

MANAGING LEVEL CROSSINGS: GUIDE FOR MANAGERS, DESIGNERS AND OPERATORS

RSSB'S RESPONSE TO ORR'S CONSULTATION: JULY 2010

GENERAL

Note

In reviewing the new draft against the existing guidance the opportunity has been taken to comment on issues in the original document which have been transferred unchanged to the new version but which do not seem to be appropriate either because they may have been wrong or arguable in the first place, or because of new information or research.

There are many cross-references to paragraph or section numbers which appear to be taken from the old guidance but which have not been updated. In general this response has not listed all these discrepancies.

In general the requirements of DDA legislation do not seem to have been taken fully into account and it should be noted that research project T650 'Improving safety and accessibility at level crossings for disabled pedestrians' is expected to provide evidence based guidance in this area later in 2010.

WHISTLE BOARDS and TRAIN HORNS

We suggest that some words are inserted into the text to explain whistle boards – which have been installed at locations where there is limited sighting. The generic Rule Book requirement relating to Whistle Boards is to sound the train horn routinely when passing all WBs between the hours of 23.00 and 07.00, and where the technology in the train permits, to sound the low tone only. However, the Rule Book also states that where the driver of a train sees people on or about the track at any time, then a full application of the train horn should be made.

Where horns are routinely used at WBs, there is a possibility that the harm that will be caused to neighbours from the regular sounding of horns will be greater than the potential safety benefit of sounding the horns every time a train passes. Therefore, the decision to install a Whistle Board should not be taken lightly. Although WBs should always be present where there is limited sighting time, the previous RSPG requirement to have WBs in both directions at footpath crossings should be modified to take account of the research and subsequent revised policy adopted by the industry. That is to say that where there is sufficient sighting time, it should not generally be the case that WBs are provided. In light of the research, (results published by RSSB under Research brief T668) Network Rail has adopted the following approach:

- when undertaking level crossing risk assessments, consider the possibility/value of:

- removing the WBs
- removing one WB where there are two WBs but good visibility in one direction: ONLY WHERE PEOPLE LIVING WITHIN EARSHOT
- re-instating/installing a new WB in the single direction where there is good visibility and where there is a WB for the other direction: ONLY WHERE NO PEOPLE LIVING WITHIN EARSHOT
- repositioning WBs in situ that are ineffective in their current location
- removing WBs that cannot be made effective by repositioning

- removing other redundant WBs
- installing a new WB: as an absolute last resort, where no practicable alternatives exist AND where a site-specific risk assessment identifies the need - requires HQ approval (based on review of the risk assessment)
- NB: For each possibility above, and aside from rail safety aspects, detailed consideration is required of the costs and practicability of any alternatives, and principally, the impact upon lineside neighbours.

[Source – Steve Constantine, Network Rail, 23 June 2009]

In paragraph 132 the reference to drivers sounding their horns is so general as to be unhelpful. We would suggest that it is deleted.

Paragraph 161 is helpful but we feel should be aligned to the NR approach outlined above. In paragraph 162 we would suggest that the first and second lines be reworded to:

Where WB's are provided on more than one railway approach, the difference in warning times should be 3 seconds or less.

If the NR approach is identified in 161 then the final sentence of 162 is not necessary.

EMERGENCY TELEPHONES

Section 17: Telephones and telephone signs

Paragraphs 248 – 261

This section does not appear to have taken cognisance of the findings of research project T818 'Optimising public communication with signallers in emergencies at level crossings' which did originally include representatives from ORR but who were not replaced when they retired. The research was commissioned as a direct result of recommendations following the accidents at Ufton Nervet (2004) and Marston-on-Dove (2008). Rather than spell out the details, it is suggested that the report be read and then discussed further with RSSB and Network Rail. It can be found on the RSSB website at <http://www.rssb.co.uk/Search/Results.aspx?k=T818>.

