

Access Improvement

Depot Track Access Learning information booklet



Issue 1

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I Introduction

This learning information handbook has been produced for those who need to access the track in depots and remote stabling sidings.

After completing this course:

- fleet personnel will be able to access track areas in depots and stabling sidings (where traction current is on 24 hours a day) alone to carry out train inspections
- cleaners and security personnel will be able to access track areas in depots and stabling sidings (where traction current is on 24 hours a day) alone to carry out their duties.

Personnel who meet the required standard in both the theory and practical assessments, will be awarded a track safety certificate endorsed Depot Track Access (DTA).

2 Personal responsibilities

You must carry your track safety certificate at all times when in a depot or a remote stabling siding if you need to go on the track.

You must not go on or near the track in the depot or remote stabling sidings unless it is absolutely necessary and your duties require you to do so.

If your duties require you to be on or near the track in the depot or remote stabling siding, you must be authorised and:

- take reasonable care of your own health and safety, and the health and safety of others
- be aware of any expected hazards
- not interfere with or misuse any safety equipment
- pass safety critical messages using the phonetic alphabet
- carry out local instructions relating to specific locations
- use authorised walkways and walk boards where possible
- report incidents and hazards.

3 Roles and responsibilities

3.1 Protection Master



A person certificated by London Underground (LU) to provide protection for themselves and others. A Protection Master can be identified with a 'Protection Master' armband worn on the right arm above the elbow.

There are three categories of Protection Master:

- Protection Master Traffic Hours (PMTH) - when trains are moving and traction current is on
- Protection Master Engineering Hours (PMEH) - when trains are not moving and traction current is off
- Depot Protection Master (DPM) - in a depot.

3.2 Lookout



A person certificated by LU to warn staff who might be exposed to danger from moving trains or vehicles. A lookout can be identified with a 'lookout' armband worn on the left arm above the elbow.

Lookout must:

- carry the correct equipment
- warn personnel according to the correct procedures
- stay in position as indicated by the PMTH / DPM until protection is no longer required or until relieved by another lookout.



You must not talk to or distract the lookout.

3.3 Possession Master



A person certificated by LU to take control of a possession. A Possession Master can be identified with a 'Possession Master' armband worn on the left arm above the elbow.

3.4 Maintenance Manager Operations / Duty Depot Manager



Controls and manages the day to day running of the depot.

3.5 Controller

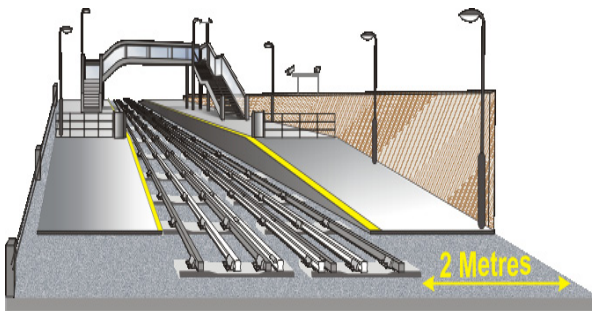


Any suitably competent person, in overall control of the train service on a line, normally acting from the line's control room.

4 Getting to know the LU railway environment

The depot is a potentially dangerous place, especially the track which is why LU has rules in place that allow personnel to go on or near the track in a depot and remote stabling sidings, safely. These rules cover where and when personnel can and cannot work.

4.1 Track



The track is not just the permanent way – but also the ground within 2 metres of any rail (unless guarded by an approved physical barrier) and platform ramps, but not station platforms.

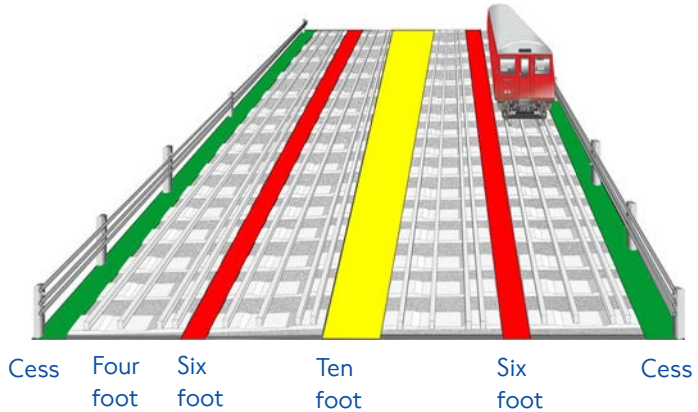
You are on or near the LU track if you are:

- within two metres of any rail
- on the permanent way itself
- on a platform ramp.



