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Track circuit block regulations

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Conventions used in the Rule Book

	Example
A black line in the margin indicates a change to that rule since the last printed version. The Rule Book Briefing Leaflet in the online Standards Catalogue contains more information about the changes.	
Green text in the margin indicates who is responsible for carrying out the rule.	driver
A white **i** in a blue box indicates that there is information provided at the bottom of the page.	
A rule printed inside a red box is considered to be critical and is therefore emphasised in this way.	

If you do not understand anything in the Rule Book, ask your manager or supervisor to explain it to you.

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Regulations for train signalling by the track circuit block system.

You will need this module if you carry out the duties of a signaller in a track circuit block area.

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1 Definitions

The following terms are used in these regulations and apply to signallers in track circuit block signalling areas.

Signal section

The line between two stop signals, whether or not these are within the control of the same signal box.

Overlap

The distance beyond a stop signal up to which the line must be clear before the previous signal can show a proceed aspect.

2 Principle

The track circuit block system allows a signal to show a proceed aspect when:

- all track circuits, up to and including the overlap of the next stop signal, are clear
- all necessary points within the route are detected in the correct position for a train to pass safely.

3 Method of signalling

3.1 Operating signals

3.1.1 Before clearing signals

Before you operate a signal control to allow a train to proceed, you must make sure that:

- no other movement that may conflict is to be made first
- the route is set or is free to be set by the interlocking
- if necessary, you have been given a release by another signaller.

3.1.2 Replacing signals to danger

Before you allow a movement to occupy a track circuit which would change the aspect shown at any signal, you must place, or keep, the necessary signals at danger to protect the movement.

If another signaller controls that signal, you must not allow the movement to take place until that signaller tells you the signal is at danger.

3.1.3 Obstructing or occupying an overlap

You must not allow the line within the overlap of a signal to be obstructed or to be occupied by an unsignalled movement until:

- any approaching train has been stopped at that signal, or
- if no train is approaching that signal, the previous controlled signal has been placed to danger to protect the obstruction or movement.

3.1.4 Emergency alarm

If you receive the **emergency alarm**, you must place the signals for the affected lines to danger. You must then find out whether it is necessary to carry out regulation 4, regulation 5 or general signalling regulation 19.

3.2 Train requiring to stop in section

If a train that is to stop in the section is to enter an area controlled by another signaller, you must tell that signaller:

- the type of train
- where the train is to stop and why
- the approximate time the train will occupy the section.

3.3 Permissive working

3.3.1 When permissive working can be used

You must carry out these regulations where permissive working is authorised in the *Signal Box Special Instructions*.

You do not need to carry out these regulations for shunting movements that are being made with a traction unit into an occupied section, to attach, detach or remove vehicles.

3.3.2 Types of permissive working

You must only allow the following classes of train to be in, or enter, a section when permissive working is taking place:

Type of line	Classes of train
Goods	3 to 8 and 0
Passenger (other than platform lines)	3 to 8 and 0
Platform lines	1, 2, 3 ECS, 5,9 and 0. Any class of train formed only of MPV vehicles when operating as a railhead treatment or inspection train

3.3.3 Poor visibility

You must not allow permissive working to take place during poor visibility, except on platform lines.

3.3.4 Additional regulations for permissive working on platform lines

Before you clear the signal for a train to enter an occupied platform, you must get confirmation that there is enough room for that train.

You do not have to do this if the signalling equipment at your location only allows you to clear the signal if there is sufficient room.

If a movement has already been authorised on that platform line, you must get confirmation from the person in charge of the movement, that it has been completed before you clear the signal for the second train.

If a train is not booked to call at a station, you must tell the driver what is happening before you signal that train into an occupied platform line.

You must make sure that a signal is not cleared for either of the following movements to take place, unless the signalling equipment or automatic route setting at your location will not allow this to happen.

