



House of Commons
Transport Committee

Safety at level crossings

Eleventh Report of Session 2013–14

Report, together with formal minutes relating to the report

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The Transport Committee

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Summary

Level crossings are a significant source of risk on the UK's transport networks. Although the number of accidental deaths at level crossings has decreased in recent years, nine people died in 2012-13. Every one of those deaths was a personal tragedy which could have been averted. We recommend that the Office of Rail Regulation (ORR), which is responsible for rail safety, adopt an explicit target of zero fatalities at level crossings from 2020.

Calculating which level crossings are the most risky is complex but we estimate that there may be many hundreds of crossings which exceed Health and Safety Executive guidance on the acceptable level of fatality risk to the public. Network Rail should be more transparent about its assessment of risk at level crossings and its plans for closures and improvements. We also recommend that Network Rail continue to employ level crossing managers to focus on improving safety.

We are concerned that the ORR may not have enough appropriately qualified and experienced staff to provide adequate inspection of the rail network or to adequately challenge Network Rail's signalling work plans. The ORR board should consider whether just seven professionally-qualified signalling engineers is an adequate number of staff to provide inspections nationally, both of existing installations and proposed works. The ORR must improve its grip on overseeing how Network Rail identifies and deals with the riskiest level crossings.

We heard harrowing evidence from the families of people killed and severely injured at level crossings, particularly about how the deaths could have been avoided and how relatives were subsequently treated by Network Rail. Issues raised with us included how Network Rail withheld key documents from court; untrue accusations that people accidentally killed had "misused" the level crossing or trespassed on railway land; and Network Rail's disproportionate level of legal representation at inquests. Network Rail admitted to us that its management of level crossings has previously been negligent and that its behaviour towards bereaved families has been appalling. Its chief executive owes each of the families it has let down a full, public apology. Given that Network Rail has recently been held responsible for the serious accident at Beccles in July 2010 we would be very concerned if its Remuneration Committee awarded bonuses to executive directors this year. Network Rail must now demonstrate that it has transformed the way in which it deals with people whose lives have been changed by accidents at level crossings.

We also make recommendations about a number of detailed matters including driver training, teaching schoolchildren about rail safety, the legal framework for level crossings, road signage and whistleblowing in the rail industry.

1 Introduction

1. Nine people died in accidents at level crossings in Great Britain in 2012-13: four pedestrians or cyclists and five occupants of road vehicles. In addition, there were seven major injuries, 53 reported minor injuries and 17 cases of shock or trauma.¹ There were more fatalities in 2012-13 than in the previous year but the long-term trend shows an overall decrease, from 11.9 fatalities per year in 2000–2009 down to 7.0 fatalities per year in 2010-13.² Excluding suicides and trespass, level crossings accounted for one half of the fatalities on the railway in the period from 2008-09 to 2012-13.

2. Although the safety record of Great Britain's level crossings has improved in recent times, concerns have been expressed about whether Network Rail is sufficiently focused on protecting the safety of road users and pedestrians who traverse them. There have been a number of high profile accidents for which Network Rail has been criticised for ignoring prior warnings that level crossings were unsafe and for shabby treatment of the relatives of those killed.

3. In 2010 Network Rail committed itself to reducing risk at level crossings by 25% over the course of Control Period 4 (April 2009 to March 2014), as measured by its own model.³ We decided to examine how Network Rail was implementing this pledge, in view of the criticisms of its stance towards safety at level crossings in recent years. In July 2013 we asked for views on the following questions:

- Are current safety measures at level crossings adequate? How should they be improved?
- In addition to bridges and underpasses what other cost-effective measures can be introduced to replace or improve safety at level crossings?
- How should expenditure on improving safety at level crossings be prioritised in relation to other demands on the rail budget?
- Is Network Rail giving sufficient priority to improving safety at level crossings?
- Is Government policy and regulatory action by the Office of Rail Regulation (ORR) in relation to safety at level crossings adequate? What more should the Government and ORR do?

1 [Annual Safety Performance Report 2012-13](#), RSSB (p179). The RSSB notes that "Level crossing harm tends to be dominated by a relatively small number of fatalities, so figures from a single year should be interpreted with caution."

2 The mean fatal accident rate fell from 10.60 fatalities per year in Q2 2000-2009 down to 6.75 fatal accidents per year in 2010-2013. This fall is statistically significant.

3 [Network Rail \(SLC 007\)](#) para 18 and subsequent discussions with Network Rail. The risk reduction is modelled using Network Rail's Level Crossing Indicator Model, which uses ALCRM risk scores and is periodically recalibrated against RSSB's Safety Risk Model. ALCRM is described in [para 17](#) of this report.