Personnel are NOT on or near the LU track if they are on a platform (not a cleaning shed platform) or the other side of a permanent structure or an approved physical barrier.

4.2 Track Areas



Cess - the space alongside the permanent way extending to a cable run or other boundary

Four foot - the space between the two running rails of one line

Six foot - the space between one line and another where the lines are the normal distance apart

Ten foot - the space between one line and another, where a wide space is provided between one pair of lines, where there are three lines or more.



In depots and stabling sidings six foot and ten foot are referred to as areas between tracks, these areas are NOT a place of safety unless it meets the required place of safety dimensions.

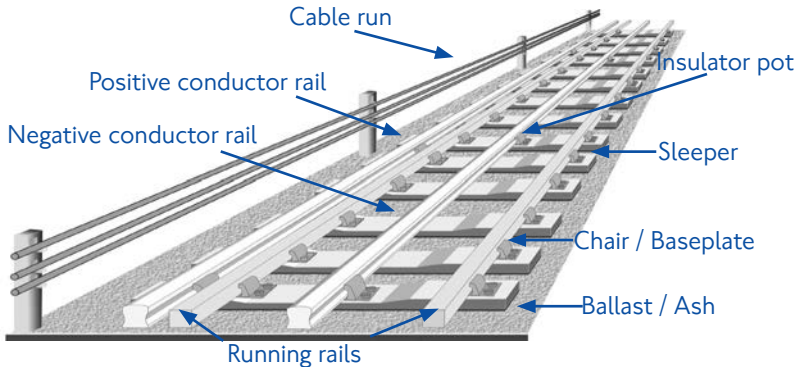
The place of safety can be the cess or an area between tracks. You should never walk in the:

- four foot unless required by your duties
- area between tracks when a train approaches.



If you get caught by approaching trains, in an area between tracks which is not wide enough and you cannot get to a place of safety, you must lay face down, parallel with the track and clear of any obstructions.

4.3 Track Components



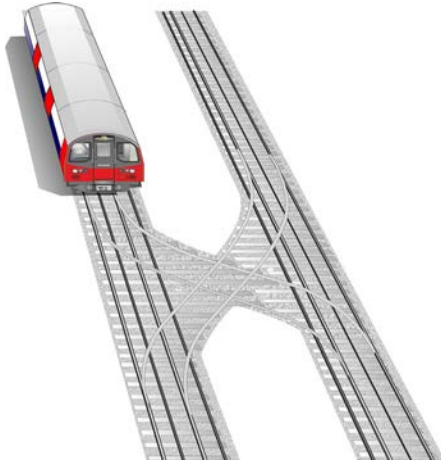
Track components and their function:

- running rail – the two rails the train wheels run on
- negative traction current rail – high voltage rails that is raised higher (38 millimetres above the running rail) on porcelain pots, it is always located centrally between the running rails of one line
- positive traction current rail – high voltage rails that is raised higher (75 millimetres above the running rail) on porcelain pots, located on the outside of the two running rails of one line
- sleeper - designed to spread the load of the train, can be concrete or wood and often slippery especially during winter months
- baseplates and chairs - a component, fixed to the top of a sleeper or timber which supports and locates the running rail
- fastenings - a component that secures the running rail to a sleeper
- ballast / ash - material used to spread loads from the underside of the sleeper to the formation and holding the track in the desired location. It also provides drainage for the track.