- A second train to enter an occupied platform, if you have already cleared the signal for the first train to leave that platform.
- A train to leave a platform before a second train that you have signalled into an occupied platform has stopped.

3.4 Emergency permissive working

In an emergency, you can allow a train conveying passengers to enter an occupied signal section to reach a station platform, as long as you have been authorised to do so by the signal box supervisor or Operations Control.

You must make sure that there is enough room to safely deal with the train at the platform.

Before you allow a train to proceed, you must tell the driver what has happened, and instruct the driver to pass the signal at danger.

You must also tell the driver that when the train has arrived at the station platform, no further movement is to be made without the authority of the signaller.

3.5 Signalling by bell or telephone

3.5.1 When this regulation must be used

You must use this regulation when it is necessary to signal trains by bells or telephone when one of the following applies:

- signalling equipment is being worked on or has failed
- single line working is in operation
- an out-of-gauge train is to travel between two signal boxes.

3.5.2 When signalling by bell or telephone

You must use the standard code of bell signals and, if possible, you must also use the train describer.

If bells are not available, you must send the necessary bell signals as messages on the telephone, and if possible, use the train describer.

You must record the times at which all bell signals are sent or received in the Train Register. This includes bell signals sent as messages on the telephone.

You must record these times in the Train Register even if you do not normally have to record times.

3.5.3 Method of signalling by bells or telephone

Note: For the purpose of this part of the regulation, A and B represent two signallers. Trains are to be signalled by bell or telephone between their areas of control.

Before you allow a train to proceed, you must: **signaller A**

- make sure that the last train has passed clear of the line concerned
- send **call attention** to signaller B
- send the appropriate **is line clear**.

You can accept the train as long as no conflicting movement has been authorised and: **signaller B**

- during a failure or disconnection of the signalling equipment or track circuits (or both), the line on which the train is to run is clear up to and including the overlap of the first stop signal in your area of control
- during single line working, the line is clear as shown in regulation 9
- during emergency special working, the line is clear as shown in section 5 of module S5 *Passing a signal at danger*
- during temporary block working, the line is clear as shown in section 6 of module S5 *Passing a signal at danger.*

If for whatever reason you cannot accept a train that is offered, you must not acknowledge the **is line clear**.

If the line is clear and **is line clear** has been acknowledged, you may allow the train to proceed. **signaller A**

When the train departs, you must send **train entering section** to signaller B.

signaller B

The conditions under which you accept the train must not be changed until one of the following applies.

- The train has been stopped at the first stop signal.
- The train has passed beyond the point to which the line has been kept clear.
- You have received **cancelling** from signaller A for that train.

You must send **train out of section** to signaller A when:

- you or a competent person has seen the train, complete with tail lamp, pass beyond the point to which the line has been kept clear, or
- you have seen the train occupy and clear the track circuit ahead of the signal beyond the affected portion of line.

3.5.4 Signalling trains by telephone

signaller A and B

If there are no bells, or the bells are not working, you must send all bell signals as messages on the telephone, for example:

Signaller A	'Is Up Main line clear for one alpha two seven'?
Signaller B	'Up Main line **is** clear for one alpha two seven'.
Signaller A	'One alpha two seven train entering section on Up Main line'.
Signaller B	'One alpha two seven train out of section on Up Main line'.

If for whatever reason you cannot accept a train that is offered, you must state the refusal as follows:

signaller B

Signaller B

'**No**, one alpha two seven refused'.

3.5.5 When normal working is to resume

Before returning to normal working, you must both agree how this is to be done.

signaller A and B

3.6 Working in wrong direction

Note: 'multiple unit' in this regulation means a train that can be driven from either end and can assist the failed train. The multiple unit may be loaded or empty.

3.6.1 When this regulation must be used

You must use this regulation when it is necessary for a light locomotive or a multiple-unit train to proceed through one or more sections in the wrong direction:

- over the unaffected line to assist a failed train from the front, or
- over the unaffected line to assist a failed train that is beyond a train that cannot provide assistance.