- How should the legislation governing level crossings be updated?
- How should public awareness of safety at level crossings be improved?

4. We have published over 50 pieces of written evidence and heard oral evidence from a wide range of interested parties on 21 October and 4 November 2013.⁴ We are grateful to all of our witnesses but we particularly pay tribute to Chris Bazlinton, Laurence Hoggart, Tina Hughes, and Richard Wright, who spoke to us about the accidents in which their relatives had been killed or seriously injured, and their subsequent treatment by Network Rail and other bodies. Their powerful and heartfelt evidence was crucial in helping us understand why accidents happen at level crossings and the impact of those life-changing events on the lives of their loved ones. We pay tribute to their courage in speaking out. We also thank those relatives who contacted us privately. We understand how difficult this will have been: the information that was provided was crucial to our thinking during this inquiry.

5. We also thank our specialist advisers for this inquiry, Professor Andrew Evans and John Tilly, for their assistance.

6. In this report we begin by setting out in more detail key facts and figures about level crossings and explain who is responsible for them and for dealing with accidents. Our third chapter examines the measures Network Rail and others could take to make level crossings safer. Subsequent chapters cover helping pedestrians and motorists to use level crossings more safely and helping people whose relatives have been killed and injured at level crossings deal with the aftermath of the accidents. We offer some concluding thoughts in our sixth and final chapter.

Box 1: Elsenham, 2005

On 3 December 2005, Olivia Bazlinton (aged 14) and her friend Charlie Thompson (aged 13) were on their way from Elsenham, Essex, to Cambridge. There was no ticket machine on their platform and they had to cross the railway to the other platform to purchase their tickets. After purchasing their tickets, the miniature warning lights and yodel alarm indicated that there was a train approaching. After a train had stopped in the station they opened the unlocked wicket gate and proceeded back across the line. They were hit by a Stansted train. In February 2007 an inquest jury concluded that the deaths were accidental. After risk assessments not disclosed during the inquest later came to light, Network Rail was successfully prosecuted for breaches of health and safety law and in March 2012 was fined £1 million. The station now has a footbridge and the gates have a locking system.

4 Oral evidence taken before the Transport Committee on [21 October 2013](#) and [4 November 2013](#)

2 Level crossings: an overview

Types of level crossings

7. Level crossings are places where footpaths, bridleways or roads cross railway lines at the same level. Network Rail manages approximately 6,500 level crossings on the commercial rail network, and there are a further 1,500 crossings on heritage, industrial and metro railways.⁵ There are two general types of crossing: active crossings, which provide warnings or protection when a train is approaching, and passive crossings, which do not. Active protection may be automatic, or may require a signaller, driver or crossing keeper to perform certain actions. Passive crossings rely entirely on the user for their safe operation.⁶ The table below shows how many of the different types of level crossing are managed by Network Rail.

Table 1: Network Rail's level crossings by type, as at 28 May 2013

Crossing type		Number
Passive	User-worked crossing with telephone	1,648
	User-worked crossing	679
	Open crossing	50
	Footpath crossing	2,547
Active, manual	Manually controlled gate	181
	Manually controlled barrier	211
	Manually controlled barrier with obstacle detection	7
	Manually controlled barrier monitored by closed-circuit TV	410
Active, automatic	Automatic half-barrier	450
	Automatic barrier locally monitored	53
	Automatic open crossing locally monitored with barrier	5
	Automatic open crossing locally or remotely monitored	105
	User-worked crossing with miniature warning lights	101
Total		6,447

Source: Annual Safety Performance Report 2012-13, RSSB, Table 24.

Who is in charge of level crossings?

8. Railway lines were initially authorised in the 19th century by many private acts of Parliament. Individual acts specified how the railway was to cross other ways and, where the crossing was on the level, how railway, highway and footway users would be protected. New level crossings are generally avoided but can still be authorised under the *Transport and Works Act 1992*. The Secretary of State has powers under the *Level Crossings Act 1983* to make orders specifying new or updated arrangements at individual level crossings that

⁵ [Annual Safety Performance Report 2012-13](#), RSSB (page 181) Table 24 – Level crossing categories by class and type, as at 28 May 2013. Figures are for Network Rail's infrastructure, which is wholly within Great Britain.

⁶ [Types of level crossing](#), Network Rail

can be accessed by the public. The order-making process is managed by the Office of Rail Regulation (ORR).⁷

9. The *Health and Safety at Work etc Act 1974* gives ORR inspectors the powers to inspect and enforce safety at level crossings. Other regulations specify requirements for safety management systems.⁸ The *Equality Act 2010* places duties on designers and managers to ensure that facilities at crossings do not cause an unnecessary barrier to access across the railway for those with disabilities.