INCONSISTENCIES

Page 3 indicates that the guide is intended for authorised operators of user-operated crossings but does not highlight their duties under the Health and Safety at Work Act on page 7. See later note on specific points – page 3.

The term '**authorised operators of user-worked crossings**' is an unusual term, 'authorised user' being more usual, and could cause confusion since it tends to imply in paragraph 8 that 'such operators' would have responsibility to ensure that crossing orders for private roads are complied with. Is this the intention?

Pages 18 and 19

Red/green light crossings are mentioned in section 11 (footpath and bridleway) of table 1 but not in section 10 (User-worked). In the current guidance (page 8) the equivalent table has a paragraph which appears to have been omitted from the new table.

Pages 18 and 36 etc

Table 1 indicates that AOCLs should normally be restricted to single lines (a new requirement) but a number of the specific requirements in section 8 (AOCLs) continue to mention more than one line.

Page 20

Paragraph 26 requires a standby power supply to be provided at MSL crossings but paragraph 273 says this is not necessary.

Page 23

Paragraph 44 allows the use of the auto lower process but paragraph 46 requires the closure sequence to be monitored which prevents this.

Page 43 paragraph 73, Page 32 paragraph 90 and page 36 paragraph 114

Means of the signaller communicating with the drivers of trains approaching ABCLs and AOCLs is required but not at AHBCs. This is essentially mandating GSM-R, CSR or RETB radio. At present few lines with locally monitored crossings have such facilities and the cost of provision on rural branch lines (except at the time when resignalling is due) could be prohibitive. Heritage railways are unlikely to have a suitable radio infrastructure.

Page 36

Paragraph 104 limits the number of differential speed restrictions approaching an ABCL to two. There is no corresponding limitation approaching AOCLs.

Page 55

Paragraph 219 indicates that the minimum road width at an automatic crossing is 5m, but several later paragraphs (eg 221 and 246) include requirements for crossings where the road width is less than 5m.

SPECIFIC POINTS

Page 3 Who is this guide for?

It is not clear why this guide is intended for authorised operators of user-operated crossings. Indeed, of the seven categories listed on this page, the first four or possibly five are types of managers and the last two are users, whose responsibilities are already outlined in ORR's publication *Using level crossings safely*. This is potentially confusing.

Page 5 Introduction

Why is managing level crossing important?

Who is the 'We' in the second line? It would be better to delete 'We believe that' or replace by 'ORR believes that'

What is ORR's policy on level crossings?

Reference to the 'Agency agreement' seems unnecessary and is of no real relevance to the guidance on the design of level crossings.

In the second paragraph, the comments on wider benefits and cost sharing are welcome but no advice is given on how differences on how costs should be shared are to be resolved. This has been a significant stumbling block to significant improvements in the past and can be expected to frustrate future improvements.

Pages 7 and 8

CHAPTER 1: The legal framework

Overview

Mention is made that the Health and Safety at Work Act requires infrastructure managers, as employers, to manage and control risks arising from their operations. It does not mention this same duty which applies to *authorised operators of user-operated crossings* towards their employees, especially as page three indicates that this guide is intended for them.

Mention of is made that the Transport and Works Act 1992, enables the Secretary of State for Transport to make Orders that authorise the construction of railways and to cross highways by means of level crossings. There is no comment that most railway level crossings were already in place prior to 1962 and therefore not authorised by such Orders and that in most cases it may be necessary to refer to the original authorising act for each specific railway.

Page 8

Industry standards

Mention is made that standards are managed by RSSB but that this will pass to Network Rail and that the current standard is GI/RT7012. Both statements are incorrect. GI/RT7012 is now withdrawn (and was before this document was circulated) but has been replaced by GK/RT0192 'Level Crossing Interface Requirements', this includes the requirements for those items which are considered necessary for safe inter working between the infrastructure manager and railway under takings. It does not seem sensible to reference the actual Group Standard because of the possibility (as demonstrated here) of this information not being current.