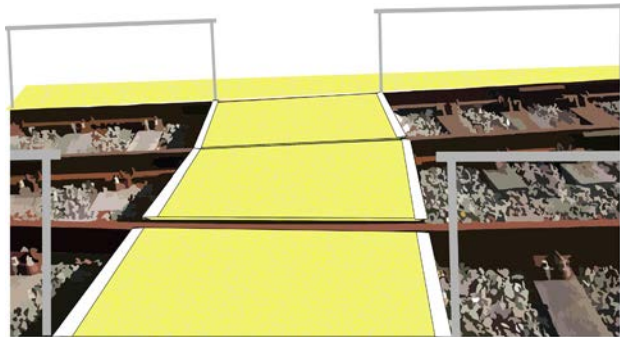
The cable run consists of posts running alongside the cess where cables are attached.

4.4 Points and crossings



Points and crossings – divert trains from one line to another.

4.5 Walk boards



Walk boards should be used where possible to cross the track.

4.6 Track hazards

There are four main physical dangers on the track:

Trains

Electricity

Slipping

Tripping.

4.7 Train hazards in depots

There are several hazards related to trains in depots:

- train movements are bi-directional and can approach from any direction
- trains move more slowly (5, 10, 15 mph) and quietly
- trains may move when uncoupled, or with no driver's cab
- hidden train movements behind stationary trains
- the lighting levels may not be adequate.

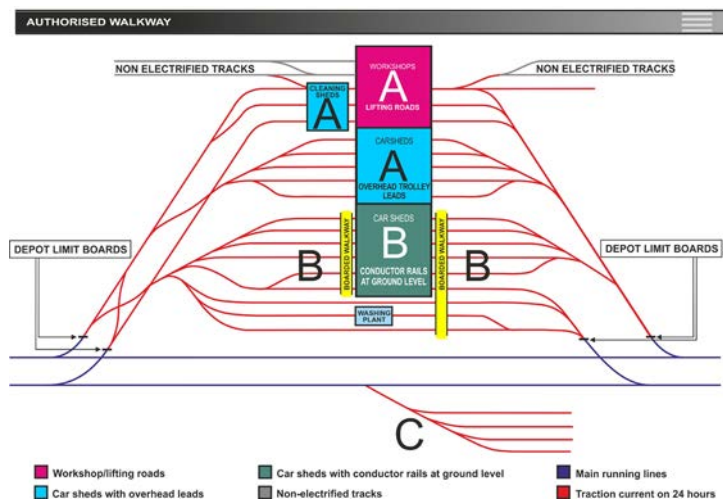
5 Depots and stabling sidings

These are locations where trains are stabled, and traction current is normally on 24 hours a day. Depot personnel carry out general train maintenance and overhauls, within the various areas of the depot.

The trains are also cleaned internally and externally.

In stabling sidings trains are cleaned internally and basic maintenance is carried out.

Depots and stabling sidings can be divided into three separate areas:



5.1 Area A:



- sheds with no traction current rails at ground level
- sheds with raised platforms for access to the interior of train, and where traction current rails can be isolated locally using switches located at ground level or are separated by physical barriers
- sheds with overhead trolley leads.

You cannot work in area 'A' unless you are suitably certificated.

5.2 Area B:

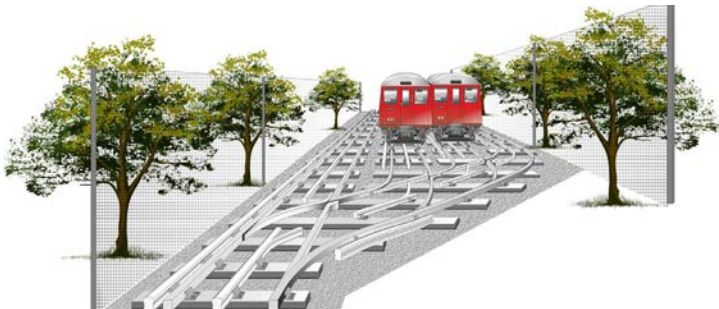


all track within depot limits, but not including area 'A'

- all track outside in the depot yard where traction current is at ground level
- non – electrified track (permanent way sidings)
- stabling sheds with conductor rails at ground level that cannot be isolated locally.

You cannot work in area 'B' unless certificated to DTA level or Basic Track Awareness (BTA) protected by a DPM.

