Railway Safety for the Emergency Services

How to ensure the safety of yourself and others at track incidents
What to do if alone at an incident

In order to preserve life there may be times when the emergency services must take immediate action within the track area, without the presence of Network Rail staff. Only do this in extreme cases, as you could be putting yourself at risk. The correct procedures are as follows.

1 Inform Network Rail Control

Before entering the track area, ask your Control to inform the Network Rail Control responsible for the affected area what you intend to do. They will want to know your location as precisely as possible. These are the main ways you can identify a location on the track:

- a signal, bridge or overhead line support number plate
- a quarter-mile post at the track side
- an electrical substation name plate
- a nearby station or level crossing.

2 Follow the track safety rules

Make sure that everyone involved:

- is aware of all the possible hazards
- knows the rules for staying safe.

3 Using hand signals to stop approaching trains in an emergency

If there is an obstruction or incapacitated person on the line, you can attempt to stop an approaching train using hand signals:

- move along the line to give as much stopping distance as possible
- stand in a position of safety facing the train
- signal the train driver by:
  - (in daylight) raising both arms above your head
  - (at night) waving a lamp or torch violently.

It has to be realised that the train may not be able to stop in time.

4 Take special care on electrified lines

The electrical power to drive trains is at high voltage and potentially very dangerous. If there is a risk of electrocution, the safest option is to ask Network Rail Control to switch off the power, which can be done within a few minutes but in practice it will not be done until a railway person arrives on site.

Never assume that power is switched off, unless you have positive assurance from Network Rail Control. Remember that rain and floods increase hazards.

For an overhead line system:

- if power is ON, do not normally approach the live parts of the system closer than about 3 metres (10 feet) and NEVER closer than 1 metre (3 feet) - HIGH-VOLTAGE ELECTRICITY CAN JUMP A GAP
- if power is OFF, the system is safe to approach but not to touch
- if the system is ISOLATED (switched off and earthed) it is safe to touch, but only when absolutely necessary.

For a ground level conductor rail system:

- if power is ON, do not touch the conductor rail, nor anything lying across it, nor a train standing on it. You can step over the rail provided you take the utmost care
- if the power is OFF, it is safe to touch the rail, but only when absolutely necessary.

Move to safety as soon as possible

Once any essential immediate action is completed, move to a position of safety and wait for confirmation from Network Rail about an agreed safe method of operation.

In the later stages:

- it is helpful to scale down an incident as soon as possible, allowing stopped trains to run at caution
- when emergency services personnel have moved clear of the lines, make sure that Network Rail Control is informed. It is vital that this message is passed either directly or through your own Control as speedily as possible to minimise serious disruption to train services.

Working with Rail at an incident

A Rail Incident Officer (RIO) from Rail will be present on site to co-ordinate this. This person provides the principal co-ordination for the railway companies, and will help to manage the personnel to set up a safe method of operation.

There are two key aspects to ensure an efficient outcome:

1 Effective co-operation

Close co-operation between all parties is vital. It will also help to minimise any delays, which are themselves a risk to any platform overcrowding and passengers waiting on stopped trains.

2 Agree a safe method of operation

Every effort should be made to agree an appropriate method of action, moving inside the boundary fence as soon as safety will allow. All others need to be informed.

Most incidents can be tackled without any disruption to train movements. Where disruption is unavoidable, these are the steps:

(a) Slowing trains by running into the incident

Train drivers are warned that emergency services personnel are on the track. They must drive slowly. The approach speed will depend upon circumstances, short/long of the train, and whether any person who may be on the track does not move clear.

(b) Stopping trains by use of signals

The normal signalling system provides a safe and reliable method to stop trains.

(c) Switching off the electricity

This is done if necessary to protect emergency services personnel from electrocution. It is not used simply to disable lines.
Working with Network Rail at an incident

A Rail Incident Officer (RIO) from Network Rail may be present on site to co-ordinate the railway response. This person provides the principal contact point with the railway companies, and will help emergency services personnel to set up a safe method of operation.

There are two key aspects to ensure a successful and efficient outcome:

1 Effective co-operation
   Close co-operation between all parties will minimise the risks. It will also help to minimise service disruption and delays, which are themselves a source of risks such as platform overcrowding and passengers alighting from stopped trains.

2 Agree a safe method of operation
   Every effort should be made to agree on this before moving inside the boundary fence. The most appropriate method will depend on the nature of the incident and the risks.

