

MANAGING LEVEL CROSSINGS: A GUIDE FOR USERS, DESIGNERS AND OPERATORS

Railway Safety Publication 7



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Foreword

Note: CPT suggested amendments and replacement wording are in red normal text and comments and explanation are in red italics.

What is the purpose of this guide?

This document provides guidance on the safe management, operation, modification and use of Britain's 9,000 level crossings.

This guidance will eventually replace ORR's *Railway Safety Principles and Guidance Part 2 Section E: Guidance on level crossings* ("RSPG2E"), first published in 1996.

Who is this guide for?

The guide has been developed as a download, with four main chapters.

Chapter one is aimed at users of level crossings, such as pedestrians and motorists. It provides easy to understand advice on how to use a crossing safely.

Chapters two, three and four are more technical in nature and are likely to be of interest to railway infrastructure managers; highway authorities; planning authorities; station operators; landowners; and authorised operators of user-operated crossings.

Where other detailed resources or further guidance is available, from ORR or other authorities, this is clearly signposted from this document.

This guidance does **not** apply to tramways, as the characteristics of tramway crossings and the principles of tramway operation are different.

We agree, but it has not stopped main line crossing arrangements being used in the past so we need to reinforce this. For example, Statutory Instrument 1996 No. 1786 "The Private Crossings (Signs and Barriers) Regulations 1996" were written predominantly for main line but did include tramways. All the main line content tends to obfuscate the tramway information which, in our view, would have been best dealt with under bespoke tramway provisions in law.

We suggest adding a sentence to say "Where a tramway crosses a road, this is normally treated as a road junction with the tramway as the major road, rather than as a railway level crossing. Guidance on tramway crossings is provided in RSP2."

We note that this consultation refers only to Chapter 1: Guidance for Road Users. It is the remainder of the document which is of most use to operators, designers, those applying for a level crossings order etc. When can we expect a draft, and will it incorporate the views of light rail, heritage rail and tram operators, Nexus and the North Yorkshire Moors Railway in particular? Will it

make reference to the specific guidance on crossing assessment which UK Tram is developing ?

Chapter one - a guide for users of level crossings

Why you should read this chapter

The misuse of level crossings creates significant danger – it is the single largest cause of accidental fatalities related to railway operations in Britain.

We would say not – it is far more commonly associated with the road operations and the consequential fatalities are more often road rather than rail. Remember that it is a railway crossing of the highway and it is on the highway that most of the incidents and offences take place.

This chapter will give you information on how you can use crossings safely, either repeating or building on information that is contained elsewhere, such as in the Highway Code or Network Rail's 'Don't Run The Risk' campaign.

What is ORR's policy on level crossings?

As the safety regulator for Britain's railways, our role is to provide clear advice and enforce the law.

Our view is that, other than in exceptional circumstances, no new level crossings should be created.

The "policy" of shunning new Level Crossings does not seem to be explained or justified and may not be aligned with national or EU policy particularly in times of recession and financial restraint. We suggest such a statement reflects a "risk averse" approach rather a proportionate "costs and benefits" approach. Any new crossing has to be justified on a risk basis – do the risks associated with a new crossing justify the cost of providing an alternative (bridge etc) – not forgetting the risks of people making an unauthorised crossing if the alternative requires a long detour.

In any case, road users need not be concerned with ORR's policy on new crossings.

We believe that a number of people and organisations have a role to play in reducing the risks arising from level crossings. Decisions about level crossings should involve rail companies, highway authorities and other relevant organisations, such as user groups, as early on as possible.

We are also committed to increasing awareness of the key factors affecting safety of level crossing users.

Why have we produced this guidance?

We want our advice on level crossing safety to be accessible to everyone who can help reduce the risks. This first chapter is aimed at the user.

We also needed to bring our technical guidance for designers and operators of level crossings up to date. We have also included our

guidance on how to apply for a level crossings order. See chapters two, three and four for further information.