In the second paragraph of this section reference is made to the **principle** duty holder which should read **principal**.

Page 9

The reference to the Law Commission and the Scottish Law Commission should be replaced by the *Law Commission for England and Wales, and the Law Commission for Scotland*.

Page 11

CHAPTER 2: Managing the risks at level crossings – Guide for managers, designers and operators

Paragraph 3

This mentions the need for uniformity as described in paragraph 7, but paragraph 7 does not mention this need. The paragraph referred to should be '6'

Pages 12 and 13

Paragraph 10

This does not mention the responsibility on authorised operators of user-worked crossings not to exceed the contractual limitations imposed on the use of such crossings. This is a serious omission as this document is apparently intended for such persons.

Paragraphs 13 and 14

Other regulations and standards

Consideration should be given to removing these paragraphs as the information should be obvious. By highlighting certain regulations such as those covering Electricity at Work, many other possibly relevant regulations have been ignored.

Paragraph 19

The need for plain English is noted and respected, but some old and possibly arcane descriptions in the current guidance have not been consistently replaced in the draft. Attention will be drawn to the most significant of these below.

Page 16 Figure 1

The definition of a crossing with MSLs as being a protected crossing, contained in the footnote to Figure 1 in the current document on page 5 has not been transferred. This omission is important.

Paragraph 20

Assessment of suitability

Whilst a risk assessment is necessary this tends to place undue importance on the output of such an assessment without any guidance on what are acceptable or tolerable risks. See comment on page 5 above.

Reliance on a risk assessment alone may result in a level crossing that causes more road traffic delay than is really necessary and a safety level considerably more than most users would accept as tolerable given the step change in delays that result from the uplift in type of crossing protection. Similarly a risk assessment may require a level of protection which makes improvement unjustifiable on costs grounds and thus inhibits the performance and safety improvements that users seek.

Table 1

Section 5A includes the statement that it should not be possible to open the crossing to road traffic unless the signals are at danger and free of approach locking, or the train has passed the signal and traversed the crossing. This requirement should be added to sections 4 and 5.

Sections 8, 10 and 11 all include the terms 'normally' or 'not normally' in relation to the number of lines: this is a confusing term. Are they meant to be absolute limits or not? In the case of AOCLs it should perhaps be an absolute limit because of the poor safety performance of this type of crossing and the poor visibility and lack of understanding of the diagram 776 sign. (If this was to be accepted, substantial redrafting of section 8 will be needed). Some existing two line AOCLs have special arrangements to prevent the approach of a second train and thus the need for the diagram 776 sign.

Red/green light crossings should have their own section in the table. They are mentioned in section 11 but not section 10 which is not logical.

CHAPTER 3: General guidance

Paragraph 23

This does not give any practical guidance on where signals should be positioned in relation to crossings. There is also potential for conflict between positioning a signal sufficiently far from the crossing and positioning of the signal in relation to visibility and gradients. Advice on what should have primacy in such an event would be helpful.

Paragraph 24

There seems little point in mentioning that measures relating to electrified lines can be found elsewhere in the document but the cross reference to section 18 is not correct.

Paragraph 25

The first part does not convey any meaningful information and omits the previous reference to a clearance of 450mm. Is it really necessary to indicate that equipment should be clear of the structure gauge and the carriageway?

Paragraph 26

Why is it necessary to add a new specific mention of MSL crossings here as the requirements are no different from other automatic crossings? Why does the requirement not apply to all crossings with warning lights and/or power operated barriers? It is not possible to comply with the requirement if the main power failure lasts for several days, so it would be helpful to indicate a minimum time period or minimum number of cycles of operation.

Paragraph 27

This should be split into two. One paragraph - for lighting levels to be satisfactory for safe operation of the crossing. Another paragraph - for it to be lit to at least the same level as the highway irrespective of the railway operational requirements. Paragraph 28 would not then be required.