You must first get permission from the signal box supervisor or Operations Control.

You must agree what is to happen with everyone involved in the movement.

3.6.2 When the crossover used to return the train to the affected line is facing

If the movement will return to the affected line through points that are facing to the wrong-direction movement, you must make sure that one of the following applies.

- You have operated the points to the correct position to return the movement to the affected line.
- You have got confirmation from any other signaller involved that the points have been set to the correct position to return the movement to the affected line.
- You have got confirmation from the ground-frame operator that the points have been set to the correct position to return the movement to the affected line.

3.6.3 When the crossover used to return the train to the affected line is trailing

If the crossover where the wrong-direction movement will return to the affected line is trailing to the wrong-direction movement, you must make sure that one of the following applies.

- You have operated the points for the safety of the wrong-direction movement.
- You have got confirmation from any other signaller involved that the points have been correctly set.
- You have got confirmation from the ground-frame operator that the points have been correctly set.

4 Obstruction of the line

4.1 Stopping trains because of an emergency

4.1.1 Signal protection

If you need to stop trains because of an obstruction or other emergency, you must place or keep at danger all signals necessary to protect the affected line.

If necessary, you must arrange for train radio messages to be sent.

If you cannot stop a train proceeding towards the obstruction or other emergency, you must carry out the instructions shown in regulation 5.

4.1.2 Placing a release to normal

You must also place or keep any release, slot or acceptance switch in the normal position.

4.1.3 Obstruction within the overlap

If the obstruction or other emergency is within the overlap of the protecting signal, you must place and keep at danger the previous signal that can be controlled to danger unless there are facing points that you have set for a route that is clear of the affected section.

4.1.4 Train detained at a signal on the approach

If a train is detained at a signal on the approach to the affected section, you must instruct the driver to stay at the signal until you give permission for the train to proceed even if the signal displays a proceed aspect.

4.2 If another signaller is involved

If another signaller controls the signal that will protect the obstruction or other emergency, you must immediately tell that signaller what is happening.

If this signaller is in another signal box, you must first send the **emergency alarm**.

If you are the signaller receiving this message or **emergency alarm**, you must carry out the instructions shown in regulations 4.1 and 4.3.

You must then tell the signaller giving you the message or **emergency alarm** whether you have been able to stop a train proceeding towards the obstruction or other emergency.

4.3 Allowing a train into the affected section

You must not allow a train into the affected signal section until the line is again clear and safe for the passage of trains unless it is necessary to:

- examine the line
- allow an assisting train into an occupied section
- work to and from the point of obstruction, or serve an intermediate station or siding, but only if this can be done safely
- allow a train to pass through a diverging junction before reaching the obstruction.

If more than one signaller is involved, you must both come to a clear understanding as to what is to be done before allowing a train into the affected signal section.

5 Train or vehicles proceeding without authority (including a SPAD) or train divided

5.1 Immediate actions

If you become aware, or you suspect, that a train or vehicle is proceeding without authority, or a train is running in two or more portions, you must:

- place or keep signals at danger against the train or vehicle and any other trains that could be put in danger
- if necessary, arrange for train radio messages to be sent
- if possible, alter the position of any points to divert trains and prevent collisions
- if possible, arrange for the line on which the train or vehicle is proceeding without authority to be cleared
- take the necessary action for any level crossings
- take any other possible action to reduce the risk of a collision.

5.2 If another signaller is involved

If a train or vehicle that is proceeding without authority, or a portion of a divided train, will enter a signal section controlled by another signaller, you must immediately tell that signaller what is happening.

If this signaller is in another signal box, you must first send the **emergency alarm**.

5.3 Making sure the line is clear

If it cannot be confirmed that an adjacent line is not obstructed, you must arrange for that line to be examined.

If a train or vehicle that has proceeded without authority, or all of a divided train, has stopped intact and it is confirmed that no other line is affected, you may resume normal working on the other lines.

