonator protection**

You must make sure the new detonator protection is placed before the old detonator protection is removed.

## 11 Change of personnel

#### 11.1 Change of PICOP

If you are going off duty, you must:

- tell the new PICOP about the possession arrangements
- hand the RT3198 form to the new PICOP
- tell the signaller the name of the new PICOP.

If you are the new PICOP, you must sign the RT3198 form.

#### 11.2 Change of ES or SWL

The ES or SWL will tell you the name of the new ES or SWL if there is a change. You must record the details on the RT3198 form.

## **12** Giving up the possession

#### **12.1** Making sure the work is complete

When each ES or SWL gives you an assurance that work is complete at their work site, you must tell them to remove the WSMBs.

You must not give permission to remove the WSMBs if you have given permission for a movement to proceed towards the work site.

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The ES or SWL will tell you if a train is standing within the work site at a signal or block marker where it has been agreed that the possession will be given up around a train. You must record the details on the RT3198 form.

When the ES or SWL tells you the WSMBs have been removed, you must record the details on the RT3198 form.

When each IWA or COSS who is relying upon the possession arrangements in your area of control tells you they no longer need the possession arrangements, you must record the name of each IWA or COSS and the time on your RT3198 form.

# **12.2** Giving up the possession around engineering trains

You may give up the possession with engineering trains standing at stop signals or block markers on the line under possession, as long as all of the following apply.

- The line is signalled by track circuit block or ERTMS and the trains are standing at a location where the detection is by track circuits and not by axle counters.
- The movement, after the possession is given up, will be in the normal signalled direction and will be driven from the leading cab.

You must make sure:

- you agree with the signaller the stop signals or block markers to be used
- all personnel on the engineering trains are told that the possession is to be given up and the line must be considered open.

You must not start the arrangements to give up the possession until the signaller has confirmed that engineering trains have arrived at the agreed signals or block markers.

#### **12.3** Removing the possession arrangements

When every ES or SWL has removed their WSMBs and each IWA or COSS working in your area of control has told you they no longer need your protection, you must arrange for the detonator protection to be removed.

If single line working is still in operation, you must tell the pilotman that the possession is being given up.

You must arrange to release any unworked points or train-operated points that have been secured.

If you have the token as protection and you are ready to give up the possession, you must:

- return the token to the signal box at either end of the section, or
- restore it at an instrument that is not at a signal box after reaching a clear understanding with the signaller about what you are going to do.

## 12.4 Telling the signaller the possession is no longer needed

You must tell the signaller that the line is clear and safe for trains to run on (or if section 12.2 applies, clear and safe other than the engineering train standing at the agreed signal or block marker) when:

- any unworked points or train-operated points that had been secured have been released
- the detonator protection has been removed.

#### **12.5** Confirming the possession is given up

You must record the details on the RT3198 form. You must ask the signaller to read back the entry in the Train Register.

If you agree with the entry in the Train Register, this is confirmation that the possession has been given up.

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GE/RT8000/HB11 ERTMS Rule Book

# Handbook 11

Duties of the person in charge of the possession (PICOP) on ERTMS lines where lineside signals are not provided

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## **1** Definitions

#### Driver

This includes an operator of an on-track machine.

#### **Engineering train**

This includes on-track machines but does not include on-track plant.

#### Machine controller (MC)

The MC is the person with overall responsibility for the safe operation of OTP and will be identified by an armlet or badge with MACHINE CONTROLLER or MC in black letters on a white background.

When the MC is also competent as a crane controller, they will instead wear an armlet or badge with CRANE CONTROLLER or CC in black letters on a white background.

#### Maximum speed in a possession

Depending on any lower speed that may apply the maximum speed entering, leaving and within a possession is 40 km/h (25 mph).

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

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

# Person in charge of a siding possession (PICOS)

The PICOS is the person responsible for taking and supervising a possession of a siding.

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#### Train

This includes a light locomotive, self propelled rail vehicle, on-track machine, an RRV in rail mode and rail mounted maintenance machine.

## 2 Competence and identification

To act as the person in charge of the possession (PICOP), you must have with you a valid PICOP certificate of competence issued by your employer.

You must wear an armlet on the left arm or a badge on the upper chest when you are carrying out the duties of a PICOP. The armlet or badge must have PERSON I.C. POSSESSION in red letters on a yellow background.

## **3** Possession details

#### 3.1 Possession details to be published

Except where a possession must be taken in an urgent situation, details of the possession must be published in the *Weekly Operating Notice* or *Engineering Notice*.

#### 3.2 Changes to published details

If it is necessary for any of the published details to be changed, this must be agreed between the organisation responsible for the possession and Operations Control.

Operations Control will be responsible for letting you and the signaller know about the details of any agreed changes.

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### **4** Taking the possession

#### 4.1 Confirming the details with the signaller

You must contact the signaller who controls the block marker leading to the section of line that is to be taken under possession.

You must state the published possession reference if there is one and then confirm:

- the line that will be taken under possession
- · the possession procedure to be used
- whether the possession is to be taken around one or more trains
- the locations between which the possession will be taken including the protecting block markers or points
- the details of any points or crossings that may be used for trains outside the possession
- the position points within the possession must be placed in
- the arrangements to be applied for each level crossing within the possession
- the exact location of the first work-site marker board (WSMB) in the normal direction of travel
- the exact location of the last WSMB in the normal direction of travel
- the time the possession is to be taken.

## **4.2 Taking possession around one or more engineering trains**

When the possession is to be taken or lengthened around an engineering train, before you can proceed any further with the possession arrangements, the signaller must tell you when every train concerned is at a stand at its specified block marker.

You must not allow any of these trains to move again until the possession has been granted and all the necessary arrangements have been made.

There is no limit to the number of engineering trains a possession can be taken around, as long as the details have been published for each train concerned.

# **4.3 Providing signalling protection (closing the route)**

When the line concerned is clear other than any trains at a stand as shown in section 4.2 above, the signaller will tell you when the routes from the agreed block markers to protect the possession have been closed.

You must then complete section 1 of your Possession Arrangements Form (RT3198 ERTMS).

You must then read the details back to the signaller.

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# 4.4 When signalling protection has been provided

When protection by block markers and points has been provided as shown in section 4.3, one of the following possession procedures must be carried out before the possession can be granted.

The only exception to this is possession procedure T3-A. This procedure must be carried out after the possession is granted.

You must record the details of the possession procedure used on the RT3198 ERTMS form.

# 4.5 Possession procedure T3-A (using a track circuit operating device T-COD)

#### When this procedure can be used

You may use procedure T3-A only if all the following apply.

- Use of a T-COD is authorised at the particular location.
- The signalling equipment is working normally at the time the T-COD is to be placed on the line.
- The work within the possession will not affect the correct operation of the track circuit concerned.

#### **Competency in using a T-COD**

You must make sure the person who is to place the T-COD on the line is competent to do so.

#### Placing the T-COD on the line

You must arrange for the T-COD to be placed on the line, only as shown in section 6.3, after the possession has been granted.

#### 4.6 Possession procedure T3-D (disconnecting signalling equipment) When this procedure can be used

You may use procedure T3-D only if it is authorised at the particular location.

# Competency in disconnecting signalling equipment

You must make sure the person who is to make the disconnections is competent to do so.

#### Arranging for the disconnection to be made

When the signaller has told you all routes leading to the possession have been closed, as shown in section 4.3, you must arrange for the signalling controls of these routes to be disconnected.

You must tell the signaller when this has been done.

#### 4.7 Possession procedure T3-P (PICOP or PICOP's agent going to the signal box) When this procedure can be used

## You may use procedure T3-P only if it is authorised at the particular location.

#### **Competency of a PICOP's agent**

You must make sure that any person who is to act as your agent is competent to do so.

#### Going to the signal box

When the signaller has told you all routes protecting the entrances and exits from the possession have been closed as shown in section 4.3, you must check that this has been done and that the possession is being correctly protected.

If you cannot personally go to the signal box that controls the routes protecting the entrances to and exits from the possession, you must arrange for a PICOP's agent to be in the controlling signal box to check that the correct routes have been closed.

You must get an assurance from the PICOP's agent that the protecting routes have been closed and the possession is correctly protected by the signaller.

You must then tell the signaller you are satisfied that the possession is correctly protected.

You do not need to go to, or send a PICOP's agent to, any intermediate signal boxes.

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## **4.8** Possession procedure T3-E (barring the route)

# Possession procedure T3-E always to be used

Possession procedure T3E must always be used except when it is not possible to do so and one of the other methods has been agreed at the planning meeting.

In exceptional circumstances, this may be agreed by Operations Control.

# Competency in disconnecting signalling equipment

You must make sure the person who is to carry out the route barring is competent to do so.

## Arranging for the route barring to be carried out

When the signaller has told you all routes leading towards the possession have been closed as shown in section 4.3, you must arrange for the signalling controls for these routes to be barred.

You must tell the signaller when this has been done.

#### 4.9 Placing the first and last work-site marker boards

The distance between the block marker or points used to protect the entrance to the possession and the first WSMB must be not less than 200 metres. Printing this manual is not permitted Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020 The block marker immediately beyond the last WSMB must be no closer than 200 metres. This must be the point where normal working starts for train movements in the right direction.

#### 4.10 When the first and last WSMBs have been placed

When the first and last WSMBs are in place, you must record the details on your RT3198 ERTMS form and then tell the signaller.

When the signaller is satisfied the line concerned is correctly protected, the signaller will tell you that the possession is granted.

## 5 Arrangements for level crossings

#### 5.1 General

You must not allow any train or OTP movement to take place, or any work to be carried out, that will affect the operation of any level crossing until the necessary arrangements have been put in place for that level crossing.

You must record the arrangements that are applied for each level crossing within the possession on your RT3198 ERTMS form.

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#### **5.2** Automatic half barrier crossing (AHBC)

You must make sure an attendant has been appointed and local control taken at each AHBC throughout the time the possession is in place.

#### Exceptions

You do not need to do this if:

- the crossing controls will not be activated by the work
- the only movements over the crossing will be engineering trains passing normally in a direction provided with controls
- it is shown in the notices that the AHBC will be on local control only while it is affected by the work or train movements.

#### **5.3** Automatic barrier crossing locally monitored (ABCL) and automatic open crossing locally monitored (AOCL)

You must make sure the road-traffic signals are switched off and the audible warnings disconnected at each ABCL and AOCL throughout the time the possession is in place.

You must also make sure the barriers are kept in the raised position at each ABCL.

#### Exceptions

You do not need to do this if:

- the crossing controls will not be activated by the work
- the only movements over the crossing will be engineering trains passing normally in a direction provided with controls.

#### 5.4 Barrier crossing with closed circuit television (CCTV), barrier crossing with obstacle detection (OD) and remotely controlled crossing with barriers (RC)

You must make sure an attendant has been appointed at each CCTV, OD and RC crossing throughout the time the possession is in place.

#### Exceptions

You do not need to do this if:

- the crossing controls will not be activated by the work
- the only movements over the crossing will be trains passing normally in the right direction
- it is shown in the notices that a crossing attendant will be at the CCTV, OD or RC crossing only while it is affected by the work or train movements.

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### **6** Work sites

#### 6.1 Setting up work sites

You must not give permission for a work site to be set up or lengthened until any movement you have authorised has passed clear or has stopped short of the proposed work site.

#### 6.2 Indicating each work site

You must arrange with each Engineering Supervisor (ES) or Safe Work Leader (SWL) to place a WSMB in the four-foot 100 metres (approximately 100 yds) from either end of the work site.

You must not allow a WSMB for one work site to be closer than 100 metres (100 yds) from the WSMB of another work site on the same line.

When the work site will be taken around a train, you must tell the ES or SWL the location of each train before you give permission to place the WSMBs.

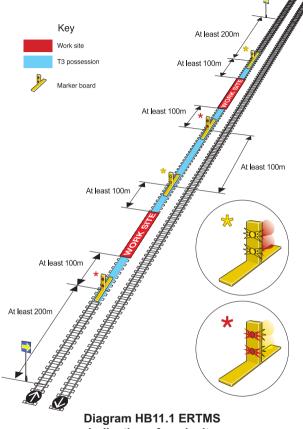
The first WSMB at each end must be positioned so that it is on the possession side of both the block marker protecting the entrance and the block marker protecting the exit.

You must record the exact location of each WSMB on your RT3198 ERTMS form.

WSMBs must be provided unless there are no engineering trains or OTP within the possession.

The arrangements for WSMBs are shown in diagram HB11.1 ERTMS.

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### 6.3 When possession procedure T3-A is being used

Where possession procedure T3-A is used as shown in section 4.5, you must make sure the T-COD is placed at the same time and at the same place as the first WSMB in the normal direction of travel.

You must get the signaller's permission before a T-COD is placed on the line.

When the T-COD has been placed, you must get an assurance from the signaller that the track circuit concerned is showing occupied.

### 6.4 Allowing work to start inside the work site

When the ES or SWL tells you the WSMB at each end of the work site is in position, you must dictate the details to the ES who will fill in a Work-site Certificate (RT3199 ERTMS).

You must include all details including the arrangements made for each level crossing within that work site.

The ES or SWL will read back the details to you.

When you are satisfied that all details are in order for the work to start, you must give the ES or SWL your full initials and authorise the work to start.

You must record the details on your RT3198 ERTMS form.

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## 6.5 Carrying out signalling work within the possession

You must not allow signalling work to be carried out if it would affect the route barring or the functioning of the balises protecting the exits from the possession.

#### 6.6 When a work site is suspended

If the ES or SWL tells you the work site has been suspended but the WSMBs are to stay in place, you must record the details on your RT3198 ERTMS form.

You must not allow a movement to pass a WSMB into a work site where work is suspended.

# 7 Allowing work outside a work site

You may allow a COSS or IWA to set up a safe system of work that uses warning of approaching trains in the area between work sites.

You must make sure the COSS or IWA fully understand the details of the possession, including the time the possession is to be given up.

You must instruct each COSS or IWA that engineering trains or OTP may approach at any time and at a speed of up to 40 km/h (25 mph) in either direction on any line under possession.

> You must not give permission for a COSS or IWA to work between the protecting block marker or points and the first WSMB, or between the last WSMB and the block marker or points beyond the possession.

You must record the details, including the name of each COSS or IWA on your RT3198 ERTMS form.

You must not give up the possession until each COSS or IWA involved has told you they no longer need to rely on the possession arrangements.

### 8 Train movements

#### 8.1 General

#### **Entering the possession**

The signaller must keep the routes closed leading to the possession. The signaller will authorise the driver of each train entering the possession to proceed to the first WSMB.

The signaller will get your permission before doing this.

Only the ES or SWL can authorise train movements into a work site.

Only you can authorise train movements through points and crossings protecting the possession at an intermediate point.

#### Points within the possession

If there are any unworked points within the possession, you must arrange for them to be secured if necessary, before a movement is made over them. I

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You must record the details on your RT3198 ERTMS form.

Before you authorise any movement, you must make sure any points in the route are in the correct position.

If the MC with an item of OTP tells you that the OTP cannot be relied upon to operate train-operated points, you must make sure that any such points are correctly secured before authorising the OTP to pass over them in the trailing position.

# Instructions to drivers and machine controllers

You must instruct the driver of each engineering train, or the MC of each item of OTP, to make each rail movement at caution and to be prepared to stop within the distance that can be seen to be clear.