Paragraph 29

'A reasonable time' could be more specific possibly for each type of crossing. A seasonally used user worked crossing may not be used for six months.

Section 4: Gated crossings operated by railway staff

Paragraph 30

It is not clear if it is permissible for the gates to be power worked which is common practice.

Paragraph 31

Since any new crossings of this type are likely to be authorised by Transport and Works Order rather than an authorising Act can the Transport and Works Order specify the normal position of the gates?

Paragraph 33

This paragraph is not really necessary as the important provision about a view of the crossing is contained in paragraph 34. As written this would prevent the crossing being operated by a person who arrives by road to deal with a train and departs by road soon after the movement over the crossing has taken place.

The previous guidance reference to **assigned railway staff** has been replaced by **competent railway staff**. In other paragraphs (eg 42, 44, 114) the word 'assigned' has been retained yet in other places the document just refers to 'railway staff'. Given that it is a duty of infrastructure managers (and others) to provide staff who are competent it is suggested that a consistent reference to **railway staff** would be a good solution.

Paragraph 36

All such crossings are worked by railway staff so the first clause is unnecessary. As written this would prevent the crossing being operated by any person who travels on the train (as permitted by paragraph 33) because they would not have an indication of the approach of trains because he/she would be travelling on it

Paragraph 37

As written this would appear to preclude the indication that it is in order for the train to pass over the crossing being given by a fixed white light which is surely not the intention of the clause. To be fair, this text is as was written in the current edition in para 39.

Paragraph 40

Placing the stop board at least 50 m on the approach to the crossing appears to be unduly restrictive if there is a station platform immediately before the crossing.

Section 5: Barrier crossings operated by railway staff

Paragraph 42

This appears to be unnecessary as the requirements are also shown in paragraph 44. As written it appears to prohibit operation by traincrew which is allowed by paragraph 44. The note would also be suitable below paragraph 41. With further reference to the note it is not clear how the visibility requirement would be met during darkness or poor visibility.

Paragraph 43

The requirement for telephones at crossings with auto lower facilities (however worked) is new. Telephones in this situation might be necessary if there are known to be regular movements of animals on the hoof or abnormal loads. It would be helpful to understand the justification for this change?

In line 2 there is a superfluous 'at'.

Paragraph 44

Clause (d) as written would prevent the crossing being operated by a person who arrives by road to deal with a train and departs by road soon after the movement over the crossing has taken place.

Paragraph 46

There reference to a 5 second amber phase in clause (a) is clearly in response to various suggestions received over recent years that at 60mph, some road vehicle drivers find it difficult to stop in time before the red lights start to flash. But what is the definition of a higher speed road?

In clause (c) the requirement to monitor the closing sequence is new and prevents the use of auto lower which is permitted by paragraph 44. The reference to skew crossings and the need for a longer time allowance is on the face of it sensible, but there is no definition – what is the minimum angle expected here?

Paragraph 49

The statement that 'Barriers should rise as soon as practicable' suggests a measure of cost/benefit analysis. 'Practical' would be better (and the words 'lower sequence' on the next line would be better if replaced by 'lowering sequence').

Paragraph 53

There are many references from this point onwards to 'intermittent' red lights, which is the term used in the current guidance. Is the word 'intermittent' likely to be understood as well as the word 'flashing'?

Paragraph 54

Placing the stop board at least 50 m on the approach to the crossing appears to be unduly restrictive if there is a station platform immediately before the crossing. Some crossings at stations on rural lines have been made trainman operated full barriers rather than locally monitored automatic crossings partly because of the variable dwell times.

Paragraph 55

This cannot apply at trainman operated crossings because normally there is no one present to view the indications.

**Section 5A: Barrier crossings operated by obstacle detector
NEW SECTION**

It should be possible – and preferable - to include these crossings in section 5 with a small number of additions to the draft text.

Paragraph 58

Generally, it is not considered that telephones would be necessary at all of these types of crossings but might be necessary if there are known to be regular movements of animals on the hoof or abnormal loads.

