



When is an IWA or COSS appointed?

When an individual is required to walk or work on or near the line an IWA is appointed set up a Safe System of Work and manage the 'operational risk' of being struck by a train.

When a group is to walk or work on or near the line, a COSS or SWL will be appointed to take charge and set up a safe system of work manage the 'operation risk' of people being struck by trains.

Hierarchy of Control (Safe Systems of Work)

- Safeguarded.
- Fenced.
- Separated.
- Equipment Warning Permanent.
- Equipment Warning TOWS.
- Equipment Warning Human Activated.
- Equipment Warning Portable.
- Unassisted Lookouts.

The Hierarchy of control are the control measures that the IWA/COSS implements to manage the 'operational risk'. Think of it as a risk assessment, when work is planned to take place on or near the line, the planner must use the safest possible safe system – if the preferred method isn't available, the planner will then try and plan the SSoW with an alternative safe system. Justification must be in place as to why the planner hasn't planned a safer safe system.

Protection Systems (formerly green zone)

- Safeguarded

ALL lines at your site of work are blocked. This can be done by receiving a briefing from the ES and signing into their worksite/PZ – any train/OTP movements must be restricted to 5 MPH and any adjacent lines must be part of the possession or blocked via a line blockage. You can also set up a safeguarded SSoW by taking a line blockage or signing in with a PC.



- Fenced

When an approved barrier is erected between the site of work and the nearest open line to stop people coming too close to an open line. There are slightly different requirements for erecting fencing dependant on the type of fence and the linespeed. The rigid barrier is the preferred type of fencing as it is more stable, and it attached to the underside of the rail of the open line. The speed within the ES's worksite/PZ must still be 5mph.

- Rigid Barrier 1.25m (4ft) away from the nearest open line up to 125mph.
- Blue netting/ Black and Yellow tape 1.25m (4ft) up to 40mph, 2m (6ft 6in) between 41mph – 125mph.

The fence must:

- Be complete for the whole length of the site of work.
- Be turned into a right angle at both ends.
- High enough so no one can fall over it.
- Secure enough that a gust of wind or the passage of a train wont disturb the fence.
- Uprights no more than 2m apart.
- If within 2m be no higher than 915mm (3ft) above rail height as to not affect the track circuits if it was to fall.
- If left in place, a gap must be left every 40 metres.

- Separated

A site warden may be appointed by the COSS/SWL to warn staff that they are straying towards the safe limits set by the COSS/SWL – this must be a minimum of 2m. The speed within the ES's worksite/PZ must still be 5mph

A Site Warden does not need to be appointed if:

- The COSS/IWA is working alone.
- The COSS/SWL is working with one other person (COSS+1).
- There is a distance of at least 3m between the site of work and the nearest open line.
- There is a physical obstruction between the site of work and the nearest open line (platform, building, fence etc).



Warning Systems (formerly red zone)

This is where the line cannot be blocked, and work needs to take place on a line that is open to train movements. The IWA/COSS/SWL will utilise equipment or lookouts to provide warnings to staff to warn them of approaching trains.

If there is an Automatic Track Warning System (ATWS), Train Warning System (TOWS), Lookout Operated Warning System (LOWS) or PEE WEE, you can use them to provide warnings of approaching trains as long as all of the following conditions apply:

- You or a member of your group is competent to use the equipment
- The equipment will provide adequate warning of all approaching trains on the lines concerned.
- You and all members of your workgroup are able to reach a position of safety at least 10 seconds prior to the arrival of a train.
- You do not cross more than 2 open lines to reach a position of safety.

You must test the warning before work starts. ATWS provides lights and sirens and is set up by a competent person based on your location, work and warning time/sighting distance. TOWS is a permanent system that's built into the track circuits, this provides a siren. LOWS is where you position a distant lookout away from the site at the sighting point and they will issue a warning as a train passes them, the method of warning is lights and sirens. PEEWEE is a similar system to LOWS – where you position a distant lookout at the sighting point however, the PEEWEE provides a siren and the operator's warning is delivered via a cable to the central unit. Both LOWS and PEEWEE lookout are a sentinel competence. If the system fails (continuously warning of a train when there isn't one or the confidence tone hasn't sounded) then immediately move the group to a position of safety.