You must check the driver or MC clearly understands the location the movement is to proceed to.

You must tell the driver or MC the location of any permissible speed or temporary speed restriction lower than 40 km/h (25 mph) on the portion of line concerned.

# Competent person passing on your instructions

If you use someone else to give your instructions to the driver or MC, you must make sure the person:

- is competent to do so
- fully understands the instructions to pass on
- · does not travel in the driving cab with the driver.

**Block markers within the possession** Drivers and MCs will not pass a block marker without verbal authority.

You are responsible for giving this authority within the possession outside work sites and the ES or SWL is responsible for doing this within their work site.

#### Vehicles left outside a work site

You must make sure a red light is showing at both ends of any vehicles stabled or detached outside a work site.

You must not allow a train to be left, or vehicles to be detached, between the WSMB and the block marker or points protecting the possession at either end.

#### **Recording details of movements**

You must record the time you authorise each movement. You must also record the time you are told when a movement has been completed.

### 8.2 Entering the possession at the first WSMB

Before you give the signaller permission to let an engineering train proceed towards the first WSMB, you must make sure:

- · the first WSMB is in place
- you have not authorised a conflicting movement.

You must make sure the first WSMB is not removed until the engineering train has stopped at it.

When the engineering train has entered the possession, you must arrange for the first WSMB to be replaced immediately.

When the WSMB has been replaced you must tell the signaller.

#### 8.3 Entering the possession at an intermediate point between work sites

Before you give the signaller permission to let an engineering train proceed from the protecting block marker towards the possession, you must make sure:

- you or a competent person sent by you is at the intermediate point to give the instructions to the driver
- you have not authorised a conflicting movement to take place.

Once the engineering train has entered the possession and is clear of the points or crossings at the intermediate point, you must tell the signaller.

The signaller will then return the points to the agreed position.

#### 8.4 Entering the possession at an intermediate point - directly into a work site

Before you give the signaller permission to let an engineering train proceed from the protecting block marker towards the possession, you must make sure:

- the ES or SWL, or a competent person sent by the ES or SWL, is positioned at the intermediate point to give the instructions to the driver
- you or the ES or SWL have not authorised a conflicting movement to take place.

Once the engineering train has entered the possession, you must get confirmation from the ES or SWL that it has entered the work site and is clear of the points or crossings concerned.

You must then tell the signaller that the engineering train is clear of the points or crossings at the intermediate point.

The signaller will then return the points to the agreed position.

# 8.5 Entering the possession from an adjacent siding under possession

If a movement is to enter your possession from an adjacent siding under possession, you must first agree with the signaller and the PICOS how this is to be done.

If the movement is to pass directly from the siding under possession into the work site, you must make sure that:

- the ES, SWL or a competent person sent by the ES or SWL, is positioned at the exit from the siding to give instructions to the driver
- you have not authorised a conflicting movement to take place.

#### 8.6 Leaving a work site

Only you can authorise a movement to leave a work site.

You must not allow the WSMB to be removed until the movement has stopped at it.

The WSMB must be replaced immediately the movement has passed beyond it.

#### 8.7 Moving between work sites

Before you allow a train to proceed from a WSMB to the next work site you must make sure:

- any previous movement authorised over that section of line has passed clear or is at a stand at the WSMB
- you, or a competent person, tell the driver or MC the exact location of the next WSMB or the exact location of any train or vehicle waiting at that WSMB.

#### 8.8 Assisting a failed train, failed OTP or removing a portion of a divided train

You may allow a train to enter an occupied area under your control to assist an OTP or a train that has failed or divided.

Before doing this you must:

- tell the driver of the failed train or MC of the failed OTP not to move the train or OTP until the assisting train or OTP arrives
- give the driver of the assisting train or MC of the assisting OTP the exact location of the failed train or OTP.

#### 8.9 Movement of multiple OTP

If more than one item of OTP is to travel in an area that you control, you may allow them to travel at the same time as long as:

- the details are shown in the method statement
- any previous movement in that area has arrived at the other end or has been shunted clear at an intermediate point
- each MC involved in the movement is given the necessary instructions.

Once you have given authority for the movement to start, you must not allow any other movement in that section until all the OTP in the movement:

- have arrived at the WSMB at the other end of the section, or
- have been shunted clear.

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#### 8.10 Propelling

You must not allow any of the following movements to be propelled unless the details are published in the *Weekly Operating Notice* or the *Engineering Notice* and are shown in the method statement.

- Movements entering the possession.
- Movements within the possession but outside a work site.
- Movements leaving the possession.

If it is necessary to propel when details have not been published, you must get authority from Operations Control before you can allow any of the above movements to be propelled.

#### 8.11 Leaving a possession at the last WSMB

You must tell the signaller when an engineering train is ready to leave the possession.

You must make sure that the WSMB is not removed until the movement has stopped at it and the signaller has given the necessary instructions about the movement.

You must:

- come to a clear understanding with the signaller before giving the driver instructions
- repeat to the driver the instructions given to you by the signaller
- authorise the driver to pass beyond the last WSMB.

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immediately after the train has passed beyond it.

# 8.12 Leaving the possession at an intermediate point

You must tell the signaller when an engineering train is ready to leave a possession at an intermediate point.

You must:

- come to a clear understanding with the signaller before giving the driver instructions
- repeat to the driver the instructions given to you by the signaller.

You must tell the signaller when the movement has passed clear of the points or crossings concerned.

The signaller will then return the points to the agreed position.

# 8.13 Leaving the possession directly into a siding under possession

If a movement is to leave your possession directly into an adjacent siding under possession, you must first agree with the signaller and the PICOS how this is to be done.

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### **9** Movements over level crossings

#### 9.1 Before making a movement

Before authorising any movement that will pass over a level crossing, you must make sure any instructions in this section for the type of level crossing concerned are carried out.

Before the movement takes place, you must give details of the movement to those personnel operating:

- any CCTV, OD or RC level crossing
- other level crossings, if possible.

#### 9.2 AHBC locally controlled

You must tell the driver or MC that the movement must not pass over the crossing unless the crossing attendant is displaying a green handsignal.

#### 9.3 AHBC that is not being locally controlled

OTP must not pass over the level crossing.

You may allow an engineering train that is to pass normally over the level crossing to proceed in a direction for which there are controls.

You must first get permission from the signaller for the movement over the crossing and then tell the driver not to stop specially before passing over the level crossing.

#### 9.4 CCTV, OD or RC locally controlled

You must tell the driver or MC that the movement must not pass over the level crossing unless the crossing attendant displays a green handsignal.

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#### 9.5 CCTV, OD or RC that is not locally controlled

You must not allow any movement in the wrong direction to pass over the level crossing.

For movements in the right direction, you must not authorise the driver or MC to pass the block marker protecting the level crossing until the signaller has told you that the barriers have been lowered for the movement.

You must then tell the driver or MC not to stop specially at the level crossing.

#### 9.6 AOCL or ABCL not switched off

If the crossing has not been switched off as shown in section 5.3, the following must apply.

You must instruct the driver of an engineering train that is to pass over the crossing, to proceed over the crossing only when it is safe to do so.

For any engineering train movements not passing normally over the crossing and for all items of OTP, you must not allow the movement to take place unless:

- · the crossing has been closed to road traffic, or
- a competent person is positioned at the crossing and has stopped road traffic by displaying a red handsignal on both sides of the crossing.

You must instruct the driver or MC to stop at the crossing, sound the horn and then pass over the crossing only when it is safe to do so.

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## 9.7 AOCL and ABCL that has been switched off

If the crossing has been switched off as shown in section 5.3, the following must apply.

#### **During daylight**

You must instruct the driver of an engineering train that is to pass over the crossing to stop the train at the crossing, sound the horn and then pass over the crossing only when it is safe to do so.

The movement of OTP over the crossing must not take place unless:

- the crossing has been closed to road traffic, or
- a competent person is positioned at the crossing and has stopped road traffic by displaying a red handsignal on both sides of the crossing.

You must instruct the MC to stop at the crossing, sound the horn and then pass over the crossing only when it is safe to do so.

#### **During darkness**

The movement of an engineering train or OTP over the crossing must not take place unless:

- · the crossing has been closed to road traffic, or
- a competent person is positioned at the crossing and has stopped road traffic by displaying a red light on both sides of the crossing.

Printing this manual is not permitted Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020 You must instruct the driver or MC to stop at the crossing, sound the horn and then pass over the

#### crossing only when it is safe to do so.

#### 9.8 Manned level crossings

You must instruct the driver or MC to pass over the level crossing only if the level crossing barriers or gates are closed to road traffic.

If it is a traincrew-operated (TMO) crossing, you must make sure that a competent person is available to operate the level crossing, before authorising the driver or MC to proceed.

#### 9.9 Crossing with red and green lights (R/G)

You must instruct the driver or MC to stop at the crossing, sound the horn and then pass over the crossing only when it is safe to do so.

#### 9.10 Barrow or foot crossings with white light indicators

You must instruct the driver or MC to pass over the crossing only when it is safe to do so.

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# **10** Changing the possession limits

#### **10.1** When the limits may be changed

The limits of the possession may be shortened or lengthened as long as:

- the details of the changed limits, including the planned time, are published in the *Weekly Operating Notice* or *Engineering Notice*, or
- in exceptional circumstances, when agreed by Operations Control.

#### **10.2** Setting up another work site

If it is necessary to set up another work site on the approach to the first WSMB or beyond the last WSMB, you must first get the signaller's permission to do so.

You must tell the signaller the exact location (mileage or kilometres and metres) of the new WSMB before allowing any further train movements.

The signaller must not give you permission to set up another work site until any movement already authorised has passed clear of the area concerned.

If possession procedure T3-A is being used, you must make sure a T-COD is placed on the line at the same time and place as the new first WSMB, as shown in section 6.3.

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#### **10.3 Recording the details**

You must record the changed details on the RT3198 ERTMS form.

### **11**Change of personnel

#### **11.1 Change of PICOP**

If you are going off duty, you must:

- tell the new PICOP about the possession arrangements
- hand the RT3198 ERTMS form to the new PICOP
- tell the signaller the name of the new PICOP.

If you are the new PICOP, you must sign the RT3198 ERTMS form.

#### **11.2 Change of ES or SWL**

The ES or SWL will tell you the name of the new ES or SWL if there is a change. You must record the details on the RT3198 ERTMS form.

### **12** Giving up the possession

#### **12.1** Making sure the work is complete

When each ES or SWL gives you an assurance that work is complete at their work site, you must tell them to remove the WSMBs.

You must not give permission to remove the WSMBs if you have given permission for a movement to proceed towards the work site.

If, under possession procedure T3-A, a T-COD was placed at the WSMB, you must make sure this is removed at the same time as the WSMB is removed.

If the WSMBs removed are the first or last within the possession, you must immediately tell the signaller the exact location (mileage or kilometres and metres) of the new first or last WSMB.

When the ES or SWL tells you the WSMBs have been removed, you must record the details on the RT3198 ERTMS form.

When each IWA or COSS who is relying upon the possession arrangements in your area of control tells you they no longer need the possession arrangements, you must record the name of each IWA or COSS and the time on your RT3198 ERTMS form.

# **12.2** Giving up the possession around an engineering train

You may give up the possession with an engineering train standing at a block marker on the line under possession, as long as all of the following apply.

- The train is standing at a location where the detection is by means of track circuits and not by axle counters.
- The movement, after the possession is given up, will be in the normal signalled direction and will be driven from the leading cab.

You must make sure:

- the block marker to be used is agreed with the signaller
- all personnel on the engineering train are told that the possession is to be given up and the line must be considered open.

You must not start the arrangements to give up the possession until the signaller has confirmed that the engineering train has arrived at the agreed block marker.

#### **12.3 Removing the possession arrangements**

When every ES or SWL has removed their WSMBs and each IWA or COSS working in your area of control has told you they no longer need your protection, you must tell the signaller you are ready to give the possession up. Printing this manual is not permitted Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020 You must then arrange for any disconnection made under possession procedure T3-D to be reconnected or for any route barring carried out under possession procedure T3-E to be restored.

You must arrange to release any unworked points or train-operated points that have been secured.

#### 12.4 Telling the signaller the possession is no longer needed

You must tell the signaller that the line is clear and safe for trains to run on (or if section 12.2 applies, clear and safe other than the engineering train standing at the agreed block marker) when:

- any disconnections made under possession procedure T3-D have been reconnected
- any route barring carried out under possession procedure T3-E has been reconnected
- any unworked points or train operated points that had been secured have been released.

#### **12.5** Confirming the possession is given up

You must record the details on the RT3198 ERTMS form.

You must ask the signaller to read back the entry in the Train Register.

If you agree with the entry in the Train Register, this is confirmation that the possession has been given up.





Rule Book

Handbook

Duties of the engineering supervisor (ES) or safe work leader (SWL) in a possession

### Issue 8



September 2020 Comes into force 05 December 2020



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### 1 Definitions

#### Driver

This includes an operator of an on-track machine.

#### **Engineering train**

This includes on-track machines but does not include on-track plant.

#### Machine controller (MC)

The person with overall responsibility for the safe operation of OTP and will be identified by an armlet or badge with MACHINE CONTROLLER or MC in black letters on a white background.

When the MC is also competent as a crane controller, they will instead wear an armlet or badge with CRANE CONTROLLER or CC in black letters on a white background.

#### **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.

#### Person in charge of loading and unloading

The person who is responsible for the movement of an engineering train while it is being loaded or unloaded within the work site.

#### Person in charge of the siding possession (PICOS)

The person responsible for taking and supervising a possession of a siding.

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#### Train

This includes a light locomotive, self-propelled rail vehicle, on-track machine, an RRV in rail mode and a RMMM.

### 2 Competence and identification

To act as the engineering supervisor (ES) or safe work leader (SWL), you must have with you a valid certificate of competence issued by your employer.

When you are carrying out the duties of the ES or SWL, you must wear an armlet on the left arm or a badge on the upper chest.

If you are the ES the armlet or badge must have ENGINEERING SUPERVISOR in blue letters on a yellow background.

If you are the SWL the armlet or badge must have SWL in blue letters on a yellow background.

### **3** Setting up the work site

#### **3.1** Arranging to set up the work site

You must contact the PICOP and state the published possession reference if there is one and then confirm:

- the line on which you will be setting up your work site
- the exact mileage of each work-site marker board (WSMB)
- whether the work site is to be taken around one or more trains
- the arrangements to be applied for every level crossing within the work site.

# **3.2** Setting up or extending the work site around one or more engineering trains

When the work site will be taken or extended around an engineering train, before you can proceed any further with setting up or extending the work site the PICOP must tell you when every train concerned is at a stand at its specified signal, block marker or flexible train arrival point (FTAP).

You must not allow any of these trains to move again until the WSMBs are in place and all the necessary arrangements for the work site have been made.

There is no limit to the number of engineering trains the work site can be set up or extended around, as long as the details have been published in the *Weekly Operating Notice* or *Engineering Notice*.

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#### **3.3 Setting up the work site**

When the PICOP authorises you to set up your work site, you may allow duties relating to the isolation of AC OLE or DC CRE equipment to start and for the placing of WSMBs.

You must not allow any other work to start until the PICOP has given you permission to do so.

# **3.4 Indicating the work site (Diagram HB12.1)**

You must provide WSMBs if there are engineering trains or OTP within the possession.