10. The Rail Accident Investigation Branch (RAIB) was set up in 2005 to implement a recommendation of the Cullen Report into the Ladbroke Grove rail crash in 1999.⁹ It investigates accidents in order to make recommendations about safety to the Secretary of State. It is not a prosecuting body and it does not apportion blame or liability. RAIB's reports may be used by a coroner to establish cause of death and to make "Prevention of future death" reports.

7 Level Crossings: A guide for managers, designers and operators, Railway Safety Publication 7, Office of Rail Regulation, December 2011 (chapter 3) and Agency agreement between the Secretary of State for Transport and the Office of Rail Regulation, October 2008

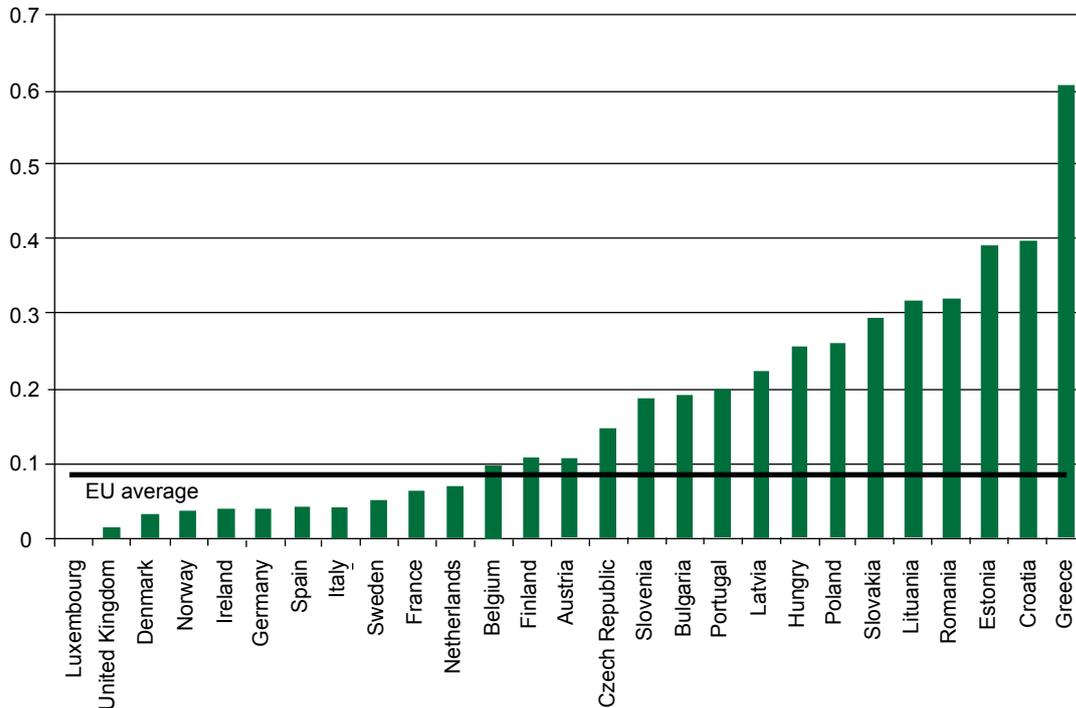
8 For example, the Railways and Other Guided Transport Systems (Safety) Regulations 2006 (ROGS)

9 RAIB's role is set out in the Railway and Transport Safety Act 2003

How safe are level crossings?

11. Level crossings in the UK are generally safe. The UK has one of the best safety records among EU Member States, as figure 1 shows.¹⁰

Figure 1: Level crossing fatalities per million train-kilometres (2010–2012) for EU member states



The EU-wide average is shown by the solid line. EU Member States without railways are not shown. The Channel Tunnel has no level crossings and is also excluded. Source: European Rail Agency Common Safety Indicators (ERAIL database)

However, there is no room for complacency and the aim should be to aim to eliminate accidental deaths at level crossings.

12. There are significant safety risks associated with the different forms of level crossing. Of Network Rail's 6,500 crossings, 76% are passive crossings, which do not offer any warning of an approaching train (see Table 1). The decision on whether it is safe to cross is left to the user.¹¹ Motorists using passive crossings have to cross the railway five times, if they must manually open and close gates on either side to get their vehicle across. Some 14% of all pedestrian traverses, but just 0.5% of vehicle traverses, are at passive crossings.¹²

13. Most vehicle traverses (69.4%) occur at railway-controlled crossings, where a signaller or crossing keeper must manually operate barriers. These crossings have a good safety record. However, there have been instances where mistakes or problems have led to