- Unassisted lookouts

You may set up a SSoW using one or more competent lookouts. The method of warning will be via horn, whistle or touch, if working with ear defenders in a noisy environment. The following conditions apply:

- There is no realistic alternative SSoW that can be used.
- Using lookouts in that location is not prohibited (RZP) etc.
- You do not act as a lookout.
- Your group do not need to cross any more than two open lines to reach a position of safety.
- The group will not need to walk greater than 25m to reach their position of safety.
- The warning time does not exceed 45 seconds.
- There will be enough time for everyone to be in a position of safety 10 seconds before a train arrives.



- Unassisted lookouts in darkness or poor visibility

You may use lookouts in darkness or poor visibility, however, the following restrictions apply:

- The speed of any approaching train is reduced to 20mph or less and a distant lookout is not needed to achieve the required sighting distance (site lookout only)
 - The work is within a worksite/PZ within a possession and the COSS has received a briefing and signed in with the ES/SWL and they inform you that movements are restricted to 20MPH and bi-directional
 - LOWS equipment is utilised
- Lookout/Site Warden equipment

Lookout and Site Wardens must be in possession of:

- Valid certification
 - Armlet
 - Whistle/Horn
 - Blue/White chequered flag (if required)
 - Red flag (during daylight)
 - Hand lamp capable of displaying a red aspect (if working at night)
 - A minimum of 6 detonators (5 year validity)
 - Sealed and unused Track Circuit Operating Clip (TCOC, if working on a track circuited line)
- IWA/COSS working/walking alone open line

A COSS or IWA can work alone within 2 meters of an open line providing the following applies:

- A safer alternative SSoW is not available
- They are **Patrolling, Inspecting or Examining (PIE)**
- They can look up a minimum of every **5 seconds**
- They can reach an immediate position of safety without crossing any open lines

The COSS/IWA must not use the above arrangements during the hours of darkness or poor visibility or if working within a worksite/PZ when the speed is greater than 5mph.



Crossing the line procedure (CTLP)

The CTLP has been introduced to allow an IWA/COSS to cross a line or lines at locally agreed locations, without taking a line blockage.

It has been introduced to enable the industry to:

- Improve the access for track workers and reduce the time waiting line side for a line blockage.
- Allow better use of the naturally planned gaps in the train service to allow better access for track workers.
- Increase productivity for track side staff.
- Reduce instances of track side staff crossing the line without any protection.
- Reduce the workload on the signaller.

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

- The procedure has been planned and included within the Safe Work Pack.
- The location has been approved and a Risk Assessment completed.
- You are competent in using the procedure and your name has been given to signaller.
- 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 by mobile phone and ensure that you and the signaller agree:

- Your phone has at least 50% battery life.
- You have at least 3 bars of signal.
- Where you want to cross the line or pass by a structure.
- Your name and employer.
- The time it will take to cross the line or pass the structure.
- That the phone line stays open whilst undertaking the procedure, with the mobile phone by your side.

Once the signaller tells you that you/your group can now cross the line or pass by the structure you must:

- Immediately cross the line or pass by the structure.
- Stay on the phone to the signaller until you have crossed the line or passed by the structure.
- Make sure that you are in a position of safety.

You must then tell the signaller that you are clear of any line and in a P.O.S.



Blocking the line

The IWA/COSS may need to block the line to stop trains and create a safe environment for people to work in. Line blockages are usually pre planned and you will be provided with a part complete NR3180 line blockage form. You must check that the limits of the line blockage covers you for your location and consider if the type of blockage is suitable for the type of work you're doing. A line blockage can be taken from signal to signal, points to points or signal to points, nonetheless, you must ALWAYS have a protecting signal maintained at danger (either a controlled signal by the signaller or an automatic signal that has been keyed to danger manually by a competent person). If your work is going to affect the safety of the line you must also place additional protection.