Our work to simplify the law

The Law Commission (of England and Wales, and Scotland) are undertaking a review of the existing law governing level crossings, which users find dated and confusing.

A sweeping statement – from recent experience, it is new law which tends to confuse. It is unlikely that road users will read the actual regulations.

A Law Commission consultation paper on ways to improve the law is due to be published in 2010. See either <http://www.lawcom.gov.uk/> or <http://www.scotlawcom.gov.uk/> for further information.

This guide will be updated to take account of any changes to the law that arise from the project.

Level crossing basics

A level crossing may take many forms depending on whether it is on a public or private road, and whether it is for **road vehicle**, pedestrian, cyclist or equestrian use.

The type of protection arrangements appropriate at any particular crossing will depend upon the location, the level of use and the nature of traffic.

Level crossings, whether used mainly by motorists in built up areas, or a kind used by pedestrians in the countryside, are designed to look similar to the user. This is to help users understand what they need to do at a given crossing and to prevent conflicting messages.

Users will always be warned whenever they are approaching a level crossing.

Using level crossings safely

When using a level crossing to cross a railway, it is important to bear in mind that trains have very long stopping distances compared to road vehicles. This is often beyond the distance to where the driver can see ahead. Whereas a car travelling on the road at 60mph can be brought to a stop in around 70 metres, a passenger train travelling at the same speed can take over 800 metres to stop.

The characteristics of a train mean that the safety of level crossings is largely reliant on users recognising the hazards and obeying instructions. Failure to follow these instructions can result in significant risk to the user and the railway. It can also lead to prosecution.

Motorists

Misuse of level crossings by road vehicle drivers – such as ignoring red warning lights ...

NO! Red lights are not warning lights, they are stop signals as prescribed in Regulation 40(b) of TSR&GD [“the intermittent red signals shall convey the prohibition that traffic shall not proceed beyond the stop line or the road marking shown in diagram 1003.2”]

... or attempting to beat the barriers – creates a significant risk. Motorists can reduce the risk to themselves, other road users and the railway by doing the following:

- Always approach and cross level crossings with care

Add:

- Always obey alarm warning signals and lights,

This is surely more important than anything else.

- Never drive onto a crossing until the road is clear on the far side

In today's traffic conditions there will be times when the exit is never clear.

The criterion should be that there is adequate space for the vehicle beyond the crossing.

- Never stop or park on a crossing

- Obey safe height warning signs if electric lines pass over the crossing

- Obey any sign requiring the use of a railway telephone to seek permission to cross

- If your vehicle breaks down, or if you have an incident on a crossing you should:

- get everyone out of the vehicle and clear of the crossing immediately

- use a railway telephone if available to tell the signal operator and follow the instructions you are given

- move the vehicle clear of the crossing only if there is time before a train arrives. If a warning (alarm or lights) is activated, or you can see or hear a train approaching, leave the vehicle and get clear of the crossing immediately

Other users (for example, pedestrians, horse riders, cyclists, persons of reduced mobility)

Take special care when crossing railway lines using level crossings, especially "user controlled" crossings along footpaths where there are no automatic barriers or railway staff. In particular, you should do the following:

- Always obey alarm warning signals and lights,
- Keep children with you
- Keep dogs on a lead
- If there are no warnings or lights, **stop, look and listen**, then look again before you cross, remembering that trains **may** travel faster than you think ...

Insert “may” in this sentence – some users will appreciate how fast trains travel, and not all crossings are on high speed lines.

- ...and that curving lines and overgrown vegetation can sometimes obscure the view.
- If it is safe, cross quickly, taking care not to trip on the rails (or any other part of the crossing for that matter).

This addendum needs to be inserted – rails might not be the only tripping hazard.

- Do not stop on the crossing.
- On user controlled crossings, make sure you shut both sets of gates behind you.
- When in a group, don't just follow the person in front. Everyone should take responsibility for their own safety and stop, look and listen before crossing .