5.3 Area C



- all stabling sidings where traction current is on 24 hours
- conductor rails at ground level that cannot be isolated locally.

You cannot work in area 'C' unless certificated DTA level or BTA protected by a DPM.



You must be site familiar with the areas you are accessing.

5.4 Depot limits



DTA certification is not valid past this point.

5.5 Non-electrified track



These are sections of track which do not have conductor rails.

6 Electricity

Traction current remains on 24 hours a day in most depots and stabling sidings.

Personnel working near live traction current rails must have received training on:

- the hazards of live traction current
- what actions to take in an emergency.

6.1 Potential danger of electricity



Collector shoes and the associated equipment may be live, even when not in contact with the conductor rails, therefore additional care must be taken to make sure that nothing worn or carried can touch the shoe gear when walking along the side of a train.



Never take chances with live traction current rails.

7 Slipping and tripping



You can help to avoid slipping and tripping by following good housekeeping guidelines. You must:

- keep the worksite tidy
- pay attention to what you are doing
- not cut corners when it comes to safety
- not let yourself be distracted from the task at hand
- not leave tools or equipment lying around.

Remember that:

- majority of slipping and tripping hazards are caused by poor housekeeping
- keeping safe involves knowing the hazards and how to avoid them
- it also means sticking to the safety rules and NEVER taking risks.



When on or near the LU track, approved PPE must be worn.

8 Accessing stabling sidings

When personnel need to access stabling sidings you must always:

- report to the accountable manager if the sidings are not your normal place of work
- use authorised or designated walkways
- use walk boards
- use footbridges.

You must not cross live rails unless absolutely necessary.

At locations where stabling sidings cross the main line or are split either side of the main line, you must follow the local procedures for these locations.

At certain locations you must be certificated and competent to Network Rail (NR) standards if you need to go beyond the depot limits onto any area of the operational railway which is designated as being under NR rules.



You must be site familiar with the area you are accessing.

9 Arriving at the depot

When arriving for work at a depot that is not your normal place of work, you must:

- be in possession of a Passport to Depot certificate
- use the authorised walkways to enter the depot
- sign in at the security point in the gatehouse or depot entrance and obtain a visitor's pass, if required
- sign in at the Maintenance Manager Operation's (MMO) / Duty Depot Manager's (DDM) office if the general office is closed
- have received the local tour of the depot.



Unless instructed otherwise, always use the authorised or designated walkways and walk boards in the depot/sidings; these are marked out with yellow lines.

10 Deciding whether it is safe to go on the track

It is safe for you to access the track alone, in a depot or stabling sidings, providing your own protection if:

- certificated to the level of DTA
- familiar with the area
- illumination is adequate
- permission is granted from the manager accountable for the location
- able to adhere to all the safety rules.



It is not safe to access the track alone, if the work distracts personnel from looking out for trains every five seconds.

11 Preparing to go on the track in a depot

Before going on the track, you must be familiarised with area 'B' and 'C'. This must be carried out by a competent member of LU personnel or DPM, who are familiar with the area. Individuals must know:

- the train speed for the specific location
- track layouts and walkways
- layout of depot sheds
- traction current sections
- how points are controlled
- local hazards
- places of safety.

12 Clothing and footwear

Whenever accessing the track, you must wear LU approved Personal Protective Equipment (PPE):

- approved high visibility clothing correctly fastened
- trousers
- no loose clothing that could get caught up on a passing train
- no long coats that can drag across the traction current rails
- approved footwear with adequate support for walking on rough ground.



Additional PPE may be required as per the method statement.

13 Protecting yourself if you are alone on the track

Protection is defined as 'procedures to make sure personnel on or near the LU track are not endangered by moving trains or mechanised vehicle'.

When accessing the track alone you will be providing your own protection and will be entirely responsible for your own safety on the track.