Arrangements to take and give up a line blockage:

Taking the line blockage

1. Agree the arrangements with the signaller (times, lines & limits).
2. Get the signallers assurance that the protecting signal(s) will be placed to danger or that he is happy for you to arrange for a competent person to key the signal if it is automatic with an SPRS.*
3. If applicable, ask signallers permission to place/arrange additional protection.
4. If applicable, confirm that protection is in place.
5. Signaller issues an authority number with a call back time.
6. Record on your NR3180 line blockage form.

***Procedure if protecting signal is automatic with an SPRS**

1. Firstly, make sure that the signal is showing a proceed aspect (NOT RED).
2. Contact the signaller, confirm the signal is showing a proceed aspect and obtain permission to place the key into the switch.
3. Operate the switch and check to see that the signal has gone to danger.
4. Inform the signaller.
5. Remove the key.

If the signal was displaying a red aspect when you arrived, you must contact the signaller and ask for further instructions.

Giving up the line blockage

1. Make sure the line is clear and safe and that there are no members of your workgroup on the line (remember to remove your hand danger signal in the 4ft if applicable) and remove your TCOD, lift your detonators or arrange to return the token.
2. Contact the signaller and quote your authority number.
3. The signaller will give you a time and date and you record this on your NR3180.



Note: the signaller will arrange for the reconnection of the signalling equipment or the removal of the reminder appliance as part of the EPR process.

The IWA/COSS and the signaller must also agree and reach a clear understanding about the arrangements that are to apply at each level crossing (if applicable) that will be affected by the work.

If there is a change of COSS, then the new (relieving) COSS will inform the Signaller/PC/nominated person of the change.

Work less than 200m beyond protecting signal

If work that will affect the safety of the line will be carried out within 200m/220 yds of your protecting signal you must:

- Tell the signaller that your work is within 200m of the signal AND your work will affect the safety of the line.
- Your protecting signal stays the same BUT you must ask the signaller to place the signal before your protecting signal to danger.

Work that will affect the safety of the line – Additional Protection

If your work is going to affect the safety of the line, you must also arrange for a form of additional protection to be placed in conjunction with your line blockage (remember to place a hand danger signal on the approach to your site of work if you work affects the safety of the line or you are working as part of a group). Additional protection could be one of the following – Track Circuit Operating Clip (TCOD), Detonators, Token, Disconnection, EPR.

You must consider the following tasks to affect the safety of the line:

- Carrying heavy or awkward equipment or materials across the line.
- Work that will affect the condition of the track.
- Digging a hole or stacking materials or equipment close to the line or near the edge of a platform.
- Placing a **MANUALLY PROPELLED** hand trolley on the line.
- Using plant within 2m of the line.
- Using OTP that will foul the line.
- Using a Vehicle within 2m of the line.
- Attaching anything to a railway structure.
- Using a ladder/scaffold/climbing tower unless it is secured so that it cannot fall towards the line.
- Felling or trimming trees.