You must place a WSMB in the 'four-foot' 100 metres (approximately 100 yards) from each end of the work site at the agreed mileage.

You must record the exact location of each WSMB on the Work-site Certificate (RT3199).

WSMBs must be positioned so that the red lights will be visible to the driver of a train approaching the work site and the yellow lights will be visible to the driver of a train leaving the work site.

If your work site will be close to the detonator protection for the possession, the WSMB must normally be placed at least 100 metres (approximately 100 yards) from that detonator protection.

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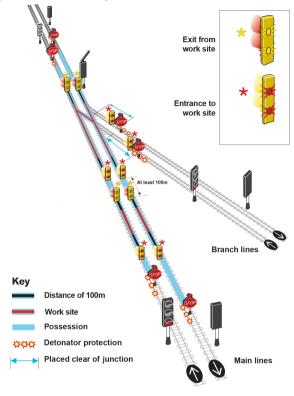


Diagram HB12.1 Indication of work sites

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If due to the work, this 100-metre distance cannot be achieved, the following must apply.

- The WSMB must be placed at the detonator protection.
- Any train movements approaching that WSMB from within the work site, must only be made as shown in section 6.5.

If WSMBs are not provided, you must not allow any work to take place within 200 metres (approximately 200 yards) of the detonator protection.

#### 3.5 When the work site is set up

You must tell the PICOP when the WSMB at each end of your work site are in position.

The PICOP will dictate the necessary details to you.

You must record these details on your RT3199 certificate.

The details must include the arrangements made for each level crossing within the work site.

You must read the details back to the PICOP.

When the PICOP is satisfied that all details are in order for the work to start, you will be given the PICOP's full initials and authority to allow work to start.

You must enter these details on your RT3199 certificate.

You may now consider the work site granted.

# 4 Agreeing the safe system of work with each COSS/IWA

#### 4.1 Allowing work to take place

When the work site has been granted, you may allow work to take place.

Before starting work, you must give each COSS and each IWA a work-site briefing.

You must agree with each COSS and each IWA:

- · the limits of their site of work
- the nature of the work, and
- the safe system of work they will use.

You must enter the agreed details on your RT3199 certificate and get the COSS or IWA to sign it.

## 4.2 Agreeing the arrangements before the work site is granted

**Note:** this arrangement is only permitted where it has been planned and published in advance and you and the IWA or COSS are aware of what is to happen.

You may give the work-site briefing, reach the agreement specified in section 4.1 with each IWA or COSS and get their signature on your RT3199 certificate before the work site is granted.

You must not allow work to start until you have told each IWA or COSS that the work site has been granted.

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You must then give each COSS or IWA an authority number.

You must record the authority number on your RT3199 certificate.

#### 4.3 Safe system of work where all lines are blocked (Safeguarded)

Before the IWA/COSS can treat their safe system of work as safeguarded, they must agree with you that:

- there will be no engineering train or OTP movements at their site of work, or
- if there are engineering train or OTP movements, they will be made at no greater than 5 mph (10 km/h).

# **4.4 Safe system of work using a safety barrier (Fenced)**

Before the COSS/IWA can treat their safe system of work as fenced, there must be a safety barrier as shown in handbook 6 or handbook 7 between their site of work and any open line.

They must agree with you that:

- there will be no engineering train or OTP movements at their site of work, or
- if there are engineering train or OTP movements, they will be made at no greater than 5 mph (10 km/h).

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#### 4.5 Safe system of work (separated)

Before the COSS/IWA can treat their safe system of work as separated, they must agree with you that:

- there will be no engineering train or OTP movements at their site of work, or
- if there are engineering train or OTP movements, they will be made at no greater than 5 mph (10 km/h).

A person acting as an IWA cannot use this safe system of work with site wardens in your work site.

#### 4.6 Safe system of work using equipment warning

The COSS/IWA can use equipment warning for the lines open to traffic as long as the equipment will provide an adequate warning of each train approaching on the line or lines concerned.

Equipment warning must not be used on any line within the work site.

# 4.7 Safe system of work using lookouts (Lookout warning)

The COSS may use lookout warning as shown in handbook 7 for any line within the work site.

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During darkness, poor visibility, or when in or near a tunnel, the COSS may only use lookout warning if:

- you agree that all movements within the work site will be made at a speed no greater than 20 mph (30 km/h)
- the maximum speed of trains on any open line is no greater than 20 mph (30 km/h)
- only site lookouts are needed to achieve the required sighting distance.

A person acting as an IWA cannot use this safe system of work in your work site.

## 5 Arrangements for level crossings

#### 5.1 General

You must not allow any engineering train or OTP movement to take place, or any work to be carried out, that will affect the operation of any level crossing unless the PICOP has made the necessary arrangements for that level crossing.

The PICOP will tell you what arrangements have been made for each level crossing within your work site as shown in section 5.2, 5.3 and 5.4.

You must record these details on your RT3199 certificate.

#### **5.2** Automatic half-barrier crossing (AHBC)

The PICOP will make sure an attendant has been appointed and local control taken at each AHBC throughout the time the possession is in place.

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#### Exceptions

The PICOP will not do this if:

- the crossing controls will not be activated by the work
- the only movements over the crossing will be engineering trains passing normally in a direction provided with controls
- it is shown in the notices that the AHBC need be on local control only while it is affected by the work or train movements.

#### **5.3** Automatic barrier crossing locally monitored (ABCL) and automatic open crossing locally monitored (AOCL)

The PICOP will make sure the road traffic signals are switched off and the audible warnings disconnected at each ABCL and AOCL throughout the time the possession is in place.

The PICOP will also make sure the barriers are kept in the raised position at each ABCL.

#### Exceptions

The PICOP will not do this if:

- the crossing controls will not be activated by the work
- the only movements over the crossing will be engineering trains passing normally in a direction provided with controls.

#### 5.4 Barrier crossing with closed-circuit television (CCTV), barrier crossing with obstacle detection (OD) or remotely controlled crossing with barriers (RC)

The PICOP will make sure an attendant has been appointed at each CCTV, OD or RC crossing throughout the time the possession is in place.

#### Exceptions

The PICOP will not do this if:

- the crossing controls will not be activated by the work
- the only movements over the crossing will be trains passing normally in the right direction
- it is shown in the notices that a crossing attendant needs to be at the CCTV, OD or RC crossing only while it is affected by the work or train movements.

## 6 Train movements

#### 6.1 General

#### Points within the work site

Before you authorise any movement, you must make sure that any points in the route are in the correct position.

If the MC with an item of OTP tells you that the OTP cannot be relied upon to operate train-operated points, you must make sure any of these points are correctly secured before authorising the OTP to pass over them in the trailing position.

**Instructions to drivers and machine controllers** Only you can authorise a movement to enter the work site or a movement to be made within the work site.

You must instruct the driver of each train, or the MC of each item of OTP to make each rail movement.

You must give the exact location the movement is to proceed to.

You must check that the driver or MC clearly understands the location the movement is to proceed to.

#### Competent person passing on your instructions

If you use someone else to give your instructions to the driver or MC, you must make sure the person:

- is competent to do so
- fully understands the instructions to pass on
- does not travel in the driving cab with the driver.

#### Train speed within the work site

You must include instructions to the driver or MC on what speed to make the movement. This will depend on any agreement you have made with IWAs or COSSs working in your work site, as shown in section 4.

However, the actual speed will depend on:

- how far the driver or operator can see to be clear
- the distance needed to stop short of any obstruction or handsignal
- the instructions you give the driver or MC.

After you have given specific instructions to the driver or machine controller, you may allow movements to run at caution above 5 mph (10 km/h).

You must tell the driver or MC that the movement must be made at no greater speed than 5 mph (10 km/h) through the site of work if you have agreed this with an IWA or COSS.

If you have agreed that the COSS will use lookout warning during darkness or where the site of work is in or near a tunnel, you must instruct the driver or MC that the movement must be made at no greater speed than 20 mph (30 km/h) through the site of work.

#### Signals or block markers within the work site

The 'normal' meaning of a proceed signal does not apply within a possession as the signalling is suspended.

However, drivers and MCs will not pass a signal at danger or a block marker without verbal authority.

You are responsible for giving this authority within the work site.

#### **Recording details of movements**

You must record the time you authorise each movement. You must also record the time you are told when a movement has been completed. Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020

#### 6.2 Entering the work site

You must not allow the WSMB to be removed until the movement has stopped at it.

When the movement has entered the work site, you must make sure the WSMB is immediately replaced.

When the WSMB has been replaced you must tell the PICOP.

# **6.3 Entering the work site at an intermediate** point

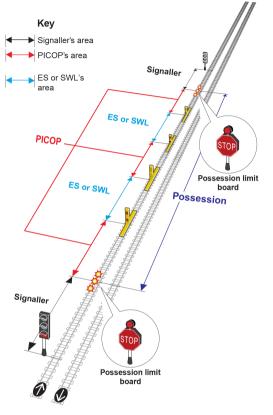
Before the PICOP gives the signaller permission to let an engineering train proceed from the protecting signal or block marker towards the possession, the PICOP will make sure:

- you, or a competent person sent by you, is positioned at the intermediate point to give the instructions to the driver
- you have not authorised a conflicting movement to take place.

Once the engineering train has entered the work site and is clear of the points or crossings, you must tell the PICOP.

The signaller will then return the points to the position agreed with the PICOP.

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#### Diagram HB12.2 Areas of responsibility

## 6.4 Entering the work site from an adjacent siding under possession

If a movement is to enter your work site from an adjacent siding under possession, you must first agree with the PICOP and the person in charge of the siding possession (PICOS) how this is to be done.

The PICOP will make sure that you, or a competent person sent by you, is positioned at the exit from the siding to give instructions to the driver.

You must make sure that you have not authorised a conflicting movement to take place.

# **6.5** Movements towards the WSMB when it is at the detonator protection

You must not allow any movement to approach the WSMB until the PICOP has given you permission to do so.

You must then tell the PICOP immediately the movement has been completed.

#### 6.6 Movement leaving the work site

When a movement is ready to leave the work site, you must tell the PICOP.

You must not remove the WSMB until the movement is at a stand at it and the PICOP has given the driver or MC the necessary instructions.

# 6.7 Engineering train leaving the work site at an intermediate point

If an engineering train is to leave the work site at an intermediate point, the signaller will give the driver the necessary instructions.

You must tell the PICOP when the movement has passed clear of the points or crossings.

The signaller will then return the points to the position agreed with the PICOP.

## 6.8 Leaving the work site directly into a siding under possession

If a movement is to leave your work site directly into an adjacent siding under possession, you must first agree with the PICOP and the PICOS how this is to be done.

## 7 Movements over level crossings

#### 7.1 Before making a movement

Before authorising any movement that will pass over a level crossing, you must make sure any instructions in this section for the type of level crossing concerned are carried out.

Before the movement takes place, you must give details of the movement to those personnel operating:

- any CCTV, OD or RC level crossing
- other level crossing, if possible.

#### 7.2 AHBC locally controlled

You must tell the driver or MC that the movement must not pass over the crossing unless the crossing attendant is displaying a green handsignal.

#### 7.3 AHBC that is not being locally controlled

OTP must not pass over the level crossing.

You may allow an engineering train that is to pass normally over the level crossing to proceed in a direction for which there are controls.

You must first get permission from the signaller for the movement over the crossing and then tell the driver not to stop specially before passing over the level crossing.

#### 7.4 CCTV, OD or RC locally controlled

You must tell the driver or MC that the movement must not pass over the crossing unless the crossing attendant is displaying a green handsignal.

# 7.5 CCTV, OD or RC that is not locally controlled

You must not allow any movement in the wrong direction to pass over the level crossing.

For other movements, you must not authorise the driver or MC to pass the signal or block marker protecting the level crossing until the signaller has told you that the barriers have been lowered for the movement.

You must then tell the driver or MC not to stop specially at the level crossing.

#### 7.6 AOCL or ABCL not switched off

If the crossing has not been switched off as shown in section 5.3, the following must apply.

You must instruct the driver of an engineering train that is to pass over the crossing normally, to proceed over the crossing only when it is safe to do so.

For any engineering train movements not passing normally over the crossing and for all items of OTP, you must only allow the movement to take place if:

- · the crossing has been closed to road traffic, or
- a competent person is positioned at the crossing and has stopped road traffic by displaying a red handsignal on both sides of the crossing.

You must instruct the driver or MC to stop at the crossing, sound the horn and then pass over the crossing only when it is safe to do so.

#### 7.7 AOCL or ABCL that has been switched off

If the crossing has been switched off as shown in section 5.3, the following must apply.

#### **During daylight**

You must instruct the driver of an engineering train that is to pass over the crossing to stop the train at the crossing, sound the horn and then pass over the crossing only when it is safe to do so.

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The movement of OTP over the crossing must not take place unless:

- the crossing has been closed to road traffic, or
- a competent person is positioned at the crossing and has stopped road traffic by displaying a red handsignal on both sides of the crossing.

You must instruct the MC to stop at the crossing, sound the horn and then pass over the crossing only when it is safe to do so.

#### **During darkness**

The movement of an engineering train or OTP over the crossing must not take place unless:

- the crossing has been closed to road traffic, or
- a competent person is positioned at the crossing and has stopped road traffic by displaying a red handsignal on both sides of the level crossing.

You must instruct the driver or MC to stop at the crossing, sound the horn and then pass over the crossing only when it is safe to do so.

#### 7.8 Manned level crossings

You must instruct the driver or MC to pass over the level crossing only if the level crossing barriers or gates are closed to road traffic.

If it is a traincrew-operated (TMO) crossing, you must make sure that a competent person is available to operate the level crossing, before authorising the driver or MC to proceed. Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020

# **7.9** Crossing with red and green warning lights (R/G)

You must instruct the driver or MC to stop at the crossing, sound the horn and then pass over the crossing only when it is safe to do so.

#### 7.10 Barrow or foot crossings with white light indicators

You must instruct the driver or MC to pass over the crossing only when it is safe to do so.

### 8 Change of personnel

#### 8.1 Change of ES or SWL

If you are going off duty, you must:

- tell the new ES or SWL about the work-site arrangements
- hand your RT3199 certificate to the new ES or SWL
- tell the PICOP the name of the new ES or SWL.

If you are the new ES or SWL, you must sign the RT3199 form.

#### 8.2 Change of COSS

If there is a change of COSS, the new COSS must sign your RT3199 certificate when taking duty. You must give the new COSS a work-site briefing.

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## 9 Suspending the work site

If you are to suspend the work site, you must:

- leave the WSMBs in place
- tell the PICOP the work site has been suspended
- record the details on your RT3199 certificate.

## **10** Giving up the work site

#### **10.1** Normal arrangements

When each COSS/IWA no longer needs to be on or near the line, or they are sure the work may safely continue without the protection provided by you, the COSS/IWA will tell you and sign your RT3199 certificate.

# **10.2** Arrangements where the COSS or IWA is to telephone the ES or SWL

**Note:** this arrangement is only permitted where it has been planned and published in advance and you and the COSS or IWA are aware of what is to happen.

When each COSS or IWA no longer needs to be on or near the line, or they are sure the work may safely continue without the protection provided by you, the COSS or IWA will tell you:

- their name
- the location of their work
- their authority number
- that they no longer need protection.

You must record the details on your RT3199 certificate.