13.1 Providing your own protection

When providing your own protection whilst on the track in area 'B' and 'C', you must:

- walk facing oncoming traffic wherever possible
- be visible to train operators/shunters
- not carry out any activity that distracts you from looking up every five seconds
- always have at least 25 seconds continuous sighting time of approaching trains
- know where a place of safety is
- on sighting a train immediately move to the place of safety
- acknowledge the train operators/shunters warnings by raising one arm above your head
- walk around the depot using official walkways and walk boards wherever possible
- be aware of changing conditions.

section 13 Protecting yourself if you are alone on the track

13.2 Sighting time and distance

How far a train travels in 25 seconds

8kph/5mph = 3 carriages



60m / 66yds

16kph/10mph = 6 carriages



110m / 121yds

24kph/15mph = 9 carriages



170m / 187yds

You must have at least 25 seconds continuous sighting time. Sighting time is the time from when you first see an approaching train to when it passes you, when you are in the place of safety.

If it is not possible to time a train, use the sighting distance method to calculate the sighting time needed for the train speed in the depot.



If the minimum sighting time cannot be maintained you must:

- leave the track
- report back to your manager.

14 Place of Safety

A place of safety is a location beside the permanent way where a person (or persons) can stand safely when trains pass. A place of safety must meet the minimum distance requirements as shown in Rule Book support information `places of safety`.

A place of safety must:

- have flat level ground to stand and walk on
- have a reasonably good surface to walk on
- not be liable to cause slipping and tripping
- allow you to walk facing approaching trains (where possible)
- be wide enough to stand or walk in.

You should never walk in the:

- four foot unless it is absolutely necessary
- six foot
- ten foot / area between tracks when a train approaches.

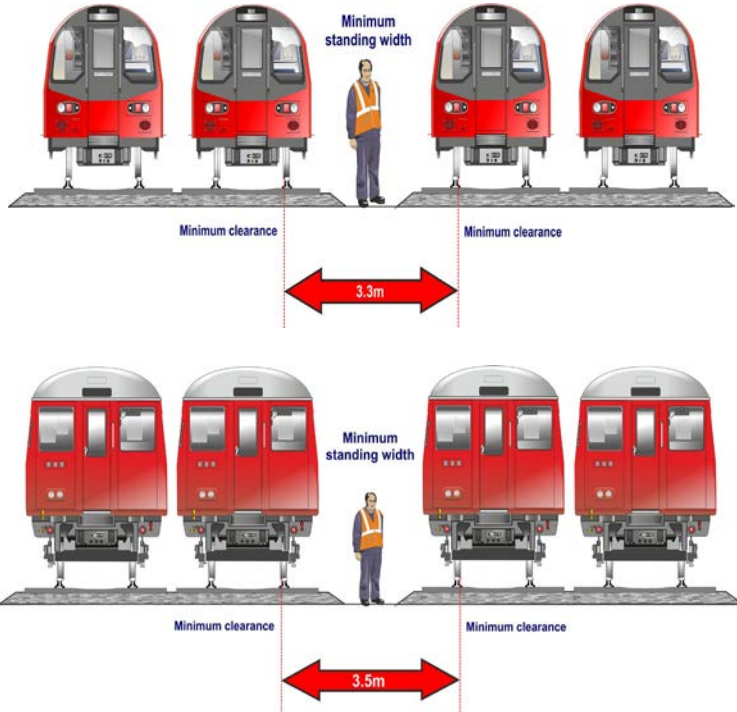
14.1 Using the cess as a place of safety



The cess can be used as a place of safety on:

- straight track
- curved track
- curved track with a check rail.

14.2 Using the ten foot / area between tracks as a place of safety



The ten foot / area between tracks can be used as a place of safety on:

- straight track
- curved track
- curved track with a check rail.



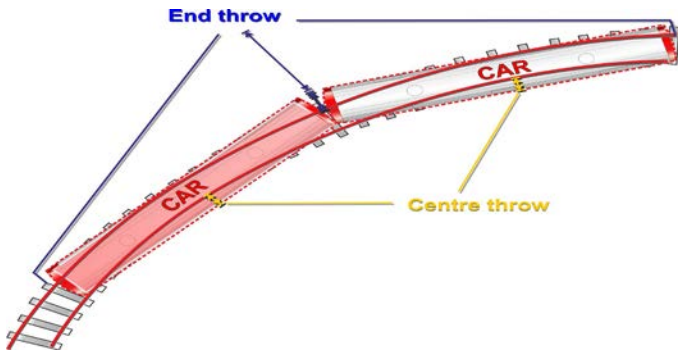
When trains pass you must stand sideways in the middle of the ten foot/area between tracks.