Method of protection	Details
<p>TCOD</p>	<p>The protecting signal must be a controlled signal or a signal placed to danger by a SPRS. A TCOD is then placed onto the line to show the track circuit as occupied.</p> <ul style="list-style-type: none"> • Sectional appendix states where it can be used (TC areas). • Signallers permission is required before placing the TCOD. • Only one TCOD per track circuit section. • Ensure you have the correct TCOD for the correct type of rail and that it isn't damaged. • The track circuit must be working normally and showing as 'clear' before being applied. • Signaller will confirm what Track Circuit you have occupied, and you record that and the time on the appendix A of your NR3180. • Your work must not affect the track circuit. <p>Note: TCOD's are colour coded.</p> <p>YELLOW – Flat bottom rails.</p> <p>ORANGE – Bullhead rails.</p>
<p>Detonator Protection</p>	<p>Signal(s) are placed to danger and then the IWA/COSS has permission to place their detonator protection.</p> <p>You or a competent person on your behalf needs to place Three detonators, 20m apart with a Possession Limit Board (PLB) placed at the first detonator. Detonators are placed at the protecting signal and two more 20 meters beyond the first detonator. If blocking from points ensure that the detonators are placed beyond and clear of points and through crossings. Record the details on the appendix A of the NR3180</p>
<p>Signal Disconnection</p>	<p>Protection is provided by the disconnection of signalling equipment</p> <ul style="list-style-type: none"> • This is done by a competent person (signalling technician). • The signaller will arrange with the technician to disconnect. • The Signaller will tell the IWA/COSS the name of the signalling technician and what equipment has been disconnected. The IWA/COSS records this on the appendix A of the NR3180



	<p>GIVING UP</p> <ul style="list-style-type: none"> • Contact the signaller, quote authority number. • The signaller will give you a time and date when the line blockage was given up. • Record the information on your NR3180. <p>The signaller will arrange for the reconnection of the signalling equipment.</p>
<p>Token</p>	<p>Protection is provided by signal(s) being placed to danger and the IWA/COSS retaining the token for the duration of the line blockage. The token is obtained from a signal box or token instrument.</p> <p>The token is returned to the pre-agreed location, signal box or to the instrument either end of the section. Record the details on the appendix A of your NR3180</p>
<p>EPR</p>	<p>The sectional appendix shows the areas where EPR can be used. It only applies to axle counter areas with unconditional reset.</p> <p>Arranging:</p> <p>IWA/COSS must ask the signaller to apply EPR (reminder appliance) to protect the line that is to be blocked after the signaller has placed the signal to danger. When the signaller informs the IWA that EPR has been applied the IWA/COSS must record this on the appendix A of the NR 3180.</p> <p>Giving up:</p> <ul style="list-style-type: none"> • Contact the signaller and quote the authority number. • The signaller will give you the time and date the blockage was given up. • Record the information on your NR3180. • The signaller will remove the EPR.
<p>Stabled train in a platform</p>	<p>If there is a stabled train is within your line blockage, you can agree with the signaller that the train will act as a 'real life TCOD' as such. In that circumstance you must ensure that a NOT TO BE MOVED BOARD or a hand danger signal is placed in front of the train at any drivable ends and clearly visible to the driver. Trains that can be stabled in platforms at specific stations is defined within the sectional appendix.</p>



<p>Absolute block line/Tokenless block</p>	<p>Protection is provided by the signaller placing the signal to danger (on) and placing the acceptance switch within the signal box to 'train on line' – this is NOT a form of additional protection and if required, additional protection will need to be placed.</p> <p>Note: This procedure is not to be used if the section signal controls the entrance to the intermediate block section.</p> <p>Tokenless block single lines</p> <p>Protection is provided by signal(s) placed to danger and the signallers' acceptance switch placed to normal.</p>
<p>Red flag/lamp on the approach to your site of work</p>	<p>If your work is affecting the safety of the line or, you are working as part of a group you must arrange for a hand danger signal to be displayed on the approach to your site of work.</p>

Working in a possession, worksite or Protection Zone (PZ)

If it has been pre-planned and published, the IWA/COSS can book in with the PICOP and use their possession arrangements as protection. The speed of train movements within the area of PICOP'S authority will be reduced to 25mph and the direction of trains will be bi-directional. The IWA/COSS must set up a SSoW based on the line speed and direction briefed by the PICOP.

The PICOP will tell you:

- The lines under possession.
- The limits of the area under control from the PICOP.
- The line you want to work on.
- The time the possession is to be given up.
- Arrangements at level crossings.
- Arrangements at points.
- Any other work parties within the area of PICOP's authority.
- Speed and direction of any engineering trains.

If you have not booked in with the PICOP, you must assume that the lines at site are open at full line speed and that train movements will be bi-directional.



