GERT8000-HB20
Rule Book

Handbook 20

General duties of a safe work leader (SWL) working outside a possession

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1 Competence and identification

To act as a safe work leader (SWL), you must have with you a valid SWL certificate of competence issued by your employer.

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

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

Except when you are the SWL in charge of a work site in a possession, the armlet or badge must have SWL 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.

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.

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 a 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.

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.

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.

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 21.
- 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 21.
- Your site of work is within a siding and you have taken possession of the siding, or you have agreed a safe system of work with the person in charge of the siding possession (PICOS) as shown in handbook 13.

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 SWL or a COSS.

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.

Site warden warning - 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.

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 nobody 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.

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 21.
- The line or lines concerned have been blocked by a PC and you have agreed a safe system of work with that PC.
- Your site of work is within a siding and you have agreed the safe system of work with the PICOS, as shown in handbook 13.

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.

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 using site wardens (site-warden warning)

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.

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.

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

If there is an automatic track warning system (ATWS), semi-automatic track warning system (SATWS), 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.

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).

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.

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.

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.

4.9 Working in a siding

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

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 you have taken possession of the siding, or if you are not the PICOS, the PICOS has given you permission to start work.

5 SWL briefing

Before your group goes on or near the line, you must make sure each person 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).

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		

	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		

Sighting distance chart (in metres) mph

Sighting distance chart (in metres) mph

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

Sighting distance chart (in metres) mph

Sighting distance chart (in metres) mph

Maximum Speed	Sighting distance, in metres (m), needed to give a warning time of						
	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) km/h

Sighting distance chart (in metres) km/h

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

Sighting distance chart (in metres) km/h

Sighting distance chart (in metres) km/h

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

Sighting distance chart (in miles and yards)

Sighting distance chart (in miles and yards)

Maximum Speed	Sighting distance, in miles (m) and yards (y), needed to give a warning time of						
	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	1/2 mile	1180y	1480y	1 mile	1m300y	1m600y	1 1/2 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 1/4 mile
95 mph	700y	940y	1180y	1400y	1640y	1m100y	1m340y
90 mph	660y	1/2 mile	1100y	3/4 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)

Sighting distance chart (in miles and yards)

Maximum Speed	Sighting distance, in miles (m) and yards (y), needed to give a warning time of						
	15 secs	20 secs	25 secs	30 secs	35 secs	40 secs	45 secs
60 mph	1/4 mile	600y	740y	1/2 mile	1040y	1180y	3/4 mile
55 mph	420y	540y	680y	820y	960y	1080y	1220y
50 mph	380y	500y	620y	740y	860y	980y	1100y
45 mph	340y	1/4 mile	560y	660y	780y	1/2 mile	1000y
40 mph	300y	400y	500y	600y	700y	800y	1/2 mile
35 mph	260y	360y	1/4 mile	520y	600y	700y	780y
30 mph	220y	300y	380y	1/4 mile	520y	600y	660y
25 mph	200y	260y	320y	380y	1/4 mile	500y	560y
20 mph	160y	200y	260y	300y	360y	400y	1/4 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

Notes

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