In depots where mixed stock operate, the minimum dimensions calculated for a place of safety must be those shown for surface stock.

14.3 Curved track

On curved track extra care must be taken as curved track makes the carriages hang out over the rails anywhere except at the bogies (end throws and centre throw).



On curved track you should allow for extra clearance. This will depend on whether the track involved has a check rail.

A check rail is an additional rail fixed in the four foot close to the running rail on the inside of the curve, which restricts lateral movement of the wheels of a train.



15 Limited clearance signs



A limited clearance sign indicates a location besides the permanent way where a person cannot stand safely when trains pass.

You must not enter an area of limited clearance unless you have sufficient time to walk through the entire limited clearance area before a train passes.

Before walking through an area of limited clearance you must take into consideration:

- the length of the limited clearance area
- sighting time available.



If adequate sighting time is not available other routes must be used.

16 Using walkways and areas between tracks



The safest way to walk around a depot is to use official walkways and walk boards where possible.

Areas between the tracks can also be used provided they are wide enough.

When using walkways and walk boards which cross the track, or are within 2 metres of the nearest rail, and there are no physical barriers, personnel must be suitably certificated and protected.

If walking in the four foot, step on the ballast/ash and not on the sleepers as they can be slippery, especially near train wash roads.

17 Crossing the Track



17.1 Using walk boards

Using walk boards is the safest method of crossing the track in depots and sidings. Walk boards:

- are raised to the same height as the running rails
- have anti slip surfaces
- have conductor rails cut back.

When crossing track using walk boards:

- look in each direction for moving trains
- be aware that trains may be stabled up to the walk board
- if driver's cab is occupied, get permission to cross in front of the train
- be aware of hidden train movements.

17.2 Crossing live rails

If you are unable to use walk boards and need to cross live rails you must:

- take the safest and shortest route
- look in each direction for moving trains
- look out for obstructions and slippery conditions
- step over each rail
- step on the ballast or ash
- not put your feet where they could become trapped by moving equipment
- leave at least 20 metres between you and a stabled train, unless arrangements are made to make sure the train will not move.



Personnel must not cross live rails unless absolutely necessary and have sufficient sighting times.

18 Carrying loads

You must not carry anything longer than 2 metres across live track.

Take care when carrying anything large or awkward, particularly on or near live rails, you must always:

- keep long lengths of bare metal parallel to the track with both hands on top
- look where you are going – carrying a load increases the risk of slipping and tripping.



Items that are large and awkward that require more than one person to lift must not be carried across live rails.

19 Working in wet weather

LU policy states that live track must not be worked on during periods of continuous wet weather. Wet weather is defined as:

- rain
- hail or snow
- periods when the track is wet enough to increase the risk of electrocution and underfoot hazards.



All other weather conditions must be taken into consideration.



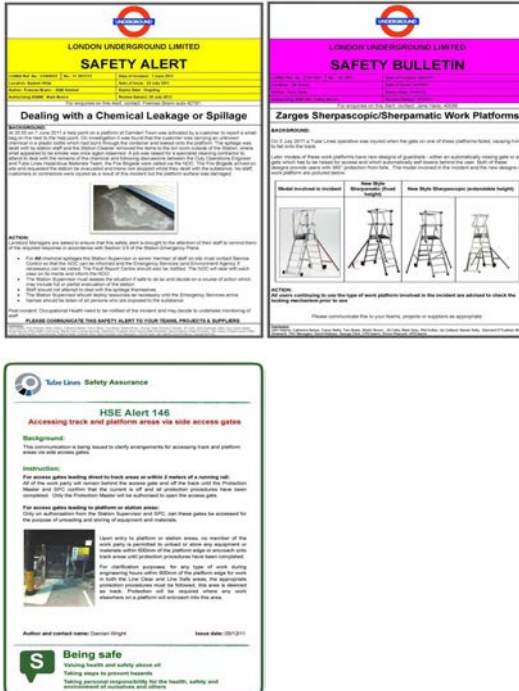
LU has a firm policy on working during wet weather and that the policy applies to everyone.