¹⁰ [Intermediate report on the development of railway safety in the European Union](#), European Rail Agency, May 2013 (page 17)

¹¹ [User-worked crossings](#), Network Rail

¹² [Annex: Level crossing and road risk compared](#)

hazardous situations, near misses or fatal accidents.¹³ Workforce error contributes around 7% of the risk of a collision between a train and road vehicle at level crossings. Of the 89 workforce errors reported in 2012-13 in relation to level crossings, almost half involved the trapping of pedestrians or road vehicles between barriers at CCTV-monitored crossings, or the signalling of trains over crossings when the barriers were raised.¹⁴

14. Just over 100 level crossings provide miniature warning lights for pedestrians. Unlike on a road crossing, where a “red man” sign at a pedestrian crossing can be disregarded, it is a legal requirement for pedestrians to stop when level crossing miniature warning lights show red.¹⁵ This is not widely understood and other level crossing offences are also little known.¹⁶ Long delays between a warning light changing to red and a train passing can also lead to increased risk-taking, as identified by a recent RAIB report and changes that Network Rail has made to signalling sequences.¹⁷

15. Unlike crossing a road, where motorists can swerve and brake and vehicles are lighter than trains, the consequences of being struck by a train are almost always very serious, if not fatal. **Analysis of Network Rail and Department for Transport data (see Annex) shows that if an average walking trip includes a level crossing, the fatality risk to a pedestrian is about double the risk of an average walking trip without a level crossing. Overall, there is an increase of around 8% in the risk of a fatality during an average car journey that includes a level crossing, compared with one that does not. We recommend that the Office of Rail Regulation adopt an explicit target of zero fatalities at level crossings from 2020.**

13 Crofton Old Station (two incidents in 2006), Poplar Farm (2008), Foxton (2010) and 12 others over a 10-year period to July 2011. See para 156 in a report on a fatal accident due to railway error combined with lack of interlocking: [Fatal accident at Moreton-on-Lugg, near Hereford 16 January 2010](#), Rail Accident Investigation Branch, Report 04/2011, v2 July 2011

14 [Annual Safety Performance Report 2012-13](#), RSSB. See page 177 – irregular working affecting level crossings and page 195 - irregular working at level crossings.

15 Under section 55 of the Transport and Works Act 1992.

16 Q22 [Claire Turner]. Other offences include failure to shut a gate at a level crossing, under section 75 of the Railways Clauses Consolidation Act 1845.

17 [Fatal accident at Motts Lane level crossing, Witham, Essex 24 January 2013](#), Rail Accident Investigation Branch, Report 01/2014, January 2014 (para 116); [Changes to Stroud level crossings to deter misuse](#), Network Rail, 23 February 2009

3 Making level crossings safer

Risk assessment

16. The risk of accidents at level crossings depends on their configuration, the volume of pedestrian and vehicle traffic traversing the crossing, and rail traffic. The only way to eliminate risk at a level crossing is to close it. However, closure is not always practicable, given the impact on local road and path networks. It can also be difficult to effect closures, given the practicalities of particular locations, the complex legislation governing level crossings, and the cost of putting in place alternative crossings.

17. At the heart of decision-making about making level crossings safer is the assessment of risk undertaken by Network Rail. The All Level Crossing Risk Model (ALCRM) is used with the intention of providing a consistent basis for assessing risk at each level crossing, so that Network Rail can allocate resources to the highest risk crossings. Models are only as good as their underlying data and assumptions. Concerns have been expressed about both of these in relation to ALCRM. For example:¹⁸

- Crossing usage inputs are mostly based on a 30-minute census conducted during an off-peak period between 0930 and 1630 on weekdays. This approach does not take account of crossings with high within-day variations (e.g. near workplaces or schools), high weekend use compared with weekdays (e.g. on country walking and cycling routes) or where there is seasonal variation (e.g. near beaches).
- In ALCRM, line speed is assumed to have an impact on the *consequences* of accidents rather than their *likelihood*. This is a debatable point because slower-moving trains can be stopped more quickly and have more opportunity to be seen than fast-moving trains.
- There is also evidence that the number of trains travelling across a level crossing is not entered accurately into ALCRM, even though this information is known to Network Rail. For example, the RAIB recently found that Network Rail's risk assessor had entered 54 trains per day into ALCRM in relation to a level crossing in Essex, rather than the actual weekday value of 260. This was not reviewed for three years.¹⁹

18. Although the importance of local factors was emphasised to us,²⁰ these are not incorporated into the scores produced by ALCRM. The RAIB has previously identified this as a weakness in the risk assessment process.²¹