Working within a worksite/protection zone (PZ):

The IWA/COSS must sign in and receive a briefing from the ES/SWL prior to starting work. The following conditions apply:

- You must reach a clear understanding with the ES/SWL2 as to what lines are blocked, what speed any engineering trains/OTP will be made at, what SSoW to use, what time the worksite/PZ is due to be handed back, limits of the worksite/PZ, other work parties within the worksite and the arrangements for level crossings and points.
- You will be reminded that the ES/SWL will authorise all train/OTP movements
- In order to set up a safeguarded, fenced or separated SSoW, all movements will be made at extreme caution and not exceed walking pace **(5mph)**

If the ES/SWL2 agrees to run engineering trains/OTP at a speed greater than 5mph, it will be no more than

- 25 mph during daylight.
- 20mph during darkness or poor visibility.

An IWA cannot rely on the above arrangements. A COSS must set up a warning system SSoW to protect their workgroup.

Rail Incident Officer (RIO)

A RIO will be appointed if there has been a report of an incident, accident or emergency on the railway infrastructure.

The duties of the RIO are to:

- Interface with the emergency services
- Interface with any regulatory bodies e.g. HMRI, HSE, EA & RAIB
- Managed the Rail Industries response, including contractors
- Carries out Site Safety Management
- Rail Industry collection and preservation of any evidence an investigation
- Communicate with Network Rail's Operation Control regularly

The RIO is identified by wearing a vest with RIO on the front and back with yellow stripes with black diamonds near the high visibility strips.

The RIO may ask the COSS to take a line blockage for them whilst they liaise with the signaller for this to be done and the COSS will then take the line blockage form the signaller and inform the RIO.



PICOS duties

A Person in Charge of Sidings is appointed when work is going to be undertaken in a siding.

Sidings come under the control of the person who is responsible for the normal operation of the sidings. This could be Network Rail or a TOC/FOC.

A PICOS will have to arrange and record with the person responsible:

- What siding they will be affecting and whether they will be taking a part or full sidings possession.
- The time required.
- Siding protection arrangements.

Full siding possession:

The IWA/COSS may have to arrange this with the signaller or ground frame operator, the IWA/COSS must confirm with the signaller/GFO that they will set the points away from the siding to protect the work group whilst carrying out work. If the siding is not controlled by a Signal Box or ground frame then the IWA/COSS **MUST** clip and scotch the points to ensure they are secured.

Part siding possession:

Place a sleeper across the rails and secure it by using a chain to act as a rail stop. Ensure a hand danger signal is displayed by the sleeper so it is clearly visible to any train driver who may approach the sleeper. If movements can be made from either end, remember to confirm the points are set away from the siding or they are secured (if required)

A COSS can share their siding possession, but the COSS must brief the individual signing in and record their name and contact details on the sidings arrangement form that will be supplied by your employer. An IWA **CANNOT** share a sidings possession.

Giving up the possession:

The IWA/COSS must make sure that anyone that was signed in with them have now booked out, all tools, equipment and machines are clear of the line. Remove your siding protection (if applicable) and contact the person responsible (signaller, shunter etc).



Hand Trolleys

To use a hand trolley, the COSS must ensure they have a line blockage with additional protection. The only type of hand trolley that can be used during a line blockage is a self-propelled (manual) hand trolley. The COSS/SWL must agree with the signaller:

- The line the trolley is to be placed on
- Where you will be working
- Weather any wrong directional movements will be made
- Weather you need to pass any signals at danger (if so – seek signallers’ authority before you do so!)

Wrong directional movements are not allowed within 200m of the protecting signal.

Line Clear Verification (LCV)

The LCV process only applies to Axle Counter areas, the location of such are defined within the sectional appendix. The LCV process is a process of ensuring that vehicles that are put on track during engineering works are removed upon completion and that the line is clear and safe for the resumption of normal services. The Weekly Operating Notice (WON) defines when LCV is applicable during a possession. Whenever a vehicle is placed on the line, the COSS must ascertain permission from the ES and record it on their Vehicle Management Form (VMF). A Vehicle under the VMF process is regarded as anything with **2 wheels or more**.