You must not allow any train to pass over the line where a train or vehicle has proceeded without authority, or a portion of a divided train has passed, until you are sure that the line is clear.

You must signal the next train normally.

6 Tail lamp out or missing

If you become aware that a train has the tail lamp out or missing, you must find out whether the train is complete. You must also tell the driver of that train that the tail lamp is out or missing.

During darkness or poor visibility, where permissive working is authorised and you are aware that the tail lamp is out or missing, you must not signal another train into the same section until you have been told a red light has been placed on the rear of the train.

If the train enters an area controlled by another signaller before you can find out if the train is complete or before you are told the tail lamp has been replaced, you must tell that signaller.

7 Allowing an assisting train into an occupied section

7.1 Before allowing an assisting train into the occupied section

You may allow an assisting train into an occupied signal section in either direction to:

- proceed to, and assist, a failed train
- evacuate passengers from a failed train
- remove the rear portion of a divided train
- remove vehicles which have proceeded without authority.

If there is a tunnel in the affected signal section, you must instruct the driver of any train proceeding on an adjacent line to proceed through the tunnel at caution. You do not need to do this if you know the tunnel is clear and the person carrying out any protection is not in the tunnel.

If another signaller is involved, you must come to a clear understanding with that other signaller as to what is to happen.

7.2 Occupying or obstructing the line within the overlap

If you are told that the train has failed and will not be moved, you may allow the overlap of the stop signal immediately beyond the failed train to be occupied, fouled or obstructed. You may continue to do this until:

- the failed train is ready to proceed, or
- the assisting train has entered the section and the failed train is to be assisted forward.

7.3 When the line is again clear

When the line is again clear, you must signal the next train normally.

If the assisted train is to enter a signal section controlled by another signaller, you must tell that signaller the train is being assisted and how it is being assisted.

8 Failure or disconnection of train describers or bells

8.1 Describing trains

If the train describer equipment fails or is disconnected, you must keep a record of the trains within your area of control.

If a train enters an area controlled by another signaller, you must tell that signaller the identity of the train. If that signaller is at another signal box, you must send the train description by either bell or telephone.

If it is not possible to pass on a train description, you may allow trains to proceed and operate the signals in the normal way.

If you become aware of a train within your area of control for which you have not received a train description, you must find out its identity, if necessary by stopping the train.

8.2 Loss of communication on a single line

If you cannot communicate with the signaller in an adjacent signal box but the signalling equipment is working normally, you must use whatever means are available to find out the order in which trains will proceed over the single line.

9 Signalling trains during single line working

9.1 Allowing trains to enter the single line in the right direction

Before you clear the signal controlling the entrance to the single line, you must make sure that the pilot has given the necessary instructions to the driver.

9.2 Allowing trains to enter the single line in the wrong direction

9.2.1 If there is a main aspect signal or end of degraded working sign at the other end of the section

You can allow a train to enter the single line, as long as one of the following applies.

- If there is a main aspect signal to control the movement through the crossover at the other end of the single line and the line is clear to a point 183 metres (200 yards) beyond that signal.
- If there is an end of degraded working sign opposite the signal protecting the crossover, the line is clear to a point 183 metres (200 yards) beyond the sign, and a signaller's agent is present to assist with the movement.

An end of degraded working sign must also be provided if there is a position light signal to control the movement over the crossover.

When the single line working section is clear and ready to accept a train in the wrong direction, you must:

- make sure you have set signals to protect the movement
- make sure you have correctly set the route into the single line working section
- authorise the pilot to allow the driver to pass the protecting signal at danger and proceed into the single line working section
- tell the pilot to make sure the driver is to stop and contact you when they are at the position of the end of degraded working sign if the crossover to return the train to the proper line is trailing to the movement.

9.2.2 If there no main aspect signal or end of degraded working sign at the other end of the section

Except during poor visibility, you can allow a train to enter the single line as long as one of the following applies.