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#### 10.3 When every COSS or IWA no longer needs protection

You must ask the PICOP for permission to remove your WSMBs when the line is clear of all engineering trains or OTP (apart from any engineering train that the possession will be given up around) and every COSS or IWA has:

- stated that they no longer need your protection
- signed your RT3199 certificate (as shown in section 10.1) or phoned you, giving their authority number, as shown in section 10.2.

You can give up the work site with an engineering train standing at a signal or block marker that is within the work site, only if all the following apply.

- The line is signalled by track circuit block or ERTMS and the train is standing at a location where train detection is by track circuits and not by axle counters.
- The movement, after the possession is given up, will be in the normal signalled direction and will be driven from the leading cab.

If the possession is to be given up with an engineering train standing at a signal or block marker that is within the work site, you must tell the driver:

- the work-site marker boards are being removed and the work site given up
- not to make any further movement until the signaller tells the driver to proceed.

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When you have removed all of the WSMBs, you must tell the PICOP that the work site is given up and one of the following applies.

- As far as you are concerned, the line is safe and clear.
- The line is clear except for an engineering train standing at a signal or block marker where the possession will be given up around it.

You must record the details on your RT3199 certificate.

## **11** Protection zones

#### **11.1 Setting up the protection zone**

You can only set up a protection zone (PZ) if details have been published in the Weekly Operating Notice or Engineering Notice.

You must contact the signaller who controls the signal protecting the portion of line where the PZ is to be set up.

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You must state the published PZ reference, if there is one, and then agree with the signaller:

- the line you will be setting the PZ up on
- the locations the work will take place between
- whether the PZ will be set up around a train
- the signal leading to the PZ that will be kept at danger
- the exit signal beyond the PZ that will be kept at danger
- the limits of the PZ, which must be from at least 400 metres (440 yards) beyond the protecting signal to at least 200 metres (200 yards) before reaching the exit signal
- the signals that may need to be passed at danger within the PZ, and that you can give the driver authority to do so
- that wrong-direction movements may be necessary towards the start of the PZ and that you can give the driver permission to make those movements
- what type of additional protection will be used.

## **11.2** Setting up a PZ around an engineering train

When the PZ is to be set up around an engineering train, the signaller must tell you when the train concerned is at a stand at its specified signal or flexible train arrival point (FTAP) location shown in the notices.

You must not allow the train to move again until the PZ has been granted and all the necessary arrangements have been made.

#### **11.3** Arranging the additional protection

If additional protection will be provided by disconnecting signalling equipment, the signaller will agree the necessary disconnections with the signalling technician.

The signaller will tell you when the disconnections have been made.

You can use a track circuit operating device (T-COD) as additional protection only if all the following conditions apply.

- Using a T-COD at a particular location is authorised by the Sectional Appendix.
- The signalling equipment is working normally.
- The work will not affect the operation of the track circuit concerned.

When the signal protecting the PZ has been placed to danger, the signaller will check that the track circuit concerned is showing clear. The signaller will then give you permission to place the T-COD on the line or to activate it.

When you have placed the T-COD on the line or activated it, you must tell the signaller. The signaller will check that the track circuit is showing occupied.

When the signaller is sure that the line is properly protected and the signal beyond the PZ has been placed to danger, the signaller will tell you that the PZ has been granted.

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#### **11.4** Allowing work to take place

When the PZ has been granted, you may allow work to take place.

Before starting work, you must give each COSS and each IWA a work-site briefing.

You must agree with each COSS and each IWA:

- the limits of their site of work
- the nature of the work
- the safe system of work they will use.

You must enter the agreed details on your RT3199 certificate and get the COSS or IWA to sign it.

#### **11.5** Train movement entering the PZ

The only trains that you can allow to enter the PZ are:

- the engineering train that is to work within the PZ
- an on-track machine that is to work as part of the same engineering work.

When the train arrives at the protecting signal, the signaller will ask you:

- for permission to allow the train to enter the PZ
- how far the train can proceed, either to a signal or to an FTAP.

Before you give permission for the train to enter the PZ, you must tell any COSS or IWA who is sharing your protection about the movement, and make sure that it is safe for the train to approach. Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020

#### **11.6** Movements within the PZ

Only you can authorise the movement of a train within the PZ.

When the train has arrived at the specified signal or FTAP, you must make sure that the driver, and anyone else travelling on the train, knows:

- that they are within a PZ
- the limits of the PZ
- that only you can authorise any movement within the PZ.

Before you authorise any movement within the PZ, you must tell any COSS or IWA who is sharing your protection about the movement, and make sure it is safe for the train to approach.

You must tell the driver:

- where the train is required to move to
- to pass any signals at danger when necessary
- not to make any further movement until you authorise them to do so.

You can authorise a driver to make a wrong-direction movement when necessary, but you must make sure that any wrong-direction movement will not bring the train within 400 metres (440 yards) of the protecting signal.

#### **11.7** Movement leaving the PZ

When a train is ready to leave the PZ, you must tell the signaller.

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Before you authorise the train to move, you must tell any COSS or IWA who is sharing your protection about the movement and make sure it is safe for the train to approach.

You must tell the driver:

- to proceed to the end of the PZ which is 200 metres (200 yards) before the exit signal
- to stop there and contact the signaller.

#### **11.8** Giving up the PZ

You can give up the PZ when:

- all trains have left the PZ
- each COSS or IWA has told you that they no longer need to be on or near the line, or they are sure that any work can continue without the protection provided by you.

You must tell the signaller that:

- the work has been completed
- all engineering trains have left the PZ
- all personnel are clear of the line
- additional protection can now be removed.

If additional protection was by disconnecting signalling equipment, the signaller will arrange for the necessary reconnections to be made after the PZ has been given up.

If additional protection was by a T-COD, you must remove or deactivate it. If the track circuit concerned is not showing clear, the signaller will check with you whether it has been removed or deactivated.

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You must then confirm to the signaller that the PZ has been given up.

#### **11.9** Working on the outside of a train

You must ask the signaller to stop trains on any adjacent line which could put you, a member of traincrew, or anyone else in danger if, while the PZ is set up:

- you or another person has to walk alongside a train
- a person needs to check that the working equipment on an on-track machine (OTM) is correctly positioned.

You must ask for this before you or the other person starts working or walking.

To arrange for trains to be stopped, you must:

- ask the signaller to stop the passage of trains on the line concerned
- get an assurance from the signaller that this has been done
- reach a clear understanding about which lines have been blocked
- reach a clear understanding about which lines will stay open to traffic
- ask the signaller to read back to you the details that have been recorded.

If you are satisfied that the details recorded by the signaller are correct, you must confirm that you understand the arrangements.

The signaller will then give you an authority number. Until you are given this authority number, you must not consider the adjacent line as being blocked.

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If you have arranged to stop the passage of trains for another person to work on the outside of the train or walk alongside it, you must explain the arrangements to that person.

When the work on the outside of the train has finished or you, or the other person have finished walking, you must tell the signaller that the normal passage of trains can be resumed.

You must give the signaller the authority number that you were given.

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Rail Safety and Standards Board Limited The Helicon One South Place London EC2M 2BB Printing this manual is not permitted Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020 GE/RT8000/HB12 ERTMS Rule Book

# Handbook 12 ERTMS

Duties of the engineering supervisor (ES) or safe work leader (SWL) in a possession on ERTMS lines where lineside signals are not provided

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## **1** Definitions

#### Driver

This includes an operator of an on-track machine.

#### **Engineering train**

This includes on-track machines but does not include on-track plant (OTP).

#### Machine controller (MC)

The MC is the person with overall responsibility for the safe operation of OTP and will be identified by an armlet or badge with MACHINE CONTROLLER or MC in black letters on a white background.

When the MC is also competent as a crane controller, they will instead wear an armlet or badge with CRANE CONTROLLER or CC in black letters on a white background.

#### Maximum speed in a possession

Depending on any lower speed that may apply the maximum speed entering, leaving or within a possession is 40 km/h (25 mph).

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

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

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**Person in charge of loading and unloading** The person who is responsible for the movement of an engineering train while it is being loaded or unloaded within the work site.

# Person in charge of the siding possession (PICOS)

The person responsible for taking and supervising a possession of a siding.

#### Train

This includes a light locomotive, self-propelled rail vehicle, on-track machine, an RRV in rail mode and an RMMM.

## 2 Competence and identification

To act as the engineering supervisor (ES) or safe work leader (SWL) you must have with you a valid certificate of competence issued by your employer.

You must wear an armlet on the left arm or a badge on the upper chest when you are carrying out the duties of the ES. The armlet or badge must have ENGINEERING SUPERVISOR in blue letters on a yellow background.

If you are the SWL the armlet or badge must have SWL in blue letters on a yellow background.

### **3** Setting up the work site

### **3.1** Arranging to set up the work site

You must contact the PICOP and state the published possession reference if there is one and then confirm:

- the line on which you will be setting up your work site
- the exact mileage or kilometres and metres of each work-site marker board (WSMB)
- whether the work site is to be taken around one or more trains
- the arrangements to be applied for every level crossing within the work site.

### **3.2 Setting up the work site around one or more engineering trains**

When the work site is to be taken or extended around an engineering train, before you can proceed any further with setting up or extending the work site, the PICOP must tell you when:

- every train concerned is at a stand at its specified block marker
- the possession has been taken.

You must not allow any of these trains to move again until the WSMBs are in place and all the necessary arrangements for the work site have been made.

There is no limit to the number of engineering trains the work site can be set up or extended around, as long as the details have been published in the *Weekly Operating Notice* or *Engineering Notice*.

### **3.3 Setting up the work site**

When the PICOP authorises you to set up your work site you may allow duties relating to the isolation of AC OLE or DC CRE equipment to start and for the placing of WSMBs.

You must not allow any other work to start until the PICOP has given you permission to do so.

# **3.4 Indicating the work site (diagram HB12.1 ERTMS)**

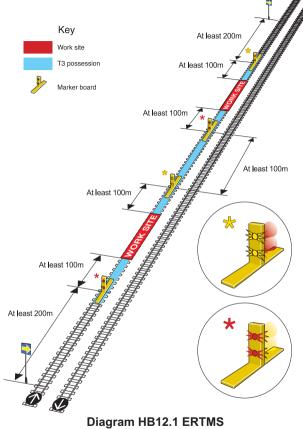
You must place a WSMB in the 'four-foot' 100 metres from each end of the work site at the agreed location.

You must record the exact location of each WSMB on the Work-site Certificate (RT3199 ERTMS).

WSMBs must be positioned so that the red lights will be visible to the driver of a train approaching the work site and the yellow lights will be visible to the driver of a train leaving the work site.

The first and last WSMBs must be positioned at least 200 metres from the protecting block markers.

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Indication of work sites

#### 3.5 When the work site is set up

You must tell the PICOP when the WSMBs at each end of your work site are in position.

The PICOP will dictate the necessary details to you.

You must record these details on your RT3199 ERTMS certificate.

The details must include the arrangements made for each level crossing within the work site.

You must read the details back to the PICOP.

When the PICOP is satisfied that all details are in order for the work to start, you will be given the PICOP's full initials and authority to allow work to start.

You must enter these details on your RT3199 ERTMS certificate.

You may now consider the work site granted.

### 4 Agreeing the safe system of work with each COSS/IWA

#### 4.1 Allowing work to take place

When the work site has been granted, you may allow work to take place.

Before starting work, each COSS and each IWA must receive a work-site briefing from you.

You must agree with each COSS and each IWA:

- the limits of their site of work
- the nature of the work, and
- the safe system of work they will use.

You must enter the details of your agreement on your RT3199 ERTMS certificate and get the COSS/IWA to sign it.

### 4.2 Agreeing the arrangements before the work site is granted

**Note:** this arrangement is only permitted where it has been planned and published in advance and you and the COSS or IWA are aware of what is to happen.

You may give the work-site briefing, reach the agreement specified in section 4.1 with each COSS or IWA and get their signature on your RT3199 ERTMS certificate before the work site is granted.

You must not allow work to start until you have told each COSS or IWA that the work site has been granted.

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You must then give each COSS or IWA an authority number.

You must record the authority number on your RT3199 ERTMS certificate.

#### 4.3 Safe system of work where all lines are blocked (Safeguarded)

Before the COSS/IWA can treat their safe system of work as safeguarded, they must agree with you that:

- there will be no engineering train or OTP movements at their site of work, or
- if there are engineering train or OTP movements, they will be made at caution and at no greater than 10 km/h (5 mph).

# 4.4 Safe system of work using a safety barrier (Fenced)

Before the COSS/IWA can treat their safe system of work as fenced, there must be a safety barrier as shown in handbook 6 or handbook 7 between their site of work and any open line.

They must agree with you that:

- there will be no engineering train or OTP movements at their site of work, or
- if there are engineering train or OTP movements, they will be made at caution and at no greater than 10 km/h (5 mph).

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#### 4.5 Safe system of work using site wardens (Site warden protected)

Before the COSS can treat their safe system of work as 'site warden protected', they must agree with you that:

- there will be no engineering train or OTP movements at their site of work, or
- if there are engineering train or OTP movements, they will be made at caution and at no greater than 10 km/h (5 mph).

A person acting as an IWA cannot use this safe system of work in your work site.

# 4.6 Safe system of work using equipment warning

The COSS/IWA can use equipment warning for the lines open to traffic as long as it will provide an adequate warning of each train approaching on the line or lines concerned.

Equipment warning must not be used on any line within the work site.

# 4.7 Safe system of work using lookouts (Lookout warning)

The COSS may use lookout warning as shown in handbook 7 for any line within the work site.

During darkness, poor visibility, or when in or near a tunnel, the COSS may only use lookout warning if:

- you agree that all movements within the work site will be made at a speed no greater than 30 km/h (20 mph)
- the maximum speed of trains on any open line is no greater than 30 km/h (20 mph)
- only site lookouts are needed to achieve the required sighting distance.

A person acting as an IWA cannot use this safe system of work in your work site.

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# **5** Arrangements for level crossings

### 5.1 General

You must not allow any engineering train or OTP movement to take place, or any work to be carried out, that will affect the operation of any level crossing unless the PICOP has made the necessary arrangements for that level crossing.

The PICOP will tell you what arrangements have been made for each level crossing within your work site as shown in section 5.2, 5.3 and 5.4.

You must record these details on your RT3199 ERTMS certificate.

### 5.2 Automatic half-barrier crossing (AHBC)

The PICOP will make sure an attendant has been appointed and local control taken at each AHBC throughout the time the possession is in place.

### Exceptions

The PICOP will not do this if:

- the crossing controls will not be activated by the work
- the only movements over the crossing will be engineering trains passing normally in a direction provided with controls
- it is shown in the notices that the AHBC need be on local control only while it is affected by the work or train movements.

#### **5.3** Automatic barrier crossing locally monitored (ABCL) and automatic open crossing locally monitored (AOCL)

The PICOP will make sure the road-traffic signals are switched off and the audible warnings disconnected at each ABCL and AOCL throughout the time the possession is in place.

The PICOP will also make sure the barriers are kept in the raised position at each ABCL.

#### Exceptions

The PICOP will not do this if:

- · the crossing controls will not be activated by the work
- the only movements over the crossing will be engineering trains passing normally in a direction provided with controls.