The staff involved in the LCV process and for completing a VMF are:

Signaller, PICOP, ES, SWL, COSS, MC, CC and DP.

A COSS must complete a VMF if they are to put a vehicle on the line. You must ask the ES/SWL for permission before placing it. A COSS can record a maximum of **5** trolleys at any one time.

When communicating with the ES the COSS must confirm:

- The access point being used.
- What line(s) the vehicle is going to be used on.
- Time it is placed on the line (after permission from the ES).
- Weather it crosses from one line to another (ES permission is needed again and the trolley will be recorded as leaving the line it was on and recorded onto the new line).
- Where and when it was taken off.

Signing out:

Prior to signing out of the worksite/PZ, the COSS must check that all trollies placed are removed. The COSS’s VMF must tally with the ES’s VMF.



Safe Work Pack (SWP)

Unless it is an exceptional circumstance, the SWP must be given to the IWA/PIC/COSS for verification by the planner at least a shift in advance of the work taking place. In the case of the COSS not being the PIC then the PIC will delegate the rulebook duties of IWA/COSS to you and you will have to complete the COSS endorsement on the validation form.

If the COSS is happy with the SWP, the COSS signs to verify they are happy with the pre-planned arrangements and that everything is in order. If there is an issue with the SWP then the COSS will reject the SWP, citing a reason and return it to the IWA/PIC/Planner (whatever's applicable).

Should you receive the SWP on the day of the work, for whatever reason, you must contact the responsible manager for an authority number to verify and accept the SWP on the same day as the shift.

If when on site the COSS needs to change the planned safe system, then the IWA/COSS should reassess and wherever possible, upgrade to a safer SSoW. You can upgrade your pre-planned SSoW without authorisation i.e Separated to Safeguarded. However, if you need to downgrade the SSoW, e.g. Separated to Unassisted Lookout, you must contact the Responsible manager for authorisation. On the day of the works the IWA/PIC/COSS must sign the acceptance confirming that the SSoW can be implemented.

Should the IWA/COSS notice something on site that wasn't part of the plan or is different from published reference material, the IWA/PIC/COSS should make notes and feedback to the planner.

ALL SWP's (used and unused) MUST be returned to the planner.

Cyclical Maintenance:

Cyclical Maintenance is a task that is repeated and is completed at regular intervals. A Cyclical pack can be valid for 6 or 12 months depending on the SSoW selected. 12 months for a protection system and 6 months for a warning system. The Responsible Manager authorises the SWP.

Exceptional Circumstance:

Exceptional circumstances are where work could not foreseeably have been planned (e.g. emergency callout). In this circumstance, the IWA/PIC/COSS will need to plan their own Safe system using available resources. They will be issued with a part complete Incident Response pack (IRP) from the PIC and the IWA/COSS will need to plan and implement controls for the operational risk of being hit by trains.



Measurements

Lineside	Greater than 3m (10ft) but still within the boundary fence
On or Near the Line	Within 3m (10ft)
On or Near the Line (platform)	Within 1.25m (4ft) from the platform edge and carrying out engineering activity
Positions of Safety	
0-100 mph	1.25m (4ft)
101-125mph	2m (6ft 6in)
Tools	Placed at least 2 meters from an open line upon the passage of a train
Separated protection	2m from the nearest open line
Emergency	
Place TCOC	In front of obstruction
Walk from the obstruction towards traffic	1 ¼ mile (2km)
Detonator Protection	3 detonators, 20m/yds apart
Stand from detonators	30m/yds
Working with lookouts	
Reach POS	No more than 25m
Be in POS before train arrives	10 seconds
Look up	Every 5 seconds in each direction
Cross no more than	2 lines to reach POS
IWA	0 lines to reach a POS (immediate)