- The crossover to return the train to the proper line is facing to the movement, is correctly set, the line is clear up to and including the overlap of the next signal, and the pilot is on board the train.
- The crossover to return the train to the proper line is trailing to the movement, it is correctly set, the line is clear to a point 400 metres (440 yards) beyond the crossover and the pilot is on board the train.

9.3 Allowing wrong-direction movements to return to the proper line

9.3.1 If there is an end of degraded working sign opposite the signal protecting the crossover

If the crossover is facing to the movement

You can allow a train in the wrong direction to pass the end of degraded working sign as long as:

- the crossover is set, and if necessary secured, in the correct position
- the line is clear up to and including the overlap of the next signal beyond the crossover.

You must tell the signaller's agent that the train can be allowed to proceed without being stopped, if the driver has already been given the necessary instructions.

If the crossover is trailing to the movement

When the train is at the position of the end of degraded working sign and the driver has contacted you, you can allow the train to pass the sign as long as:

- you have set the necessary signals to danger to protect the movement
- you have set the crossover in the correct position
- the line is clear 183 metres (200 yards) beyond the sign
- you have told the signaller's agent the train can proceed past the sign.

When you have done this, you must make sure the driver fully understands what is to happen, and authorise them to pass the end of degraded working sign.

9.3.2 If there is no main aspect signal and no end of degraded working sign opposite the signal protecting the crossover

If the crossover is facing to the movement

You must personally tell the driver to pass beyond the signal on the obstructed line protecting the crossover, as long as:

- the crossover is set, and if necessary secured, in the correct position
- the line is clear up to and including the overlap of the next signal beyond the crossover.

If the crossover is trailing to the movement

You can allow a train in the wrong direction to draw forward clear of the crossover, as long as you:

- have placed the necessary signals to danger to protect the movement
- make sure the driver fully understands what is to happen.

9.3.3 If a main aspect signal is provided at the opposite end of the single line and the crossover is facing to the movement

If the exit to the single line working section is controlled by a main aspect signal, you do not need to tell the driver to contact you when they reach it, instead you must:

- tell the driver to proceed to the signal protecting the crossover and obey the aspect
- clear the signal to allow the train to return to the proper line so the train can proceed normally if the line is clear up to and including the overlap of the next signal on the proper line.

9.4 If the single line has been divided into two sections

You can allow trains in the wrong direction to enter the single line as long as the line is clear to a point 183 metres (200 yards) beyond the intermediate handsignaller.

You can allow trains to pass the intermediate handsignaller as long as the line is clear to a point 183 metres (200 yards) beyond the main aspect signal or end of degraded working sign at the end of the single line where the train will return to the proper line.

9.5 Crossovers used for single line working, worked from a ground frame

Unless the signals protecting the crossover are individually and directly controlled from the signal box, you must instruct the person working the ground frame to keep the release for the ground frame in the 'release' position during single line working.

Movements in each direction must be authorised to pass the protecting signal at danger.

9.6 Crossovers used for single line working, worked from different signal boxes

If the crossovers at each end of the single line section are worked by different signal boxes, you must, where possible, describe trains in the right direction in the normal way.

Where this is not possible, and for all trains in the wrong direction, you must carry out the instructions in regulation 3.5.

9.7 Recording times in the Train Register

You must record times that trains enter and leave the single line.

You must also record the times that trains enter and leave each section of single line when the single line has been divided into two sections.

You must record these times in the Train Register even if you do not normally have to record times.

10 Opening and closing signal boxes

10.1 Opening

When you are to open a signal box, you must find out if the adjacent signal boxes are open and tell the signallers there that your signal box is open.

10.2 Closing

When you are to close a signal box, you must:

- make sure there are no more train movements required
- make sure that all controlled signals in your area of control are at danger
- tell the signallers in the adjacent signal boxes that your signal box is closed.

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