#### 5.4 Barrier crossing with closed-circuit television (CCTV), barrier crossing with obstacle detection (OD) or remotely controlled crossing with barriers (RC)

The PICOP will make sure an attendant has been appointed at each CCTV, OD or RC crossing throughout the time the possession is in place.

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#### Exceptions

The PICOP will not do this if:

- the crossing controls will not be activated by the work
- the only movements over the crossing will be trains passing normally in the right direction
- it is shown in the notices that a crossing attendant need be at the CCTV, OD or RC crossing only while it is affected by the work or train movements.

### 6 Train movements

### 6.1 General

### Points within the work site

Before you authorise any movement, you must make sure that any points in the route are in the correct position.

If the MC with an item of OTP tells you that the OTP cannot be relied upon to operate train-operated points, you must make sure any such points are correctly secured before authorising the OTP to pass over them in the trailing position.

# Instructions to drivers and machine controllers

Only you can authorise a movement to enter the work site or a movement to be made within the work site.

You must instruct the driver of each train, or the MC of each item of OTP, to make each rail movement.

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You must give the exact location the movement is to proceed to.

You must check the driver or MC clearly understands the location the movement is to proceed to.

### Competent person passing on your instructions

If you use someone else to give your instructions to the driver or MC, you must make sure the person:

- is competent to do so
- fully understands the instructions to pass on
- does not travel in the driving cab with the driver.

#### Train speed within the work site

Movements within the work site may run at any speed up to 40 km/h (25 mph). However, the actual speed will depend on:

- · how far the driver or operator can see to be clear
- the distance needed to stop short of any obstruction or handsignal
- the instructions you give the driver or MC.

You must include instructions to the driver or MC on what speed to make the movement. This will depend on any agreement you have made with IWAs or COSSs working in your work site as shown in section 4.

If you have agreed that movements will only be made at caution, you must tell the driver or MC that the movement must be made at caution and at no greater speed than 10 km/h (5 mph) through the site of work.

If you have agreed that the COSS will use lookout warning, during darkness or where the site of work is in or near a tunnel, you must instruct the driver or MC that the movement must be made at no greater speed than 30 km/h (20 mph) through the site of work.

You must tell the driver or machine controller the location of any permissible speed or temporary speed restriction lower than 30 km/h (20 mph) on the portion of line concerned.

#### Block markers within the work site

Drivers and MCs will not pass a block marker without verbal authority.

You are responsible for giving this authority within the work site.

#### **Recording details of movements**

You must record the time you authorise each movement. You must also record the time you are told when a movement has been completed.

#### 6.2 Entering a work site

You must not allow the WSMB to be removed until the movement has stopped at it.

When the movement has entered the work site, you must make sure the WSMB is immediately replaced.

When the WSMB has been replaced you must tell the PICOP.

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#### 6.3 Entering the work site at an intermediate point

Before the PICOP gives the signaller permission to let an engineering train proceed from the protecting block marker towards the possession, the PICOP will make sure:

- you, or a competent person sent by you, is positioned at the intermediate point to give the instructions to the driver
- you have not authorised a conflicting movement to take place.

Once the engineering train has entered the work site and is clear of the points or crossings, you must tell the PICOP.

The signaller will then return the points to the position agreed with the PICOP.

# 6.4 Entering the work site from an adjacent siding under possession

If a movement is to enter your work site from an adjacent siding under possession, you must first agree with the PICOP and the PICOS how this is to be done.

The PICOP will make sure that you, or a competent person you have sent, is positioned at the exit from the siding to give instructions to the driver.

You must make sure that you have not authorised a conflicting movement to take place.

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### 6.5 Not used

### 6.6 Movements leaving the work site

When a movement is ready to leave the work site, you must tell the PICOP.

You must not remove the WSMB until the movement is at a stand at it and the PICOP has given the driver or MC the necessary instructions.

# 6.7 Engineering train leaving the work site at an intermediate point

If an engineering train is to leave the work site at an intermediate point, the signaller will give the driver the necessary instructions.

You must tell the PICOP when the movement has passed clear of the points or crossings.

The signaller will then return the points to the position agreed with the PICOP.

# 6.8 Leaving the work site directly into a siding under possession

If a movement is to leave your work site directly into an adjacent siding under possession, you must first agree with the PICOP and the PICOS how this is to be done.

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### 7 Movements over level crossings

### 7.1 Before making a movement

Before authorising any movement that will pass over a level crossing, you must first make sure any instructions in this section for the type of level crossing concerned are carried out.

Before the movement takes place, you must give details of the movement to those personnel operating:

- any CCTV, OD or RC level crossing
- other level crossings, if possible.

### 7.2 AHBC locally controlled

You must tell the driver or MC that the movement must not pass over the crossing unless the crossing attendant is displaying a green handsignal.

### 7.3 AHBC that is not being locally controlled

OTP must not pass over the level crossing.

You may allow an engineering train that is to pass normally over the level crossing to proceed in a direction for which there are controls.

You must first get permission from the signaller for the movement over the crossing and then tell the driver not to stop specially before passing over the crossing.

### 7.4 CCTV, OD or RC locally controlled

You must tell the driver or MC that the movement must not pass over the crossing unless the crossing attendant is displaying a green handsignal.

# 7.5 CCTV, OD or RC that is not locally controlled

You must not allow any movement in the wrong direction to pass over the level crossing.

For other movements, you must not authorise the driver or MC to pass the block marker protecting the level crossing until the signaller has told you that the barriers have been lowered for the movement.

You must then tell the driver or MC not to stop specially at the level crossing.

### 7.6 AOCL or ABCL not switched off

If the crossing has not been switched off as shown in section 5.3, the following must apply.

You must instruct the driver of an engineering train that is to pass over the crossing normally, to proceed over the crossing only when it is safe to do so.

For any engineering train movements not passing normally over the crossing and for all items of OTP, you must only allow the movement to take place if:

- the crossing has been closed to road traffic, or
- a competent person is positioned at the crossing and has stopped road traffic by displaying a red handsignal on both sides of the crossing.

You must instruct the driver or MC to stop at the crossing, sound the horn and then pass over the crossing only when it is safe to do so.

### 7.7 AOCL or ABCL that has been switched off

If the crossing has been switched off as shown in section 5.3, the following must apply.

### **During daylight**

You must instruct the driver of an engineering train that is to pass over the crossing to stop the train at the crossing, sound the horn and then pass over the crossing only when it is safe to do so.

The movement of OTP over the crossing must not take place unless:

- the crossing has been closed to road traffic, or
- a competent person is positioned at the crossing and has stopped road traffic by displaying a red handsignal on both sides of the crossing.

You must instruct the MC to stop at the crossing, sound the horn and then pass over the crossing only when it is safe to do so.

#### **During darkness**

The movement of an engineering train or OTP over the crossing must not take place unless:

- · the crossing has been closed to road traffic, or
- a competent person is positioned at the crossing and has stopped road traffic by displaying a red handsignal on both sides of the level crossing.

Printing this manual is not permitted Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020 You must instruct the driver or MC to stop at the crossing, sound the horn and then pass over the crossing only when it is safe to do so.

### 7.8 Manned level crossing

You must instruct the driver or MC to pass over the level crossing only if the level crossing barriers or gates are closed to road traffic.

If it is a traincrew-operated (TMO) crossing, you must make sure that a competent person is available to operate the level crossing, before authorising the driver or MC to proceed.

### 7.9 Crossing with red and green lights (R/G)

You must instruct the driver or MC to stop at the crossing, sound the horn and then pass over the crossing only when it is safe to do so.

### 7.10 Barrow or foot crossing with white light indicators

You must instruct the driver or MC to pass over the crossing only when it is safe to do so.

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### 8 Change of personnel

### 8.1 Change of ES or SWL

If you are going off duty, you must:

- tell the new ES or SWL about the work-site arrangements
- hand your RT3199 ERTMS certificate to the new ES or SWL
- tell the PICOP the name of the new ES or SWL.

If you are the new ES or SWL, you must sign the RT3199 ERTMS certificate.

### 8.2 Change of COSS

If there is a change of COSS, the new COSS must sign your RT3199 ERTMS certificate when taking duty. You must give the new COSS a work-site briefing.

### 9 Suspending the work site

If you are to suspend the work site, you must:

- · leave the WSMBs in place
- tell the PICOP the work site has been suspended
- record the details on your RT3199 ERTMS certificate.

### **10** Giving up the work site

### **10.1 Normal arrangements**

When each COSS/IWA no longer needs to be on or near the line, or they are sure the work may safely continue without the protection provided by you, the COSS/IWA will tell you and sign your RT3199 ERTMS certificate.

# **10.2** Arrangements where the COSS or IWA is to telephone the ES or SWLs

**Note**: this arrangement is only permitted where it has been planned and published in advance and you and the COSS or IWA are aware of what is to happen.

When each COSS or IWA no longer needs to be on or near the line, or they are sure the work may safely continue without the protection provided by you, the COSS or IWA will tell you:

- their name
- the location of their work
- · their authority number
- that they no longer need protection.

You must record the details on your RT3199 ERTMS certificate.

# **10.3** When every COSS or IWA no longer needs protection

You must contact the PICOP and ask for permission to remove your WSMBs when the line is clear of all engineering trains or OTP and every COSS or IWA has stated that they no longer need your protection and:

- has signed your RT3199 ERTMS certificate, as shown in section 10.1, or
- has telephoned you, giving their authority number, as shown in section 10.2.

When you have removed all of the WSMBs, you must tell the PICOP that, as far as you are concerned, the line is safe and clear, and your work site is given up.

You must record the details on your RT3199 ERTMS certificate.



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# Handbook 13 Duties of the person in charge of the siding possession (PICOS)

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Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020

### **1** Definitions

### **Designated person**

A designated person (DP) is responsible for setting up protection so that people carrying out work related to maintaining and repairing rail vehicles will be protected from train movements.

### **Engineering train**

This includes on-track machines but does not include on-track plant (OTP).

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

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

### Train

This includes a light locomotive, self-propelled rail vehicle, on-track machine, an RRV in rail mode and an RMMM.

### 2 General

Before allowing engineering work or on-tracking of OTP to take place in a siding or group of sidings, you will be appointed to take possession of the sidings concerned as shown in this handbook.

Wherever possible you should arrange to take possession of the whole of each affected siding.

Printing this manual is not permitted Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020 If a possession of a siding will be taken in association with a possession of an adjacent running line, you may, if competent, also be the person in charge of the possession (PICOP) of that possession or the engineering supervisor (ES) or safe work leader (SWL) of an adjacent work site.

> If you are an IWA, you must not arrange a possession in sidings for the protection of anyone except yourself.

> Local instructions may be published by Network Rail in the *Sectional Appendix* or by the operator of a depot. Those local instructions may modify the arrangements shown in this handbook. You must be aware of and apply these instructions where necessary.

### **3** Competence

To act as a person in charge of a siding possession (PICOS), you must have been passed as competent in the rules shown in this handbook and have with you a valid certificate of competence issued by your employer for either a COSS, IWA or SWL. Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020

### **4** Agreeing the arrangements

### 4.1 Agreement with the person responsible

You must agree the following details with the person who is responsible for the operation of the siding.

- Your name and contact details.
- The location of the siding or sidings involved.
- Whether you will take possession of the whole length of a siding or just part of it.
- Whether you will need to take possession of more than one siding.
- · How you will arrange line protection.
- The date and time you will take possession and by when it will be given up.

### 4.2 Telling the shunter

If involved, you must make sure the shunter is told about the possession arrangements. You do not need to do this yourself if the person responsible for the operation of the siding tells you that they will.

### 4.3 Recording the arrangements

You must record in writing on the document provided by your employer:

- which siding is affected
- the siding-protection arrangements
- the date and time the possession is taken.

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### **5** Protecting the possession

#### 5.1 Possession of the whole length of a siding

Before you allow any work to start or OTP to be placed on the track in the siding, you must arrange the line protection as follows.

- Make sure the points leading to the siding are set to prevent movements from entering the siding.
- · Clip and padlock the points.
- Keep the key to the padlock until the possession is given up.

### 5.2 Possession of part of one siding

If it is not possible to block the whole of the siding, you must make sure that no movement approaches the affected part of the siding by placing line protection in the siding concerned.

The line protection is:

- a sleeper secured across the rails, and
- a possession limit board (PLB), red flag or red light placed at the sleeper so that it may clearly be seen by an approaching movement.

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### **5.3 Points worked from a signal box or ground frame**

If the points leading to the siding are worked from a signal box or ground frame, you must not clip the points. However, you must get confirmation from the signaller or ground frame operator that the points will be kept in the position to prevent movements from entering the siding.

### 5.4 If movements can enter from either end

If movements can enter the siding from either end, you must arrange line protection at both ends.

# 6 Siding next to a running line under possession

### 6.1 Line protection arrangements

If the possession of the siding is taken in association with a possession of an adjacent running line, you do not need to provide line protection to the siding as shown in section 5 unless one of the following applies.

- The siding is a through siding and you need to prevent access at the far end of the siding.
- The possession of the siding will be taken before the adjacent running line possession.

Printing this manual is not permitted Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020 When possession of the siding will be kept after the adjacent running line possession is given up, you must make sure line protection is provided before the adjacent running line possession is given up.

### 6.2 Movements to or from the running line under possession

If the siding is to be used to allow movements to enter or leave an adjacent possession, you must agree with the PICOP, ES or SWL, as appropriate, and the signaller or ground frame operator, if involved, how this will be done.

You must make suitable arrangements for the safety of your group and any other group or individual who is working under the protection of your possession while movements take place.

If points have been secured to protect the possession, you must make sure the points are again secured once the movement has been completed.

## 7 Allowing work to start

When you have completed the arrangements for taking possession of the siding, you may allow your group, or another group or individual, to start work in the siding, or allow OTP to be on-tracked.

You must record the name and contact number of any other COSS, DP, IWA or SWL to whom you give permission to share your protection.

You must brief anyone who is permitted to share your protection about the limits and any known hazards.

This section 7 does not apply to an IWA.

## 8 Change of PICOS

When going off duty, you must give the new PICOS the details about:

- the limits of your possession
- the line-protection arrangements
- any movement that you have authorised which has not been completed
- any other groups or individuals working under your protection.

If you are the new PICOS, you must tell the signaller, if involved.

## **9** Giving up the possession

#### 9.1 Work suspended or completed

Before you make arrangements to give up the possession, you must make sure that:

- the siding is safe for movements
- each COSS, DP, IWA or SWL you have allowed to share your protection has assured you that your protection arrangements are no longer needed
- any OTP have been removed from the siding.

You must then remove any line protection you placed in the siding.

#### 9.2 Telling others

You must tell the following that you have removed the line protection and the possession has been given up.

- The signaller or ground frame operator, if involved.
- The person who is responsible for the operation of the siding.
- The shunter. You do not need to do this yourself if the person responsible for the operation of the siding or the signaller tells you that they will.

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#### 9.3 Recording the arrangements

You must record in writing:

- the date and time at which each COSS, DP, IWA or SWL confirms to you that they no longer need to share your protection
- the date and time the possession is given up.



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# Handbook Handbook 14 Duties of the person in charge of loading and unloading rail vehicles during engineering work

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Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020

### **1** Definitions

#### Driver

This includes an operator of an on-track machine.

#### **Engineering train**

This includes on-track machines but does not include on-track plant (OTP).

## 2 When these instructions apply

These instructions apply to engineering trains when loading and unloading rail vehicles.