18 T737: Documenting the All Level Crossing Risk Model, RSSB, October 2010

19 Fatal accident at Motts Lane level crossing, Witham, Essex 24 January 2013, Rail Accident Investigation Branch, Report 01/2014, January 2014 (para 45)

20 Q138 [Anson Jack], Q166 and Q174 [Robin Gisby] and Q208 [Robin Groth]

21 Qq118-119 [Carolyn Griffiths]

19. The quality of Network Rail’s risk assessments, including ALCRM, was recently the subject of judicial criticism. In January 2014, reviewing the decision of the Crown Court relating to Network Rail’s appeal against a fine, the Lord Chief Justice said:

The judge found that there was obvious risk and it was readily reducible. He also found that the risk assessments were poorly done; there were repeated failures to follow the correct guidance. In 2007, Network Rail had installed a computer system; the risk assessments in 2007 and 2009 were inputted into it, but the programme used did not spot the inconsistencies. Network Rail were unable to explain this failure. We consider that these findings were amply justified on the evidence.²²

Network Rail and ORR are working on a project to incorporate “narrative assessments” into risk assessments.²³ The more recent introduction of level crossing managers is designed to improve application of local knowledge to risk assessments.²⁴ The Rail Safety and Standards Board (RSSB) is undertaking further development of ALCRM on Network Rail’s behalf.²⁵

20. The meaning of the risk scores is not readily understandable and accompanying guidance is of limited use. It is difficult to discern which level crossings present a high fatality risk to individual, frequent level crossing users, who are assumed to make 500 traverses each year. Health and Safety Executive guidance states that the fatality risk to a member of the public should not exceed 1 in 10,000 per year.²⁶ **We estimate that there may be many hundreds of crossings which exceed this limit. *These should be prioritised for improvement or closure.***

Transparency

21. Network Rail has voluntarily published a list of level crossing locations and their ALCRM risk scores.²⁷ Some external organisations have been able to make use of the data, including for the production of maps of level crossing locations.²⁸ However, the data is not refreshed frequently and is not complete because full risk assessments are not published. Also, some of the locations are not sufficiently accurate to enable emergency services to provide a speedy response if required.²⁹ ***We recommend that Network Rail work with the Information Commissioner’s Office and the Open Data Institute to develop protocols on publishing a fuller range of risk assessment material for each level crossing. Protocols***

22 [R and Sellafield Ltd & R and Network Rail Infrastructure Ltd](#), [2014] EWCA Crim 49 (para 42)

23 Office of Rail Regulation ([SLC 049](#)) section 4

24 Q114 [Ian Prosser], Qq118-119 [Carolyn Griffiths], Q166 and Q174 [Robin Gisby]

25 [T936: Enhancing the accuracy and functionality of the All Level Crossing Risk Model \(ALCRM\)](#), RSSB, in progress

26 [Reducing risks, protecting people](#), Health and Safety Executive, 2001 (para 128) and Office of Rail Regulation ([SLC 049](#)) section 4

27 [Transparency - Level crossings](#), Network Rail for individual crossings and bulk data

28 [Railway level crossings map](#), ITO World

29 British Transport Police ([SLC 029](#)) and Qq47-48 [Paul Crowther]

should include data formats, publication frequencies and guidance material to aid usability, so that transparency is improved.

Network Rail's plans to improve safety

22. In 2010 Network Rail set itself a target of reducing modelled level crossing risk by 25% over Control Period 4 (2009–2014). Relative to 2009 risk levels, a 26% reduction was achieved by the end of 2013.³⁰ This claim is supported by the fall in fatal accidents and fatalities over that period.³¹ This significant improvement in safety has been achieved by a £130 million programme of over 750 level crossing closures and more effective management of level crossings, particularly with the appointment of 100 specialist level crossing managers.³² Tina Hughes, whose daughter Olivia was killed in an accident at Elsenham,³³ and who is now Network Rail's Level Crossing User Champion, praised the work of level crossing managers:³⁴

They have always been very good at reacting when there is a catastrophic failure, but I now see that they are beginning to be proactive and look at where the next accident might happen and start to make some changes to that.

The appointment of level crossing managers has made a significant contribution to the recent improvement in safety at level crossings: we recommend that Network Rail continue to use these posts to drive continuing improvements in safety.

23. ORR has set Network Rail a target to reduce level crossing risk by a further 25% over Control Period 5 (2014-19).³⁵ Network Rail's funding settlement for Control Period 5 includes dedicated funding of £109 million to close a further 500 level crossings and improve safety at hundreds more of the highest risk crossings.³⁶ The level of funding in the final determination is a significant increase from the £67 million originally proposed.³⁷ *Network Rail should publish the names and locations of the level crossings that it intends*

30 Network Rail ([SLC 007](#)) para 18 and subsequent discussions with Network Rail. The risk reduction is modelled using Network Rail's Level Crossing Indicator Model, which uses ALCRM risk scores and is periodically recalibrated against RSSB's Safety Risk Model. ALCRM is described in [para 17](#) of this report.