We suggest this advice might need to be modified for youngsters or mentally challenged people

- If in a large group, cross in smaller groups to avoid having to wait or queue on the crossing while those in front pass through the gate or over the stile on the far side.

Add:

- Always make sure your exit is clear before starting to cross
- Cyclists should slow down and stop on the approach to a crossing and obey any signs instructing them to dismount – crossing surfaces can be uneven and slippery.
- Bridleway crossings should be designed so that horse-riders do not have to dismount to operate the gates. However, inexperienced riders should dismount before crossing the tracks.

We suggest re-wording to something like: “Most (or some) bridleway crossings are designed...” The point here is that the word “should” should be reserved for items of guidance, (as with “riders should dismount”), whereas in the first sentence it is used in the sense of “it ought to be the case that...”

Types of Level crossing and how to use them safely:

Need there be separate guidance for the different types of crossing – the ones with stop lights anyway? As far as the road user is concerned, he need not know what sort of crossing it is. The guidance is essentially the same in all cases – if the lights are flashing, stop.

Full barrier crossings (both automatic and operated by railway staff)

We are not aware of any automatic full barrier crossings - the exit should never be blocked on an automatic crossing

Appearance	<p>This type of crossing is protected by road traffic light signals and lifting barriers on both sides of the railway.</p> <p><i>"Protected" is a word which occurs frequently in this document. It is a railway term, as though the crossing needs protection against evil road traffic. From the road users' point of view, "obstructed" might be a better word.</i></p> <p>Insert photo</p>
Method of operation	<p>The barriers are normally kept in the raised position and, when lowered, extend across the whole width of the carriageway on each approach. An audible warning to pedestrians is also provided before the gates close.</p> <p><i>We are not sure that the audible warning sounds continuously once the gates are closed – it doesn't at the crossing I am familiar with.</i></p> <p>The crossing is operated when a train approaches by either manually or automatically initiating the display of the road traffic light signals towards approaching road traffic followed by the lowering of the barriers</p> <p><i>But only if a signalman or crossing keeper has confirmed the crossing is clear can a train be signalled – it is not an automatic crossing simply an auto-lower facility – this guidance seems to be confused here.</i></p>
How to use the crossing safely	<ul style="list-style-type: none">• Obey the flashing red stop lights• Stop behind the white stop line across the road <p><i>Surely "at" or "before" would be clearer than "behind" and in line with other highway guidance</i></p> <ul style="list-style-type: none">• If the amber light comes on, stop behind the white stop line, unless you are so close to the stop line that you cannot stop without crossing it, in which case you should proceed across the level crossing until you are clear of it. <p><i>This wording is more accurate than the original and follows the instruction in TSRGD - guidance should follow the law.</i></p> <ul style="list-style-type: none">• Do not reverse onto or over the crossing• If the red lights continue to flash after the train has passed, wait – another train is approaching

	<ul style="list-style-type: none"> • Only cross when the lights go off and the barriers open
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Automatic half barrier crossings (AHB)

Appearance	<p>This type of crossing is protected by road traffic light signals and a lifting barrier on both sides of the railway. Lifting barriers are pivoted on the left-hand side of the road and, when lowered, only extend across the entrances to the crossing leaving the exits clear. Audible warning to pedestrians is also provided.</p> 
Method of operation	<p>The operation of the crossing equipment is initiated automatically by a train as it approaches the crossing.</p>
How to use the crossing safely	<ul style="list-style-type: none"> • Obey the flashing red stop lights • Stop behind the white line across the road <p><i>See previous comment</i></p> <ul style="list-style-type: none"> • Keep going if the amber light comes on after you have crossed the white line <p><i>See previous comment</i></p> <ul style="list-style-type: none"> • Do not reverse onto or over the crossing • If the red lights continue to flash after the train has passed, wait – another train is approaching • Never zigzag <p><i>"Zigzag" is a colloquial term which may seem obvious but might not be clear to some road users without some explanation. We suggest rewording to something like: "Never drive around the ends of the barriers ("zigzag") when they are closed."</i></p> <ul style="list-style-type: none"> • Only cross when the lights go off and the barriers open