# **3** Responsibilities of the person in charge of loading and unloading

You are responsible for:

- the safe loading or unloading of engineering trains, whether stationary or moving
- controlling the movement of engineering trains while they are being loaded or unloaded
- warning everyone who needs to know when vehicles are about to be moved.

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### 4 Agreeing the arrangements

You must come to a clear understanding with the driver, and the shunter, if there is one:

- · when you will take over control of movements
- how you will control the movement
- when control of movements will be returned to the driver or shunter.

## **5** Before moving vehicles

When you have taken control of movements, you must:

- make sure that it is safe for the movement to be made
- warn anyone working near the vehicles to move to a safe position.

## **6** During the movement

You must control train movements as shown in section 9 of this handbook.

You must make sure everyone who may be in danger from the movement is warned, and if necessary you must stop the movement.

## **7** Propelling movements

If the train needs to be propelled, if possible, you must control it from the leading end. If this is not possible, you must arrange for a competent person to:

- ride on the leading vehicle, or
- walk alongside the leading vehicle.

If you are at the leading end of the movement, you must warn everyone on or about the line if they might be put in danger by the movement and, if necessary, stop the movement.

If you have arranged for a competent person to be at the leading end of the movement, you must tell them to do this.

# 8 Loading or unloading during a movement

Items can only be loaded on to or unloaded from a moving train if the vehicles concerned have been designed or equipped for this purpose.

## 9 Controlling movements

#### By handsignals

You must use the handsignals shown in diagram HB14.1 or diagram HB14.2 to control the movement.

You must make sure that no other driver acts on your handsignals.

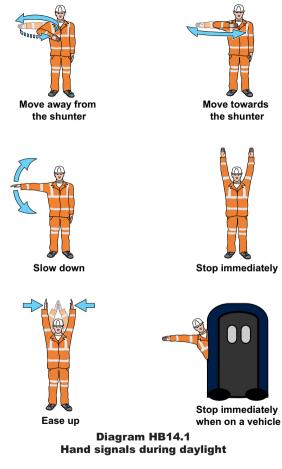
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#### By radio

You must:

- · clearly identify the correct train and driver
- keep in constant communication with the driver throughout each movement
- speak continuously or transmit a continuous bleep signal
- instruct the driver to stop immediately if you notice the transmission is failing.

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Move away from hand signal



Slowly move away from hand signal



Move **towards** hand signal

Slowly move towards hand signal



Diagram HB14.2 Hand signals during darkness or poor visibility

Issue 2



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Rule Book

Handbook

Duties of the machine controller (MC) and ontrack plant operator

#### Issue 5



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Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020

## 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 armlet on the left arm or a badge on the upper chest. The armlet 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 cannot 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 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 badge on your upper body with CRANE CONTROLLER or CC in black letters on a white background.

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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 as 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.

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## **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 signal or 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 and 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
- 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
- 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.

Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020

## 7 Making rail movements

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

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

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

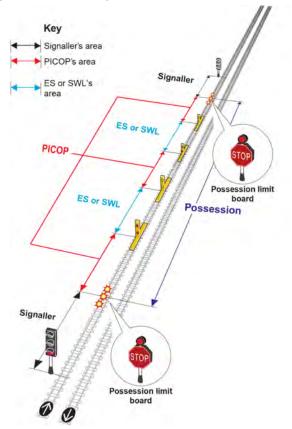
Movements can only enter or take place in a siding when the PICOS gives permission. Only after the PICOS has given permission to the MC, can the MC authorise the OTP movement.

OTP is not allowed outside the protection for any 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.

Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020



#### Diagram HB 15.1

#### Possession of a running line with two work sites

Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020

#### **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 20 mph (30 km/h) 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 5 mph (10 km/h):

- 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 25 mph (40 km/h).

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 10 mph (15 km/h).

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#### 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 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 can 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.

Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020

#### 7.8 Riding on OTP

Nobody must ride on OTP or any vehicle attached to it unless the OTP 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 cannot 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.

Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020

#### 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 Signals and block markers

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

#### 7.12 Work-site marker boards

The MC must 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 must 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 of 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 can 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.

Supersedes GERM8000-possessionworkers lss 4 with effect from 05/12/2020

#### 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

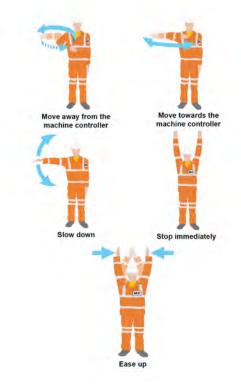
When handsignals are being used to control movements from the ground, the MC must use the handsignals shown in diagram HB15.2 or diagram HB15.3.

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.

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#### **Diagram HB.15.2 Handsignals during daylight**



Slowly move away from the machine controller



Ease up



Slowly move towards the machine controller



Stop immediately

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

Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020

# 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 the line has been blocked by a COSS or SWL and the COSS or SWL 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 can 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 a MC**

Movements can be made without a 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 of where the unaccompanied movement can proceed to.

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 (approximately 100 yards) is kept between the OTP and the OTP ahead.

The speed must not exceed 20 mph (30 km/h) 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

## Notes

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FRTMS Rule Book

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

ERTI Handbook 15



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Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020

# 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 armlet on the left arm or a badge on the upper chest. The armlet 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.

Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020

# **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.

Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020

# 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.

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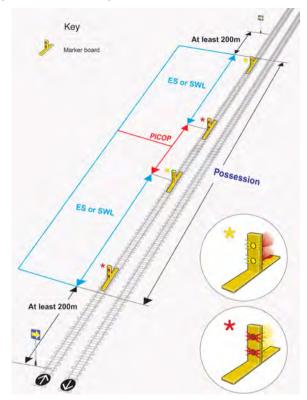


Diagram HB15.1 ERTMS Possession of a running line with two work sites

### 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).

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## 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.

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## 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.

Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020

## 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.

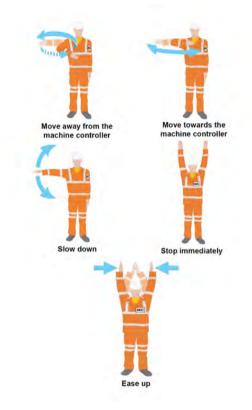
## 9.3 Using handsignals

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



Ease up



Slowly move towards the machine controller



Stop immediately

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

Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020

# 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. Supersedes GERM8000-possessionworkers Iss 4 with effect from 05/12/2020

#### **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.

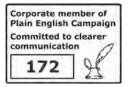
When the movement arrives at the destination, no further movement must take place until authorised by the MC.

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### Notes

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Rail Safety Standards Board Limited The Helicon One South Place London EC2M 2RB Handbook RS521 RM8000-possessionworkers Iss 4 with effect from 05/12/2020



Signals, Handsignals, Indicators and Signs

## Issue 6



**RS521** 

December 2020



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## Signals, Handsignals, Indicators and Signs Handbook RS521



First issued December 2013 Issue 6, September 2020

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You will need this handbook if you need to understand the meaning of signals, handsignals, indicators and signs.



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- 12.9 Spring catch points sign
- 12.10 Bridge identity plates
- 12.11 Safety signs
- 12.12 End of emergency special working sign
- 12.13 Flexible train arrival point signs



### Lineside handsignals



### **1.1 Definitions**

### Stop signal

A stop signal is a signal that can show a stop aspect or indication. It also includes:

- position-light signals
- shunting signals
- limit of shunt signals or indicators
- stop boards
- buffer stop indications
- possession limit boards
- work-site marker boards.

### **Distant signal**

A distant signal is a signal which cannot show a stop aspect or indication.

Some colour light distant signals are identified by a white triangle or the letters 'R' or 'RR' on the signal identification plate.

#### **Automatic signal**

A signal operated by the passage of trains. The signaller or a person operating a signal post replacement switch can place some automatic signals to danger.

#### **Controlled signal**

A signal operated by the signaller, some of which may be set by the signaller to work automatically.

#### Semi-automatic signal

A signal normally operated by the passage of trains, but can also be controlled from a signal box or a ground frame, or by a person operating a signal post replacement switch.

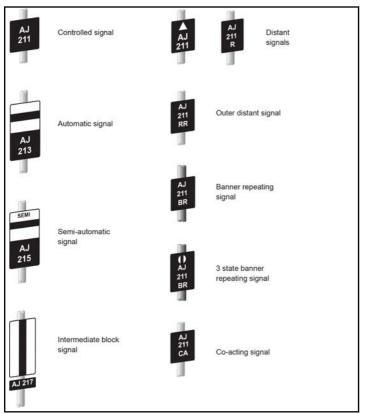
#### Intermediate block home signal

A stop signal that controls the exit from an intermediate block section, and the entrance to an absolute block section or another intermediate block section.



### **1.2 Signal types - identification**

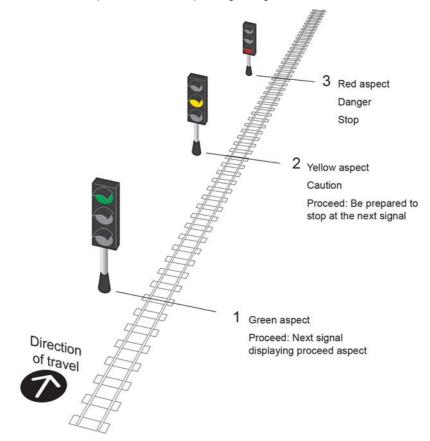
The meanings of signal identification plates are as follows:





## 2.1 Three-aspect signalling - normal sequence

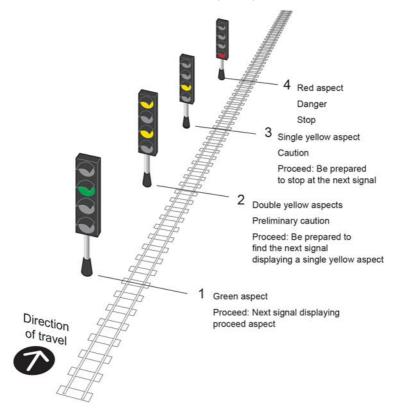
The normal sequence of three-aspect signalling is:





## 2.2 Four-aspect signalling - normal sequence

The normal sequence of four-aspect signalling is:





### **2.3 Junction indicators**

Junction indicators are provided to show that a train is being signalled to a route to the left or right of the straight route.

A junction indicator is normally located above the signal, and will display a line of white lights when a proceed aspect is displayed.

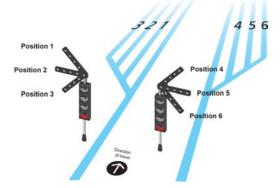


When the straight route is obvious, there is normally no junction indicator provided for this route.

Where there is no obvious straight route, a junction indicator will be provided for all signalled routes.

Where the straight route is not the highest-speed route, the junction indicator will normally apply to the lower-speed route.

Where the diverging routes ahead are both of equal speed, a junction indicator will be provided for each route.







### **2.4 Route indicators**

At some locations a route indicator is provided at the signal. The indicator will display either a letter or a number to show the route onto which the movement is being signalled.

Route indicators may also be associated with a junction indicator.

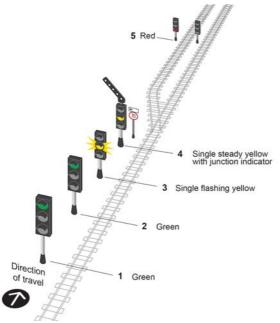


RSS

### 2.5 Flashing yellow aspects

A flashing yellow aspect means facing points at a junction ahead are set for a diverging route with a lower speed than that for the straight route.

The normal sequence of three-aspect flashing yellow signalling is:



#### Three-aspect flashing yellow signalling

When a single steady yellow aspect is displayed together with a junction indicator at signal 4, this has the normal meaning of a yellow aspect, be prepared to stop at the next signal (number 5). This applies even though a flashing aspect may have been displayed at signal 3.



4 Single steady yellow with junction indicator 3 Single flashing yellow

2

1 Green

The normal sequence of four-aspect flashing yellow signalling is:

Red



Direction of travel

If the train is between signals 2 and 3 when signal 4 is cleared for the diverging route, signal 3 may then display one flashing yellow aspect. This applies even though a steady aspect has been displayed at signal 2.

Double flashing yellows

When a single steady yellow aspect is displayed together with a junction indicator at signal 4, this has the normal meaning of a single yellow aspect, be prepared to stop at the next signal (number 5). This applies even though a flashing aspect may have been displayed at signal 3.

RSS

### Flashing yellow signalling in ERTMS areas

For trains on which ERTMS is operating the ability of approaching signals to display flashing aspects will be disabled. Only standard aspect sequences will be displayed to these trains. Route or junction indicators will continue to operate.

### 2.6 Splitting distant signals

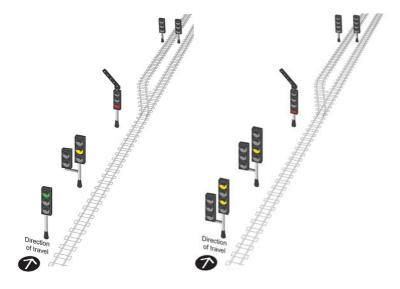
Splitting distant signals are used to show which route is set at a diverging junction.

Splitting distant signals may be provided with three or four aspect signalling.

Examples of a four aspect primary head with left-hand off-set head, and a three aspect primary head with right-hand off-set head are shown below.



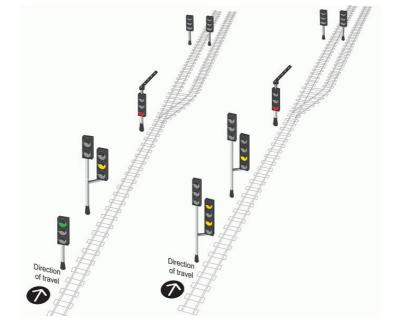




## Splitting distant signals with junction signal at danger where there is a left-hand diverging route

The junction signals are at danger so no aspect is shown in the off-set heads.



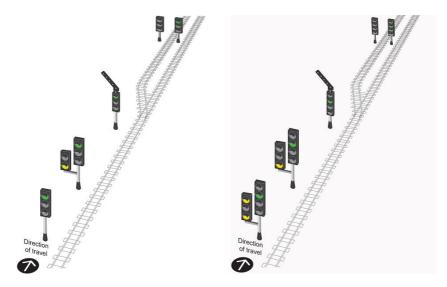


## Splitting distant signals with junction signal at danger where there is a right-hand diverging route

The junction signals are at danger so no aspect is shown in the primary heads.



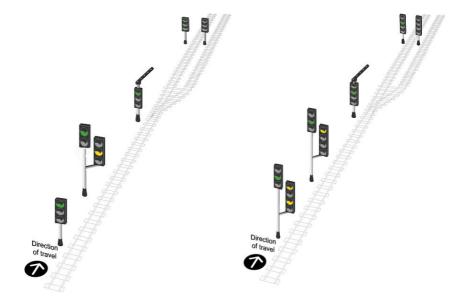




## Splitting distant signals with junction signal cleared for the straight route where there is a left-hand diverging route

The aspects displayed in the primary heads indicate what aspect is shown at the first signal after the junction. The off-set heads on the approach to the junction signal display aspects appropriate for the junction signal being at danger.