Paragraph 59

If the requirement to provide CCTV is an absolute requirement then there is no point in providing the obstacle detection equipment and this section should be deleted.

Paragraph 60

Why is it necessary to mention again here that the suitability of the location for this type of crossing should be regularly reviewed? The requirements of the rest of the paragraph should be adequate.

Paragraph 64

The meaning of the first sentence is not clear. Is it in effect asking for bi-directional controls? If so this could present a problem if the lines are not otherwise bi-directional because the 'wrong direction' signal will not be able to indicate a route to another signal. (This is not a problem with bi-directional controls at automatic crossings because signals are not normally involved.)

Section 6: Automatic half barrier crossings (AHBC)**Paragraph 69**

The second sentence (beginning Audible warning) should either be rephrased to read 'An audible warning ... etc' or 'Audible warnings ...are'.

Paragraph 73

Why is there not a requirement for the signaller to be able to contact the driver of an approaching train by radio as for ABCL and AOCL crossings?

Paragraph 75

The word 'be' has been omitted on line 3 between 'should' and 'at'.

Paragraph 75 Note

Why are these conditions not also applied at ABCL and AOCL crossings?

A known problem with predictors is that if there is a station within the area 'visible' to the predictor, is that when the train is first detected the closure sequence is initiated. When the predictor determines that the train is no longer approaching because it has stopped in the station the crossing then reopens. Repeated operation in this way may result in discipline problems with regular road users. Consideration should be given to a requirement that crossings operated by predictors do not reopen until the train has passed over the crossing even if the speed of the approaching train has fallen to zero.

Paragraph 76

Clause (a) what is the definition of a higher speed road? See comment on para 46 above.

Paragraph 80

The requirement as stated here is not logical. What is important is that the stop signal has a distant signal located not less than the service braking distance on the approach to the stop signal and that appropriate interlocking is provided. The stop signal should not be an excessive distance from the crossing: at present up to ten minutes running time for the fastest train is permitted.

Paragraph 81

To the uninitiated this requirement may not be understood. Is it explained in *Using level crossings safely*? It is probably necessary to indicate that if the signal, located between the normal strike-in point and the crossing, is at danger, 'strike-in' is inhibited and consequently it is necessary to provide a means of activating the crossing if the signal is passed at danger.

Paragraph 82

Cross references to para 64 are wrong. Should be 75.

Section 7: Automatic barrier crossings locally monitored (ABCL)

Paragraph 85

Reference to Audible warning – see comments on para 69 above.

Paragraph 93

Reference to higher speed roads as above.

Paragraph 104

As more than two differential speeds are now generally permitted what is the justification for the restriction on the approach to these types of crossing?

It is appreciated that if more than two speeds were permitted the use of predictors may be necessary in order to comply with the requirements of paragraph 92.

Paragraph 106

The cross references to paragraph 81 would seem to be incorrect, should they be to 92?

Section 8: Automatic open crossings locally monitored (AOCL)

Paragraphs 112 and 124

Table 1 seems to limit this type of crossing to single lines but here there are requirements for when there is more than one line.

Paragraph 112

The option of specifying 'another train coming' flashing signs is now added as something which can be included in a LC Order.

Paragraph 117a

A further reference to higher speed roads.

Paragraph 119

Incorrect reference to section 18.

Section 9: Open crossings

Paragraph 132

The previous paragraph 121 referred to the need for train drivers to sound the train horn between 0700 and 2330. The new reference states 'as appropriate'. This is inconsistent with the changes to the Rule Book published in April 2007.

Paragraph 137

On most lines it is normal practice to display speed information to drivers in miles per hour. Displaying a figure for Km/h could cause confusion and result in too high a speed being observed. (This discrepancy has been carried over from the current guidance para 126).

Section 10: User-worked crossings (UWCs) with gates or lifting barriers on private roads

Paragraph 140

It is suggested that the text in brackets be removed, as this is required by legislation which railway infrastructure managers should be aware of but may not be required under future legislation changes.