Gated crossings operated by railway staff

Appearance	<p>This type of crossing is protected by gates, on both sides of the railway, which complete the fencing of the railway when closed across the road or the railway.</p> <p><i>"Complete the fencing" is an odd turn of phrase which sounds like the railway point of view rather than that of the road user.. Why not "close off the road completely"?</i></p> <p>Insert photo</p>
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Method of operation	<p>The crossing is manually operated by railway staff (either stationed at the crossing or a member of the crew of the approaching train) who close the gates alternately across the road and the railway. The gates are normally kept closed across the road. Alternatively, where rail traffic is much less frequent than road traffic, the gates may ?normally? be kept closed across the railway.</p> <p><i>This paragraph seems confused. It doesn't seem likely that a crossing would normally be closed across the road and opened by train crew. Suggest rewording.</i></p>
How to use the crossing safely	<p>A railway employee will close the gates across the road to allow the train to pass and you must wait until he/she reopens them to cross safely.</p> <p>If the crossing is one where the gates are closed across the railway then you may cross without stopping.</p> <p><i>The road user does not need to know what sort of crossing it is, only what to do when the gates are open/closed. Maybe "open to road traffic" would be a better way of putting it.</i></p>

Automatic open crossing with lights/locally monitored automatic open crossings (AOCL)

Appearance	<p>This type of crossing has no barriers but is protected by road traffic light signals and an audible warning is provided for pedestrians.</p> <p>Insert photo</p>
Method of operation	<p>The crossing equipment is normally initiated automatically by an approaching train. The operation of the crossing equipment and the absence of obstruction on the crossing is monitored by the driver of an approaching train. Train drivers are required to stop their trains short of the crossing unless they have received an indication that the crossing equipment is functioning correctly and have observed that the crossing is clear.</p>
How to use the crossing safely	<ul style="list-style-type: none"> • Obey the flashing red stop lights • Stop behind (see previous comment) the white line across the road • Keep going if the amber light comes on after you have crossed the white line WRONG (see previous comment) • Do not reverse onto or over the crossing • If the red lights continue to flash after the train has passed, wait – another train is approaching • Only cross when the lights go off

Open crossings

Appearance	<p>This type of crossing does not have barriers or road traffic light signals. Only road traffic signs are provided, requiring road users to give way to trains at the crossing.</p>
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	<p><i>Insert "This type of crossing is only used on low-speed lines" (if that is true).</i></p> <p>Insert photo</p>
Method of operation	Road users can see approaching trains in sufficient time for them to be able to cross the railway or stop safely while they wait for the train to pass.
How to use the crossing safely	Stop at the give way sign and look and listen to ensure there is no train approaching before crossing taking due care. Do not stop until you are clear of the crossing.

User worked crossings (UWC)

Appearance	<p>This type of crossing is only used where the railway crosses a private road. It is normally closed across the road by gates or lifting barriers on both sides of the railway. In some circumstances, miniature stop lights are provided.</p> <p><i>We suggest replacing the word "protected" as it is a railway technical term which might be confusing for the road user.</i></p> <p>Insert photos – more than one (motor, pedestrian)</p>
Method of operation	<p>The gates or barriers are operated by the road users.</p> <p>Road users should have sufficient time from first seeing an approaching train, or otherwise being made aware of the approach of a train with the aid of additional protective equipment, to cross safely.</p>
How to use the crossing safely	<ul style="list-style-type: none"> • If crossing with a vehicle, you should <ul style="list-style-type: none"> ◦ open the gates or barriers on both sides of the crossing ◦ check that the green light is still on and cross quickly ◦ close the gates or barriers when you are clear of the crossing • If there are no lights, stop, look both ways and listen before you cross. • If there is a railway telephone, always use it to contact the signal operator to make sure it is safe to cross. • Inform the signal operator again when you are clear of the crossing. • Always close the gates after use, even when you are busy or are planning a return crossing shortly afterward. Open gates increase the risk of misuse as users will not have to stop before crossing. • Never park a vehicle between the gate and the track. The vehicle may protrude onto the track or the train path. Even if not, its presence may distract an approaching train driver or cause him to brake. • Some crossings have 'Stop' signs and small red and green lights. You must not cross when the red light is showing, only cross if the green light is on. Do not be