31 There were more fatalities in 2012-13 than in the previous year but the long-term trend shows an overall decrease, from 11.9 fatalities per year in 2000-2009 down to 7.0 in 2010-2013. The mean fatal accident rate fell from 10.6 fatal accidents per year in Q2 2000-2009 down to 6.75 fatal accidents per year in 2010-2013. This fall is statistically significant.

32 Q166 [Robin Gisby] and [Safety boost as Network Rail reaches target of closing 750 level crossings](#), Network Rail, 21 January 2014

33 [Box 1: Elsenham, 2005](#)

34 Qq3, 13 [Tina Hughes]

35 [Final determination of Network Rail's outputs and funding for 2014-19](#), Office of Rail Regulation, (para 3.109) £99 million is for England & Wales, with an additional £10 million for Scotland.

36 [Britain's railways between 2014 and 2019 - ORR's final determination](#), Office of Rail Regulation, 31 October 2013

37 [Periodic Review 2013: Draft determination of Network Rail's outputs and funding for 2014-19](#), Office of Rail Regulation, June 2013 (table 3.1, page 66) Note that safety is not a devolved matter.

to target during Control Period 5, together with an indication of the work to be carried out and planned timescales.

24. In relation to how level crossings can be improved, the ORR provides the following guidance:

The primary objective should be to close level crossings permanently, following the closure or diversion of a highway, road or by the provision of a bridge or under-pass. As a secondary objective, it may be practicable to reduce the status of the crossing, for example from vehicular to footpath or bridleway only. Simple renewal and retention of existing crossings should be seen as a last resort. Crossing renewals should not introduce new risks to the railway or users. In determining whether reasonably practicable solutions exist, other than renewing an existing crossing, the operator should take into account the whole-life costs of installing and maintaining level crossings.³⁸

A decision to close a crossing depends principally on cost, both of materials and installation, and estimated economic costs arising from delays to journeys if a crossing is closed.

25. The cost-benefit appraisal methodology currently places equal value on a prevented fatality as it does on small travel time savings accruing to many people. For example, 11,600 commuters saving five minutes a day for a year has the same economic value as a prevented fatality.³⁹ This approach means that there may be economic reasons for replacing heavily used crossings with alternatives, even when there is no safety case for doing so. The Department for Transport recently commissioned a review of its approach and there has been some discussion in academic literature about the costing of safety benefits.⁴⁰ Where closure or replacement are not feasible on cost or practicability grounds, improvements are considered instead.

26. Network Rail states that there are 680 level crossings within 200 metres of an alternative crossing. These are therefore prime candidates for closure. Since 2010, Network Rail has installed 38 footbridges to replace level crossings.⁴¹ Network Rail told us that footbridges are becoming cheaper to install,⁴² and its Draft Delivery Plan for Control Period 5 proposes the installation of a further 70 footbridges between 2014 and 2019.⁴³ However, some

38 [Level Crossings: A guide for managers, designers and operators](#), Railway Safety Publication 7, Office of Rail Regulation, December 2011 (para 3.8)

39 [Values of Time and Vehicle Operating Costs TAG Unit 3.5.6 \(in draft\)](#): Commuting market price of £7.28 per hour (Table 2); [The Accidents Sub-Objective TAG Unit 3.4.1 \(in draft\)](#): £1.759 million for a prevented fatality (Table 1). Both values were published by the Department for Transport in 2010 and are inflated to 2012-13 prices using the [HM Treasury deflator series](#). We have assumed that commuters make 250 return trips per year.

40 Peter Mackie, Tom Worsley et al., "[International comparisons of transport appraisal practice: overview report](#)", Institute for Transport Studies, University of Leeds, for the Department for Transport, April 2013; Professor Philip Thomas (SLC 009)

41 [Target reached for closing 750 level crossings](#), Network Rail, 21 January 2014

42 Network Rail (SLC 007) para 20

43 [CP5 Enhancements delivery plan \(draft\)](#), Network Rail (page 11)

witnesses expressed concerns about the accessibility of footbridges to disabled people, as well as the inconvenience to other users, and argued that underpasses may be preferable.⁴⁴

We recommend that Network Rail address criticism of its apparent preference for footbridges as replacements for level crossings and explain what assessment it makes of the impact on disabled people of replacing level crossings with footbridges rather than underpasses.