   Most incidents can be tackled without significant disruption to train movements. Where safety makes disruption unavoidable, these are the methods available:

   (a) Slowing trains by running them at caution.
      Train drivers are warned that emergency services personnel are on the track. They must drive at such a speed, depending upon circumstances, that they can stop short/clear of any person who may be on the track and does not move clear.

   (b) Stopping trains by use of signals.
      The normal signalling system provides the most positive and reliable method to stop trains.

   (c) Switching off the electricity supply.
      This is done if necessary to protect people from risk of electrocution. It is not used simply to stop trains — they can still coast long distances, and diesels are unaffected.

Be aware of:

Trains
Approaching trains are very fast, either direction on the track. They can cover 55 metres over a mile to stop.

Tripping and slipping
The most common cause of tripping or slipping on objects and other loose objects.

Trapping your feet
Points are a particular hazard.They can move unexpectedly.

Train construction
Some vehicles, especially older material such as asbestos.

Dangerous and hazardous
Freight trains in particular may be hazardous.

Detonators
These small devices are placed for the safety of dangers ahead. They are connected by a wire or fuse to the train's signal system.

Tunnels
Hazards include limited visibility and the risk of colliding with trains and tunnel walls.

Limited clearance
The track area near structures may be too narrow to pass.

Electricity
Overhead lines carry 25 kV, conductor rails carry 750 V. Electrical equipment also operates at lower voltages.
Be aware of the hazards!

**Trains**

Approaching trains are very quiet and may appear from either direction on the track. At speeds up to 125mph, they can cover 55 metres (60 yards) in a second and take over a mile to stop.

**Tripping and slipping**

The most common cause of accidents on the track is tripping or slipping on objects such as cables, sleepers, rails and other loose objects.

**Trapping your feet**

Points are a particular hazard because they are likely to move unexpectedly.

**Train construction materials**

Some vehicles, especially older ones, may contain hazardous material such as asbestos.

**Dangerous and hazardous goods**

Freight trains in particular carry a variety of such goods.

**Detonators**

These small devices are placed on rails to warn train crews of dangers ahead. They are stored in signal boxes and trains.

**Tunnels**

Hazards include limited visibility and limited space between trains and tunnel walls.

**Limited clearance areas**

The track area near structures, cuttings or embankments may be too narrow to stand in safely if trains pass.

**Electricity**

Overhead lines carry 25,000 volts AC, ground level conductor rails carry 750 volts DC. Some signalling equipment also operates at high voltage.

- don’t go on the track unless absolutely necessary
- get help from railway staff if possible
- always be vigilant for yourself and colleagues

- step over not on rails and sleepers
- avoid crossing the track near points
- don’t walk on top of cable trunking
- keep vigilant

- don’t step within the moving blades of points
- don’t walk on top of rails

- ask Network Rail Control for specific information

- ask Network Rail Control what products the train is carrying
- consult the train crew and observe the warning signs on rail vehicles

- move at least 30 metres from a detonator before a train passes
- during fires, ask railway staff where detonators are stored

- don’t enter a tunnel until Network Rail confirms trains have stopped
- ideally wait to be accompanied by Network Rail staff

- take notice of warning signs
- don’t enter the area unless you can reach a position of safety before a train arrives

- never assume electrical equipment has been made safe, unless confirmed by Network Rail
- don’t get closer than 3 metres to live overhead line equipment
- take extreme care to avoid touching conductor rails
- always treat as live
Network Rail has primary responsibility for safety on Britain’s railway, and is the first point of contact for any incident on the track.

Golden rules for safety on the track

Stop and think before going on the track

- unless absolutely necessary to save a life, don’t go on the railway or near any electrical equipment, unaccompanied by railway staff
- keep the number of personnel to a minimum
- assess the risks and make sure you will be safe
- inform Network Rail Control what you intend to do
- get help from Network Rail staff if possible — their expert knowledge about the railway and railway vehicles can often save a lot of time
- wear high-visibility clothing

Stay vigilant, stay safe

- be aware of all the possible hazards
- stop, look and listen for trains
- make sure you have time to reach a position of safety at least two metres away from the running line
- define the limits of operation clearly and keep within them
- never assume trains have been stopped or cautioned unless so advised by a Network Rail Incident Officer (RIO)
- remain vigilant at all times

Network Rail wishes to acknowledge the following organisations for their help and assistance in producing this leaflet.

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- HM Fire Services Inspectorate
- British Transport Police

For more information on working with Network Rail at incidents, please refer to “Emergency Services Rail Incident Protocol” RT/CM/305/2004

Network Rail document RT/CM/305/2004