	<p>tempted to cross after a train has passed by if the light stays on red – another train is likely to be approaching</p> <ul style="list-style-type: none"> • At busy times, consider asking a second person to help you to reduce the number of traverses that need to be made at each crossing. (Following the correct procedure in a vehicle requires you to cross the railway four times on foot, plus once in the vehicle.) • If the crossing requires use of a telephone, never use the crossing unless cleared to do so by the signaller you have spoken to the signaller and been told it is safe to proceed. If the signaller asks you to wait for confirmation that it is safe to proceed, then you must do so. <p><i>The word “clear” is another railway technical term.</i></p>
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Footpath crossings (including at stations) and bridleway crossings

At a user-worked crossing which is subject to additional footpath or bridleway crossing rights, stiles for pedestrians or separate gates for use by the pedestrians or riders **should be provided**.

See earlier comments on the use of the word “should.” This sentence is guidance for designers, not users. What do users do if stiles or gates are not provided, or does that not happen?

Appearance	<p>This type of crossing is used where the railway crosses a footpath or bridleway, and is protected by stiles or self-closing wicket gates on both sides of the railway.</p> <p><i>Once again, “protected” is a railway technical term which is not appropriate here (the gates do not provide protection to people on the crossing from approaching trains). Consider replacing it with “closed off” or use something like “and users must access the crossing via stiles...”</i></p> <p>Insert photo</p>
Method of operation	<p>Users should have sufficient time from first seeing or being warned of an approaching train to cross safely and are expected to use reasonable vigilance to satisfy themselves that no trains are approaching the crossing before they start to cross the line, and to cross as quickly as possible.</p>
How to use the crossing safely	<ul style="list-style-type: none"> • Some crossings have ‘Stop’ signs and small red and green lights. You must not cross when the red light is showing, only cross if the green light is on. Do not be tempted to cross after a train has passed by if the light stays on red – another train is likely to be approaching • If there are no lights, stop, look both ways and listen before you cross. • If there is a railway telephone, always use it to contact the signal operator to make sure it is safe to cross. • Inform the signal operator again when you are clear of the crossing. • Always obey alarm warning signals and lights, • Keep children with you • Keep dogs on a lead • If there are no warnings or lights, stop, look and listen, then look again before you cross, remembering that trains travel faster than you think and that curving lines and overgrown vegetation can sometimes obscure the view. • If it is safe, cross quickly, taking care not to trip on the rails – <i>see earlier comment</i>. • Do not stop on the crossing. • On user controlled crossings, make sure you shut both sets of gates behind you. • When in a group, don't just follow the person in front. Everyone should take responsibility for their own safety and stop, look and listen before crossing – <i>see earlier comment</i>. • If in a large group, cross in smaller groups to avoid having to wait or queue on the crossing while those in front pass through the gate or stile on the far side. • Cyclists should slow down and stop on the approach to a crossing and obey any signs instructing them to dismount – crossing surfaces can be uneven and slippery.

Manually operated gated pedestrian crossings

Appearance	These crossings are pedestrian crossings provided with lockable wicket gates, which when shut completely close off the pedestrian right of way from the railway. Insert photo
Method of operation	The crossing is operated by assigned railway staff who are permanently stationed at a control point adjacent to the level crossing when the line is open to rail traffic.
How to use the crossing safely	A member of railway staff will open the gates when it is safe to cross. If the gates are open to pedestrian traffic, you should cross taking due care.

The full text of the Highway Code in relation to level crossings is at
www.direct.gov.uk/en/TravelAndTransport/Highwaycode/DG_069864