20 Refusal to work

It is your right to refuse to work on the grounds of health and safety if asked to:

- work in dangerous conditions
- take unnecessary risks.

21 Safety alerts and bulletins



Safety alerts are for major faults that would result in serious or fatal injury and where immediate remedial action is required.

Safety bulletins will alert you to safety issues related to health and safety in the workplace.

22 Carrying out inspections or minor works on trains



When working on the outside of a train in areas 'B' or 'C' you must:

- ensure that the work will not interfere with that of other staff working on the train
- display the appropriate target on the train
- not carry out any activity that prevents you from looking up every 5 seconds.



If you are required to board a stationary train, you must:

- get on and off using the side doors
- take particular care when getting off - make sure no other train is approaching.

If in an emergency, the front and rear cab doors have to be used, do not:

- step back onto the traction current rails
- slip on couplings
- step back into an inspection pit.



There may be no steps, ladders or handrails.

23 Weed killing applications

After walking through an area that has been treated within the last 24 hours, personnel must make sure that they wash their hands and boots.

24 Communications

A	Alpha			Q	Qubec
B	Bravo			R	Romeo
C	Charlie			S	Sierra
D	Delta			T	Tango
E	Echo	K	Kilo	U	Uniform
F	Foxtrot	L	Lima	V	Victor
G	Golf	M	Mike	W	Whiskey
H	Hotel	N	November	X	X-ray
I	India	O	Oscar	Y	Yankee
J	Juliet	P	Papa	Z	Zulu

24.1 Phonetic alphabet

Communication is a vital part of rail safety, and LU's communication protocols must be used.

24.2 Using numbers

If you are using numbers 10 and over in your message, you must say them one at a time.

For example, 'Train 123' must be spoken as 'Train one two three' not 'Train one hundred and twenty three'.

You must also say the number '0' as 'zero'.

24.3 Using mobile phones

Mobile phones should only be used:

- if it is necessary as part of your duties
- in an emergency
- in a place of safety.

25 Emergency actions

25.1 Stopping a train



If you need to stop a train in an emergency, stand in a place of safety, and then use one of the approved signals:

- wave both arms above your head
- wave anything across your body.

25.2 Injured person

Anyone going on or near the track must know what to do if someone is injured.

You must not move a seriously injured person, unless leaving them where they are, would place them in greater danger and cause further injuries.

If a person is seriously injured, and not in contact with live conductor rails, contact the MMO/DDM who will implement the local depot emergency procedures.

If a person is in contact with the live conductor rails:

- consider your own safety first
- get traction current switched off immediately whenever possible
- depending on weather conditions, use a piece of dry wood or an insulated tool to roll them off.

25.3 Getting traction current switched off in an emergency

If traction current needs to be switched off in a depot or stabling siding in an emergency:

- contact the Controller or the MMO/DDM
- get the current switched off in the particular traction current section
- check that the MMO/DDM has been advised (if applicable).



You must always wait for confirmation that traction current has been switched off.

The Controller or MMO/DDM will want to know the following:

- your name
- department or company
- location and section of track which switch off is required
- reason for switching traction current off.

If you are getting traction current switched off, it is also your responsibility to contact the Controller or MMO/DDM again to say when it is safe for traction current to be switched on - unless:

- you have arranged for someone else to take over the responsibility to do this
- you have told the Controller or MMO/DDM who that person is.

26 Possessions



A possession is a designated area of track taken out of service for major engineering work. It is under the control of a Possession Master (POM).

If anyone requires entry to any area under a possession, they must have permission from the POM.

27 References

The references to Rule Books:

- Rule Book 1 Communications
- Rule Book 3 Traction current and high voltage supply
- Rule Book 15 Possessions protection methods
- Rule Book 21 Personal safety on the track
- Electricity at Work Regulations