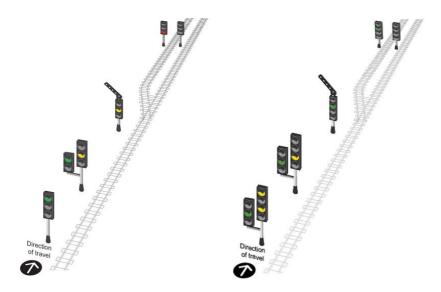


## Splitting distant signals with junction signal cleared for the straight route where there is a right-hand diverging route

The aspects displayed in the primary heads indicate what aspect is shown at the first signal after the junction. The off-set heads on the approach to the junction signal display aspects appropriate for the junction signal being at danger.



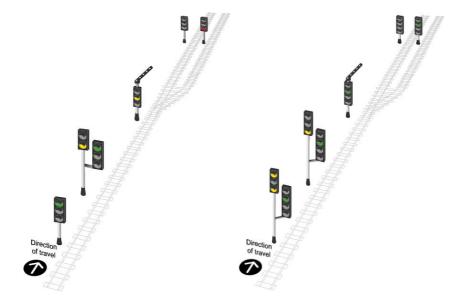




## Splitting distant signals with junction signal cleared for the left-hand diverging route

The junction signal is cleared for the left-hand diverging route and is not approach released so the aspects displayed in the off-set heads indicate what aspect is shown at the first signal after the junction. The primary heads on the approach to the junction display aspects that are appropriate for the junction signal being at danger.





## Splitting distant signals with junction signal cleared for the right-hand diverging route

The junction signal is cleared for the right-hand diverging route and is not approach released so the aspects displayed on the off-set heads indicate what aspect is shown at the first signal after the junction. The primary heads on the approach to the junction signal display aspects appropriate for the junction signal being at danger.





### **2.7 Position-light signals**

### Position-light signals that display a red aspect

These position-light signals are normally positioned at ground level independent of a main aspect.

When proceeding on the authority of a main aspect, any position-light signals along the route between main running signals will show a proceed aspect.

The signal identification plate may also have a direction arrow showing the line to which the signal applies.

These indicate stop.



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### Position-light signals that display a yellow aspect

Position-light shunting signals that display a yellow aspect are stop signals applying only to movements in the direction to which the signal can be cleared. Other movements can pass the signal without it being cleared.

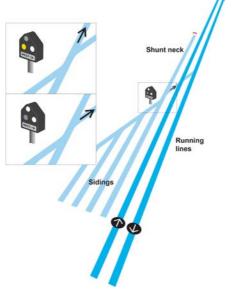
The signal identification plate may also have a direction arrow showing the line to which the signal applies.

These indicate stop.



The signal can be passed in the 'stop' position when a movement is being made towards the shunt neck or siding and not the running line.

The route may be obstructed, including by a train or vehicle.



Yellow position-light signal



### Position-light signals that display a proceed aspect

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If a position-light signal displays two white lights at 45°, this authorises the driver to proceed at caution towards the next train, signal or buffer stop, and be prepared to stop short of any obstruction.



#### Position-light signals associated with a main aspect

These are normally positioned below the main aspect they are associated with, and often on the same signal post.

The normal aspect for a position-light signal is unlit. This means 'obey the main signal'.

When the position-light signal shows two white lights at 45° it authorises the driver to proceed at caution towards the next train, signal or buffer stop, and be prepared to stop short of any obstruction.



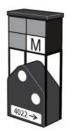




## Position light signal that has an associated route indicator

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> Route indicators associated with position-light signals are of miniature design, and display a letter or a number that shows the route onto which the train is being signalled.



### 2.8 Colour light signals not in use

When not in use, main and position-light signals are covered up.

Main aspects may also have a large 'X' displayed over the cover.





### **3.1 Distant signals**

These signals show the following indications.

#### Caution

Indication by day: arm horizontal.

Indication by night: yellow light or reflectorised indication.

Meaning: be prepared to stop at the next stop signal, or other specified place to which the distant signal applies.



### Clear

Indication by day: arm raised or lowered 45°.

Indication by night: green light.

Meaning: all associated stop signals worked from the same signal box are clear.



If there is only one distant signal provided for a diverging junction, this signal applies to all trains that approach it.



### 3.2 Stop signals

These signals show the following indications.

### Danger

Indication by day: arm horizontal.

Indication by night: red light.

Meaning: stop.



### Clear

Indication by day: arm raised or lowered  $45^{\circ}$ .

Indication by night: green light.

Meaning: proceed.

If there is a distant signal on the same post as a stop signal:

- the stop signal is worked by the signal box at that location, and
- the distant signal is normally worked by the signal box ahead.

The stop signal that controls movements into a loop, siding or no-block line may be a miniature semaphore arm.

Meaning when cleared: proceed at caution and be prepared to stop short of any train, vehicle or any obstruction.









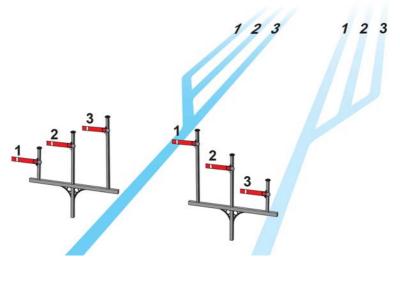
### **3.3 Route indications**

Indications of route within semaphore-signalled areas may be given by one of the following methods.

- 'Stepping'.
- 'Stacking'.
- A route indicator.

The diagram below shows the 'stepping' arrangement of signals. This arrangement is the normal method of route indication on running lines in semaphore areas.

Signal 1 applies to the route on the extreme left. Signals 2 and 3 apply to successive routes to the right.

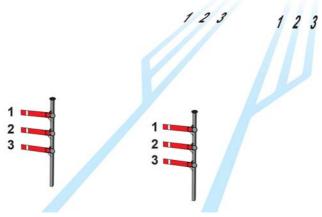


Stepping



The diagram below shows the 'stacking' arrangement. This arrangement is the normal method of route indication for shunting signals in yards and sidings, and also on running lines where there is little gantry space.

Signal 1 applies to the route on the extreme left. Signals 2 and 3 apply to successive routes to the right.



#### Stacking

At some locations a route indicator is provided at the signal. The indicator will display a figure or letter to show the route onto which the movement is being signalled.



## RSS

### 3.4 Semaphore subsidiary signals

Semaphore subsidiary signals are always associated with the main arm of a semaphore stop signal.

The subsidiary signal will always be positioned below the main semaphore arm with which it is associated, and on the same signal post.

When the subsidiary signal is in the 'normal' position this means 'obey the main arm'.

The 'normal' indication is:

- the arm in the horizontal position
- a red, white or no light displayed.
- The proceed indication is:
- the arm raised or lowered 45°

• a green light displayed. When the signal is cleared, it authorises the driver to:

- pass the main arm at danger
- proceed at caution towards the next train, signal or buffer stop, and be prepared to stop short of any obstruction.

At some locations, clearing the subsidiary signal will also show an indicator displaying either the letter 'C' or 'S'.







### **Calling-on**

When this signal is cleared with the letter 'C' showing, it authorises the driver to proceed at caution towards the next train, signal or buffer stop, and be prepared to stop short of any obstruction.



#### Shunt-ahead

When this signal is cleared with the letter 'S' showing, it authorises the driver to proceed for shunting purposes only.





# 3.5 Semaphore shunting signals that display a red aspect

Semaphore shunting signals that display a red aspect are stop signals.

Shunting signals have a:

- white disc with a red horizontal bar, or
- miniature semaphore arm with a vertical white stripe.

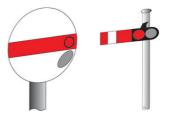
These signals show the following indications.

### Danger

Indication by day: arm or bar horizontal.

Indication by night: red light.

Meaning: stop.

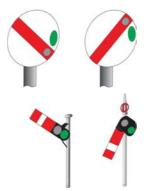


### Proceed

Indication by day: disc turned 45° or arm raised or lowered 45°.

Indication by night: green light.

Meaning: proceed at caution as far as the line is clear.



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## 3.6 Semaphore shunting signals that display a yellow aspect

Semaphore shunting signals that display a yellow aspect are stop signals applying only to movements in the direction to which the signal can be cleared. Other movements can pass the signal without it being cleared.

Shunting signals have a:

- white disc with a yellow bar
- black disc with a yellow bar
- miniature semaphore arm with a vertical black stripe.

These signals show the following indications.

#### Stop

Indication by day: bar or arm horizontal.

Indication by night: yellow light.

Meaning: stop. The driver may pass the signal in the 'stop' position when the movement is being made towards the shunt neck or siding and not the running line.

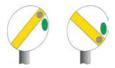


#### Proceed

Indication by day: disc turned 45° or arm raised or lowered 45°.

Indication by night: green light.

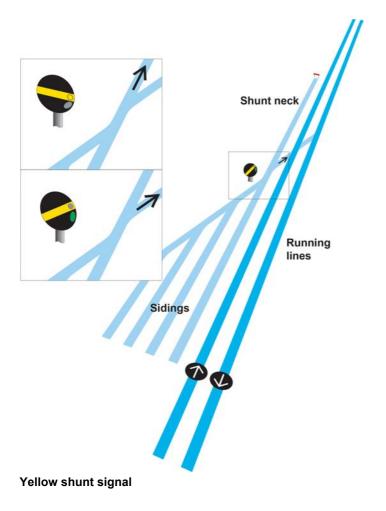
Meaning: proceed at caution as far as the line is clear.









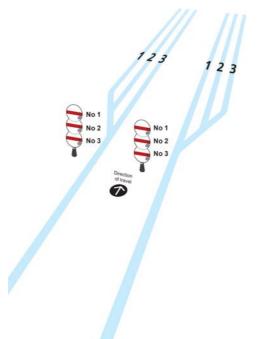


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## 3.7 Route indications by shunting signals

These signals show the following indications. Signal 1 applies to the route on the extreme left. Signals 2 and 3 apply to successive routes to the right.







## 3.8 Semaphore signals not in use

When semaphore signals are not in use, they have:

- a large X fixed on the signal arm, or
- the disc covered over.



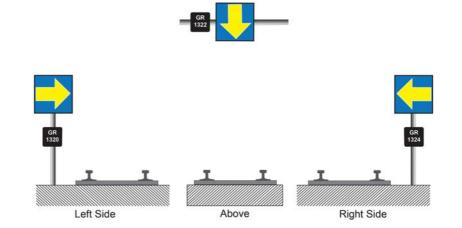




## 4.1 Block markers

A block marker consists of a reflective square sign showing a yellow arrow on a blue background. The arrow shows which line the marker applies to.

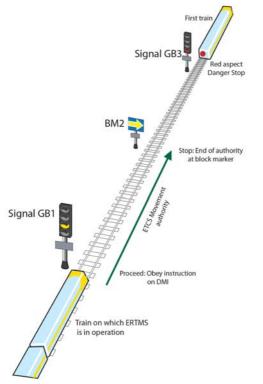
Each block marker is provided with a unique identification plate, of white characters on a black background.







## 4.2 ERTMS lines where lineside signals are provided



A train on which ERTMS is operating can be issued with a movement authority (MA) to any intermediate block marker. In this case signal GB1 will display a yellow aspect.

If a train is not fitted with ERTMS or a train on which ERTMS is operating in other than full supervision (FS) or on sight (OS), then even if the route is set to block marker BM2 signal GB1 will display a red aspect.





## 4.3 Cab signalling boards

#### Warning of start of cab signalling board

This board indicates that ERTMS signalling is about to start.



#### Start of cab signalling board

This board indicates that ERTMS signalling is about to start.



#### End of cab signalling board

This board indicates the end of ERTMS signalling.





## 4.4 Shunt entry boards

Shunt entry boards consist of a reflective board showing a white chevron on a violet background. The chevron points toward the line to which the shunt entry board applies.

Shunt entry boards mark the entry of a shunt route on ERTMS cab signalled lines where lineside signals are not provided.

The identity of a shunt entry board is shown on an identification plate in white characters on a black background.





### 5.1 Limit of shunt signals or indicators

Limit of shunt signals or indicators are either:

- instructions on illuminated signs, or
- two red lights horizontally displayed.

No part of the train may pass a limit of shunt signal or indicator unless authorised by the signaller.



If a limit of shunt signal or indicator is passed without authority, it is a signal passed at danger.

#### 5.2 Stop boards

A stop board shows the word 'Stop' and may also:

- show other instructions
- be illuminated.

The driver or person controlling the movement may only proceed past the stop board when:

- the instructions on the stop board have been carried out, or
- permission to do so has been given by the authorised person.

If a stop board is passed without authority, it is a signal passed at danger.



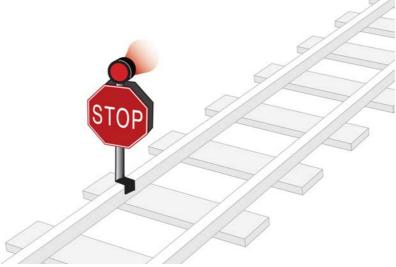


## 5.3 Possession limit boards (PLB)

A PLB identifies the boundary of a possession. They may also be used as part of the protection for a line blockage.

The board is red, double-sided and is visible along the line in both directions.

It will also have a steady or flashing red light visible along the line in both directions.



If a PLB is passed without authority, it is a signal passed at danger.



#### 5.4 Work-site marker boards

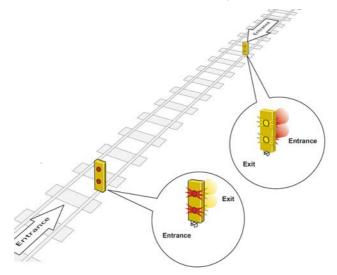
Work-site marker boards may be provided within a possession of a running line.

The board is yellow, double-sided and is visible along the line in both directions.

It has two red flashing lights which indicate an entrance to a work site. The authority of the Engineering Supervisor or Safe Work Leader is needed to pass it.

It has two yellow flashing lights which indicate an exit from a work site. The authority of the PICOP is needed to pass it.

Both indications are treated as a stop signal.



If a work-site marker board is passed without authority, it is a signal passed at danger.



## 5.5 Signal passed at danger (SPAD) indicator

Where provided, SPAD indicators are normally positioned about 50 metres (55 yards) beyond certain signals.

The indicator has a three-aspect signal head which is fitted with a blue backplate.

#### **Indications and meanings**

The indicator is not normally lit. If a signal is passed at danger, the indicator will be activated. It will then display:

- a flashing red light in the top and bottom aspect
- a steady red light with the word STOP in the centre aspect.



If the indicator is activated, any movement on the line to which the signal applies or any other line, is to be brought to a stand immediately and the signaller contacted.



## **5.6 Points indicators**

A points indicator is associated with hydro-pneumatic and certain other types of points and is identified by a sign showing the words 'Points indicator'.

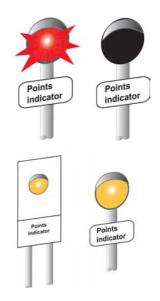
They display the following indications.

Indication: A red light that may be steady or flashing or no light is showing.

Meaning: Stop at the points indicator and contact the signaller unless otherwise authorised.

Indication: A steady yellow light.

Meaning: The points to which it applies are fitting correctly.



If a points indicator is passed without authority, it is a signal passed at danger.



## 5.7 Banner repeating and co-acting signals

#### **Banner repeating signals**

Banner repeating signals are provided on the approach to certain signals which have restricted sighting (for example because of curvature of the line, buildings or tunnels), to give advance information of the signal aspect.