Box 2: Ufton level crossing, 2004

In Ufton, Berkshire, in November 2004 a motorist killed himself by deliberately parking his vehicle on the automatic half-barrier crossing before the closure sequence had commenced.⁴⁵ After striking his car, the train derailed, killing six people on the train, including the train driver. A further 71 passengers required hospital treatment. The line was closed for over a week. The train driver's widow submitted powerful written evidence on the consequences to her family of this incident. There has since been a near miss in 2011 and another fatality in 2012.⁴⁶ Network Rail told us that a road bridge will be built over Ufton level crossing by the end of 2015.⁴⁷

Legislation: Law Commission's review

27. In September 2013 the Law Commission published a report and a draft bill which aim to improve the regulation of level crossings and thereby help improve safety.⁴⁸ Key features of the Law Commission's proposals include:

- Bringing safety regulation under the umbrella of the Health and Safety at Work etc Act 1974, whilst maintaining the ORR's enforcement role.
- Disapplying statutory provisions which have been superseded by more recent law or are otherwise obsolete.
- Imposing new statutory duties upon railway and highway operators to consider the convenience of all users when carrying out their obligations in respect of level crossings, and to work together.
- Providing tools to support health and safety regulation, including level crossing plans, enforceable agreements between railway operators and other duty holders, and a power for the Secretary of State to issue directions if necessary.

44 Mr D Holladay (SLC 034), Living Streets (SLC 032), and Sustrans (SLC 014).

45 Formal inquiry final report – Ufton level crossing: passenger train collision with a road vehicle and subsequent derailment, 6 November 2004, RSSB, 21 June 2005

46 Near miss incident at Ufton automatic half barrier crossing, Berkshire, 4 September 2011, Rail Accident Investigation Branch, Report 28/2012, December 2012

47 Network Rail (SLC 045)

48 Level Crossings, Law Commission

- Creating a new, more streamlined procedure to close individual level crossings where it is in the public interest to do so.
- Providing clarity in certain areas of land law about the position of statutory level crossings and rights of way.

We focus in this section on three aspects of the Law Commission’s work: the new approach to the closure of level crossings, co-operation between railway operators and local authorities, and the impact of the proposals on heritage railways.

Closure of level crossings

28. The Law Commission recognised that decisions about level crossings involve striking a balance between the convenience to communities in being able to cross a railway and public safety. The Commission has recommended that consideration of the closure of level crossings should be based on a public interest test which would consider a new, “non-hierarchical” and “non-exhaustive” list of the following factors:

- i) the safety of the public;
- ii) the convenience of the public;
- iii) the efficiency of the transport network (including the network of public paths);
- iv) the cost of maintaining the crossing;
- v) the need for the crossing and its significance for the local community (including the protection of heritage); and
- vi) the costs and environmental impact of any works needed to replace the crossing or upgrade other crossings.⁴⁹

29. The extra distance to travel that diversions might cause could be considered under points (ii and iii) above but no maximum diversion distance has been suggested or envisaged.⁵⁰ Network Rail has expressed a concern that the tests could be seen as establishing a trade-off between safety and convenience.⁵¹ The Ramblers broadly supported the publication of the tests and called for the addition of a public safety test with respect to any diversionary route.⁵² ***We welcome the public interest tests for closure procedures. We see merit in applying a public safety test to any diversionary routes that may result from a level crossing closure and we recommend that the DfT consider this option as part of its consideration of the Law Commission’s proposals.***

49 [Level Crossings report](#), Law Commission No 339, Cm 8711, September 2013 (para 3.113)

50 Qq62-63 [Sarah Young]

51 Network Rail ([SLC 047](#))

52 The Ramblers ([SLC 039](#)) The submission from the Ramblers refers (at para 9) to the tests that the Law Commission consulted on (see Law Commission [report](#) para 3.106), rather than the ones recommended by the Law Commission, but the substance of their statement is that the existence of tests is welcome.

30. The Law Commission has proposed that a decision to make or refuse a closure order would be subject to challenge in the High Court, by way of a statutory judicial review with no permission stage.⁵³ This option is discussed in detail in the Law Commission's report but no consideration is given to alternative means of resolving disputes. **We are concerned that the proposed appeal mechanism for closure orders, using judicial review, will be out of reach for ordinary people and, increasingly, local authorities. We recommend that the DfT consider using alternative dispute resolution, such as mediation by the Office of Rail Regulation, to supplement judicial review.**

Co-operation between railway operators, highway authorities and planning authorities