Paragraph 144

It is suggested that an additional item be added to clause (c):

'(iii) use of the telephone would cause excessive workload for the crossing operator'.

Section 11: Footpath and bridleway crossings

Paragraph 148

Clauses (a) and (b) should be deleted as they are covered by (c) which should be reworded. Leaving them in suggests that more of these crossings can be created which is most undesirable.

Paragraph 149

Suggest that 'satisfy themselves' is replaced by 'ensure'.

Paragraph 150

How are stiles compatible with DDA legislation?

Paragraph 151

The main clause is badly drafted – the old version was more comprehensible. In the note, what is the justification for expecting cyclists to dismount?

Paragraph 154

The references to 'intervals' in this clause (carried over from the current clause 143) are confusing. A better expression needs to be identified.

Paragraph 155

In the second line the word 'and' between crossings ... 3m would read better if replaced by 'or'. How can an infrastructure manager assume that there will or will not be use by those with prams or wheelchairs? Clear guidance to what is required is needed. To assume that there will not be use by those in wheelchairs could be discriminatory under DDA legislation.

Paragraph 157

How are stiles compatible with DDA legislation?

Paragraph 159

How can be a surface below rail level be compatible with DDA legislation?

Paragraph 162

The requirement for whistle boards, when provided, to be *normally* required on all railway approaches is inconsistent with the agreed changes referred to in paragraph 132 above.

Paragraph 165

How is not providing an audible warning at a public crossing with MSL compatible with DDA legislation?

Section 12: Provisions for pedestrians at public vehicular crossings**Paragraph 173**

If AOCLs are only permitted on single lines, then this paragraph can only apply to automatic crossings with half barriers.

Paragraph 175

The requirements of this paragraph need to be reconsidered due to the difficulty that partially sighted people apparently often experience in viewing the primary and duplicate lights, including at full barrier crossings.

Paragraph 177

More guidance on what is appropriate is necessary as there are a variety of arrangements at present with no clear indication of which is the most appropriate. Disabled users are seeking consistency. Research project T650 'Improving safety and accessibility at level crossings for disabled pedestrians' in progress (see above) will hopefully provide some clarity.

In line three the word road should be roads.

Section 13: A station barrow crossings

The title of this section seems strange. Should perhaps read 'Station and Barrow Crossings'. The distinction should be explained – station and barrow crossings have different functions and methods of working. See research project T332 'Understanding the risk at station and barrow crossings'.

Paragraph 187

These requirements should also apply to public foot and bridleway crossings.

Paragraph 194

If this document is just for infrastructure managers the detail is sufficient. But given the wide variety of audiences referred to on page 3, a definition of 'arris' and perhaps a drawing or photograph would be helpful.

Section 15: The crossing

Paragraph 199 Note

This suggests that it is likely still to be permissible to convert MCGs to OC and even AOCL crossings. Does ORR actually mean this?

Paragraph 205 – NEW

The need for this new clause is supported. Has ORR had discussions with infrastructure managers to see what frequencies would be appropriate, which could then be put into this guidance document?

Paragraph 210

At a public crossing the surface should be level with the rails given that this guidance is not supposed to be retrospective (ie that it would normally be implemented when the crossing is repaired or upgraded).

Paragraph 212

At public crossings steps should not be permitted given that this guidance is not supposed to be retrospective (ie that it would normally be implemented when the crossing is repaired or upgraded).

Paragraphs 214 and 215

214 should require public and private bridleway crossings (there are a few) to have a surface level with the rails given that this guidance is not supposed to be retrospective (ie that it would normally be implemented when the crossing is repaired or upgraded). 215 would then not be necessary.

Paragraph 217

This should apply to all vehicular crossings given that this guidance is not supposed to be retrospective (ie that it would normally be implemented when the crossing is repaired or upgraded).