Position: On

Meaning: distant signal to which it applies is at caution.

Position: Off

Meaning: distant signal to which it applies is showing clear.

Position: On

Meaning: the signal to which it applies is at danger.

Position: Off

Meaning: the signal to which it applies is displaying a proceed aspect.

Position: Off

Meaning: the signal to which it applies is displaying a green aspect.

Position: On for the Straight Route

Off for the Diverging Route

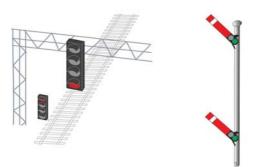
Meaning: the signal to which it applies is displaying a proceed aspect for the diverging line and danger for the straight route.

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#### **Co-acting signals**

Co-acting signals are provided to give both short and long distance sighting of the signal. A co-acting signal repeats the exact aspect or indication of the main signal. Co-acting signals are always the same type (colour light or semaphore) as the main signal.





## 5.8 'Off' indicators



If an 'OFF' indicator is provided at a platform, it will:

- show the word 'OFF' when the signal to which it applies shows a proceed aspect
- allow a guard or platform staff to check the signal is clear before commencing the train despatch procedure
- show no indication when the signal to which it applies is at danger.

On a bi-directional platform line, the 'OFF' indication may be accompanied by an 'UP' or 'DN' or other indication to show which route has been set.

An 'OFF' indication does not always mean the line ahead is clear as the signal to which it applies may have been cleared for another train standing ahead in the same platform.

'OFF' indicators may be provided at locations other than platforms to show the driver that the signal to which they apply is displaying a proceed aspect. Rending this manual is not permitted



#### 5.9 'Close-doors' indicator

Close-doors indicators display the letters 'CD' when illuminated, and let the driver know that it is safe to close the power-operated doors on the train.



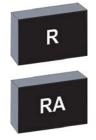
#### 5.10 'Right-away' indicators

Right-away indicators display the letters 'R' or 'RA'.

If this indicator is illuminated, it tells the driver that station duties are complete, the train is secure and that it is safe to proceed.

#### 5.11 Rear clear marker

This sign informs the driver that the train has cleared a defined location to the rear.







## 5.12 Mid-platform train berth marker

This sign informs the driver of the sub-divisions along a station platform to permit its use by more than one train.



### **5.13 Whistle boards**

A whistle board may be provided on the approach to some level crossings.

The whistle board can be a retro-reflective round sign or a cut out.





### 5.14 Preliminary route indicators

A preliminary route indicator is provided where it is necessary for a driver to receive advance information about the route that has been set beyond a junction signal ahead of the train.

A preliminary route indicator displays an arrow pointing in the same direction as any junction indicator displayed at the junction signal that the preliminary route indicator applies to. If the junction signal is displaying a proceed aspect without a junction indicator, the associated preliminary route indicator will display an arrow pointing straight up.

If the junction signal is at danger, the preliminary route indicator is not illuminated.

The table below gives examples of the preliminary route indicator display which depends on what is displayed on the junction signal concerned.

Junction signal ahead showing:	Preliminary route indicator	Junction signal ahead showing:	Preliminary route indicator
Proceed with position 1 JI	V	Proceed with position 4 JI	$\searrow$
Proceed with position 2 JI	<b></b>	Proceed with position 5 JI	Ļ
Proceed with position 3 JI		Proceed with position 6 JI	7
Proceed with no JI		Stop aspect	



## RSS

## 5.15 Automatic warning system (AWS) cancelling indicators

On single and bi-directional lines, the AWS magnet will normally be suppressed for movements for which it does not apply, this means the AWS will not operate.

However, there are some locations where the AWS magnet is not suppressed.

In these cases a cancelling indicator is provided to tell the driver that the AWS warning indication does not apply to trains travelling in that direction.

Where the AWS magnet is permanently installed. The indicators look like this.

Where the AWS magnet is provided in connection with a temporary or emergency speed restriction on a single or bi-directional line. The indicators look like this.



The cancelling indicator is normally positioned 180 metres (approximately 200 yards) after passing over the AWS magnet.



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## 5.16 AWS gap indicators

In some AWS fitted areas AWS equipment is not provided throughout. These areas are identified with the following signs.

Where AWS is not provided at a station on a line equipped with AWS.





End of AWS gap





## 5.17 AWS on a bi-directional line

On some bi-directional lines, AWS equipment is not provided in the opposite direction. These portions of line are identified with the following signs.

However, for a temporary or emergency speed restriction, AWS will be provided in both directions.

## Where AWS is not provided in the opposite direction on a bi-directional line.





Start of the relevant section of line concerned

End of the section normal arrangements resume





## 6.1 Level crossing signs

#### Automatic barrier crossing locally monitored, automatic open crossing locally monitored crossings and open crossings

The warning board means that there is an automatic barrier crossing locally monitored, automatic open crossing locally monitored or an open crossing ahead.



#### Warning board

The speed restriction board shows the permissible speed from the board to the level crossing.

If differential speeds are shown on the speed restriction board, they have the meanings shown in section 7.4.

At open level crossings the speed restriction or stop board is combined with a whistle board.





Speed restriction board

Combined speed and whistle board

On ERTMS lines a speed restriction board is not provided but the speed restriction approaching the crossing will be shown on the driver machine interface (DMI).



#### Wrong-direction boards

Wrong-direction speed restriction boards are positioned on the approach to level crossings that have wrong-direction controls.



The numerals show the permissible speed from the board to the level crossing. Black numerals on a white background denote mph and white numerals on a black background denote km/h.

#### **Sighting board on ERTMS lines**

This sign indicates the point at which the driver is required to ensure that the level crossing is clear and to observe the driver's level crossing indicator.







#### 6.2 Level crossing indicators

A level crossing indicator is associated with locally monitored level crossings.

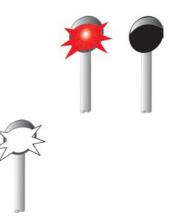
They display the following indications.

Indication: A red light that may be steady or flashing or no light is showing.

Meaning: Stop before reaching the level crossing and ensure it is safe before passing over it.

Indication: A flashing white light.

Meaning: The level crossing is working correctly, and providing the level crossing is clear, it is safe to proceed over it.





## 7.1 Permissible speed indicators



Permissible speed indicators show the start of the permissible speed.

Black text on a white background and cut-out signs show the speed in mph. White text on black background shows the speed in km/h.

In limited clearance areas the indicators are sometimes oval-shaped.



## 7.2 Warning indicators

Warning indicators are provided on the approach to certain speed indicators and give a warning of a reduction in permissible speed ahead. Black text on a white background shows the speed in mph. White text on black background shows the speed in km/h.



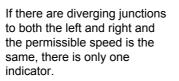
There may also be a fixed AWS magnet on the approach to the indicator.

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# 7.3 Permissible speed indicators at diverging junctions

These show the speed to the left or right of the straight route at a diverging junction.





60

100



# 7.4 Differential permissible speed indicators

The bottom figure always shows the higher speed. It applies to:

- passenger trains (loaded or empty)
- parcels and postal trains (loaded or empty)
- light locomotives.

The top figure applies to all other trains.





## 7.5 Permissible speed indicators with letters

These show the permissible speed and apply only to the trains shown by the letters.



This is what the letters mean.

HST	High speed trains.	
MU	Multiple-unit trains.	
DMU	Diesel multiple-unit trains.	
EMU	Electric multiple-unit trains.	
SP	Sprinter multiple-unit trains	
CS	Class 67 locomotives.	

The classes of train that can travel at these speeds are shown in the *Sectional Appendix*.

# 7.6 Enhanced permissible speed (EPS) indicators

These show the enhanced permissible speed in mph and apply to tilting trains in tilting mode.





Where differential signs are provided, the bottom figure always shows the higher speed and applies to class 390 trains in tilting mode. The top figure applies to class 221 trains in tilting mode.



Warning indicators are provided on the approach to certain EPS speed indicators and give a warning of a reduction in the enhanced permissible speed ahead.







Supers

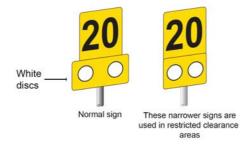
## 8.1 Temporary speed restriction signs

#### Warning boards

A warning board is placed on the approach to a temporary speed restriction ahead.

An AWS magnet is provided on the approach to a warning board.

There will be no AWS in AWS gap areas.



#### **Speed indicator**

A speed indicator shows the start of the speed restriction and the permitted speed over the restriction.



On ERTMS lines where lineside signals are provided, if the speed restriction starts within an ERTMS area but ends outside the ERTMS area, an additional speed indicator will be placed at the end of cab signalling board.



#### **Directional indicators**

A directional indicator on a warning board or speed indicator shows that there is a speed restriction ahead on a portion of line that goes off to the left or right of the straight route at a diverging junction.



#### **Differential temporary speed restrictions**

A temporary speed restriction can show different speeds which apply to different types of trains.

The bottom figure always indicates the higher speed. It applies to:

- passenger trains (loaded or empty)
- parcels or postal trains (loaded or empty)
- light locomotives.

The top figure applies to all other trains.



#### **Termination indicator**

The termination indicator shows the end of the speed restriction.





#### **SPATE** indicator

The SPATE indicator shows the speed restriction has been withdrawn or will not be imposed.

SPATE is an abbreviation of 'Speed Previously Advised Terminated Early'.



#### **Repeating warning board**

A repeating warning board is placed on the end of a platform or a connection from a siding or dead-end platform line to remind the driver there is a temporary speed restriction ahead.

The board will also have the associated speed indicator or a spate indicator below the board.





## 8.2 Emergency indicator



When an emergency speed restriction is to be imposed an emergency indicator will also be used.

The indicator has flashing white lights which will be working at all times.

An AWS magnet is provided on the approach to an emergency indicator for an emergency speed restriction ahead.

There will be no AWS in AWS gap areas.



## 9.1 Neutral section signs

#### **Neutral section warning board**

This sign provides advance warning of a neutral section.



#### **Neutral section indication board**

This sign identifies the commencement of a neutral section.





## 9.2 Coasting signs

This 'advance lower pantograph' sign provides warning of a lower pantograph sign ahead.

The sign also has flashing white lights.

This sign means 'lower pantograph'.

This sign means 'raise pantograph'.

This sign means 'do not raise pantograph'.







This sign indicates the start of a GSM-R radio section

#### Areas where GSM-R radio is not provided

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This sign indicates the end of a GSM-R radio section.



GSM-R

#### **GSM-R** alias plate

In places where there is no signal or where there may be confusion over the number to enter when registering the cab radio, an alias plate may be provided.





### **GSM-R** signalbox phone number plate

At certain signals the GSM-R network may not be able to automatically route calls from the driver to the signaller who controls the area. This sign is a reminder to drivers of the signaller's GSM-R phone number.



## **GSM-R** signalbox short code plate

An alternative method has been developed to avoid a driver having to dial the long 8-digit number. This is achieved by dialling a short code number. This sign displays the correct signaller's GSM-R short code number.





## **11.1 Telephones**

## Signal post telephones

Telephones associated with a signal are similar to these. If the telephone has a number on the cabinet the number states the maximum amount of minutes that can elapse before the signaller is contacted by the driver.

### Lineside telephones

These telephones are provided to contact the signaller.







# **11.2 Limited clearance telephones**

# Telephones with yellow or white diamonds with the letter X or a yellow roundel.

If any of these signs are displayed it means that the signal post telephone is not in a position of safety. It may only be used to contact the signaller:

- in an emergency
- if told that the adjacent line has been blocked.



### Telephone with limited clearance warning signs

These signs mean that a train driver may use the signal post telephone because it is in a position of safety in relation to the adjacent line and protection is provided by the presence of the train.



The telephone may only be used by other staff to contact the signaller:

- in an emergency
- if told that the line to which it applies has been blocked.



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## **11.3 Signals without telephones**

#### White diamond sign

This sign means that a telephone is not provided but the presence of the train or shunting movement is indicated to the signaller.

# White diamond sign with a telephone number displayed

This sign means that a telephone is not provided but the presence of the train or shunting movement is indicated to the signaller. If GSM-R or CSR is not available the signaller may be contacted using the telephone number on the plate.



A driver may only leave the cab in order to use a lineside telephone to contact the signaller:

- in an emergency
- if told that the adjacent line(s) has been blocked.





## **12.1 Low adhesion hazard signs**

#### Entrance to a low adhesion area

This sign informs the driver of the entrance to a low adhesion area.



This sign informs the driver of the exit from a low adhesion area.

## **12.2 Sandite markers**

These signs informs the driver of sites where Sandite should be applied. There are three signs.

- Three marks advance warning of Sandite application site.
- Two marks start applying Sandite.
- One mark stop applying Sandite.









# **12.3 Signal reminder signs**

This sign informs the driver of a particular signal ahead.



# **12.4 Countdown markers**

These signs inform the driver of the distance between the sign and the signal concerned.

There are three signs.

- Three marks distance to signal normally 300m.
- Two marks distance to signal normally 200m.
- One mark distance to signal normally 100m.

# **12.5 Coasting boards**

This board advises that the driver may coast to a stopping point or significant speed reduction beyond the board.







## **12.6 Car stop markers**

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These signs inform the driver of the correct stopping point for the train.



These signs are situated on the lineside and used to identify locations. The number denotes the mileage and each mark under the number denotes quarter of a mile.



## **12.8 Gradient signs**

These signs are situated on the lineside and used to identify the change in gradient at that particular location. Gradients are expressed as a ratio. e.g '1 in 460' means the track rises (or falls) one unit in every 460 units. The angles of the gradient signs indicate the direction of the slope.





# 12.9 Spring catch points sign

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These signs are placed on the approach to spring catch points.



These signs identify the location of bridge structures.



## 12.11 Safety signs

#### Limited clearance sign

This sign means there is no position of safety on this side of the railway for the length of the structure. It is not safe to enter or stand at that location when a train is approaching.







#### No refuges warning sign

This sign means there is no position of safety on this side of the railway for the length of the structure. However, there are positions of safety, or refuges, on the opposite side of the railway line.



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#### **Prohibition sign**

This sign means that staff must not pass beyond this sign while trains are running unless carrying out emergency protection. This is because it would not be possible to reach a position of safety or refuge safely. Extreme care is necessary if carrying out emergency protection.



# 12.12 End of emergency special working sign

This sign indicates the end of an emergency special working section.



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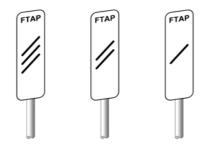


## 12.13 Flexible train arrival point signs

When an engineering train or on-track machine is to stop at a flexible train arrival point (FTAP) location before working in a possession or a protection zone, signs will be provided to guide the driver.

These signs have no significance for any other train.

Three countdown markers in succession will be provided on the approach to the FTAP.



An FTAP sign will be provided at the location where the train is to stop.







## **Red handsignal**

A red flag during daylight or a red light during darkness or poor visibility means 'STOP'.



### Yellow handsignal

A yellow flag during daylight or a yellow light during darkness or poor visibility is used when giving authority to pass a signal at danger.





#### **Green handsignal**

A green flag during daylight or a green light during darkness or poor visibility is used to give authority to pass over a level crossing.







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### Lookout handsignal

A blue and white chequered flag is used between lookouts to inform of an approaching train. Drivers can ignore this handsignal.



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