Paragraph 219

The second and third sentences can be combined as 'A narrower carriageway, to a minimum of 5m, may be acceptable on roads with a daily road vehicle use of less than 400.' without any loss of meaning.

Paragraphs 220 and 221

These paragraphs should be deleted because the situations described are covered or prevented by the requirements of paragraph 219.

Section 16: Gates, wicket gates and barrier equipment

Old paragraph 222 – Omitted

Is there any particular reason for this omission?

Paragraph 230 NEW

The addition of power operated gates is noted but the wording 'to avoid the need for multiple crossings' is confusing – 'traverses' would be better.

Paragraph 239

It should be noted that blind users, consulted as part of project T650 'Improving safety and accessibility at level crossings for disabled pedestrians' have commented that they like to be able to feel their way along the top of barriers to orient themselves and determine whether they are in a position of safety. Apparently they find the lights (unless recessed in the barrier) to be an obstruction and potentially dangerous. They have also suggested that skirts **should** be provided under AHBLC barriers. RSSB is not recommending changes here but suggests that the issues require some thought.

Paragraph 243 NEW

Research project T334 'Reducing the risk to motorists traversing user worked crossings on foot' did not favour the provision of co-acting barriers at user worked crossings because of a view, expressed by the railway inspectorate, that users would associate them with the barriers directly operated by railway staff or by the passage of trains. If they encountered them left in the raised position, they could assume that it was safe to cross. Has ORR changed its view in this regard?

Paragraph 246

The situation described in the final sentence should not arise because it would not comply with the requirements of paragraph 219 which states that the minimum permissible width of an AHB crossing roadway is 5m

Section 17: Telephones and telephone signs

Paragraphs 248 – 261

This section does not appear to have taken cognisance of the findings of research project T818 'Optimising public communication with signallers in emergencies at level crossings' which did originally include representatives from ORR but who were not replaced when they retired. Rather than spell out the details, it is suggested that the report be read and then discussed further with RSSB and Network Rail. It can be found on the RSSB website at <http://www.rssb.co.uk/Search/Results.aspx?k=T818>

Section 18: Miniature stop lights (MSL)

Paragraph 273 note

Not to provide a standby power supply does not seem appropriate and conflicts with the requirement to provide one in paragraph 26.

Section 19: Traffic signals, traffic signs and road markings

Paragraph 280

Is the reference to section 12 correct?

Paragraph 282

In para 247 the old expression (capsized) has been replaced by 'knocked over' which seems clearer and more comprehensible to a non-nautical audience. Here capsized is retained – need for consistency.

Paragraph 283

The reference to Department *of* Transport should be to Department *for* Transport.

Paragraph 297

Table 1 indicates that AOCLs are only allowed on single lines. If that is correct, this paragraph is not necessary.

Paragraph 302

To ensure that there is no confusion between the public and railway staff it is considered that this should apply to all level crossings given that this guidance is not supposed to be retrospective (ie that it would normally be implemented when the crossing is repaired or upgraded).

Paragraph 303

What is the justification for requiring cyclists to dismount?

Paragraph 314

Who is responsible for providing road markings on private property? What markings are envisaged?

Figure 6 (page 77)

As well as road traffic signs generally, the 'puffer train' sign at Open Crossings is being studied in project T756 'Research into traffic signs and signals at level crossings'. It has been suggested that there is limited understanding of this sign by members of the public.

Appendix D – Common terms – page 87 onwards

P87 para 1 penult. line. Is disparate the right plain English word? Different would do just as well.

Tramway section – is any of this necessary given that tramways are specifically excluded on page 3?

P88 – same applies to Other guided transport systems and the Note about trolleybuses.

People – the preamble includes trespassers but they are not included in any of the four subdivisions.

P90 first para – another reference to tramways.

P91 Crossing speed – refers to 15km. See note on para 137 above.

Chapter 3 – A guide to the level crossing order submissions

Not studied in any detail.