31. Local authorities must work with Network Rail and other railway operators to help keep level crossings safe. For example, local authorities' plans for promoting walking and cycling routes that traverse level crossings can have a direct effect on safety at those crossings. However, the Association of Directors of Environment, Economy, Planning and Transport told us that liaison between Network Rail and local authorities is variable.⁵⁴ Network Rail has highlighted a number of examples where local authorities have imposed planning obligations on developers, to help fund Network Rail's construction of footbridges.⁵⁵ However, in some cases planning authorities have consented to large developments and changes in road layout without due attention to the increased risk at nearby level crossings.⁵⁶ In its report into a fatal accident at the Kings Mill No. 1 crossing near Mansfield, the RAIB criticised the local authority for establishing a walking and cycling trail without discussing the likely impact on the usage of a level crossing with Network Rail.⁵⁷

32. Railway operators are already statutory consultees where proposed development is likely to result in a material increase in the volume or character of traffic using a level crossing.⁵⁸ The Law Commission's proposal for broader statutory duty of co-operation on railway operators, traffic authorities and highway authorities in respect of level crossings is a sensible suggestion.⁵⁹ However, in the case of footpaths, private crossings or unadopted roads (which are not maintained by the highway authority), there is a case for adding

53 [Level Crossings report](#), Law Commission No 339, Cm 8711, September 2013 (para 3.302)

54 Association of Directors of Environment, Economy, Planning and Transport (ADEPT) ([SLC 061](#))

55 Network Rail ([SLC 045](#))

56 [Level Crossings report](#), Law Commission No 339, Cm 8711, September 2013 (para 6.50) and [Level crossings – analysis of consultation responses](#), Law Commission (para 9.1 to 9.10)

57 [Fatal accident at Kings Mill No.1 level crossing, Mansfield, 2 May 2012](#), Rail Accident Investigation Branch, Report 01/2013, January 2013 (Para 94-100) and Mrs Tracy Hart ([SLC 040](#))

58 [The Town and Country Planning \(Development Management Procedure\) \(England\) Order 2010](#) (SI 2010/2184), (Schedule 5)

59 [Level Crossings report](#), Law Commission No 339, Cm 8711, September 2013 (B.12, page 255). Highway authorities are responsible for highway maintenance, transport strategy and policy, including road safety, accident investigation and prevention, public transport and sustainable transport for their areas. Traffic authorities are responsible for managing their road network to maximise its efficiency (and usually focus on strategic routes).

planning authorities to that list.⁶⁰ *We welcome the duty of co-operation on railway operators, traffic authorities and highways authorities in respect of level crossings but recommend that it should also encompass planning authorities so that the impact of additional numbers of people using level crossings can be considered.*

Impact on heritage railways

33. Although the majority of level crossings are on Network Rail infrastructure, 1,500 are on heritage, industrial and metro railways. Accidents on these level crossings are rare but may still have serious consequences. In August 2003 there was an accident on the Romney, Hythe and Dymchurch Railway, a heritage line in Kent, at an ungated crossing which was solely protected by flashing warning lights. The motorist and her baby sustained minor injuries but the train driver was killed.⁶¹ In July 2005 there was a collision on the same line in similar circumstances in which the train driver was killed.⁶²

34. The ORR has recently concluded that safety standards on heritage railways have improved but there is more work to be done on board governance, safety management systems, and staff competence.⁶³ Heritage railways generally depend on volunteers.⁶⁴ The Law Commission has proposed that heritage railways without employees should be subject to regulation under the Health and Safety at Work etc Act 1974.⁶⁵ The HRA is concerned that volunteers, especially those acting as directors, could be dissuaded from getting involved with heritage railways because of the risk of prosecution in the event of something going wrong. They told us that these changes could threaten the viability of the sector.⁶⁶

35. We are concerned that the extension of the Health and Safety at Work etc Act 1974 to volunteer-run railways, could threaten the viability of the heritage sector. We recommend that any changes to the regulation of level crossings should include transitional arrangements aimed at protecting the viability of heritage railways.

ORR oversight of level crossing safety

36. The ORR is both the economic and safety regulator for Great Britain's railways.⁶⁷ In terms of level crossing safety, the ORR exercises powers delegated by the Secretary of State to make level crossing orders. Reasons for orders being in place include a need to clarify the specific safety requirements at a crossing, to clearly define what the respective duties of

60 [Roads: unadopted, Standard Note SN/BT/402](#), House of Commons Library, October 2010 and [Unadopted \(private\) roads](#), Department for Transport

61 [Man killed in miniature train crash](#), BBC News, 3 August 2003

62 [Train crash killed manager's wife](#), BBC News, 11 July 2005

63 Health and Safety Report 2013, Office of Rail Regulation ([Railway operators – Heritage railways](#))

64 Heritage Railway Association ([SLC 010](#))

65 Qq64-55 [Richard Percival]

66 Qq146-152 [Bill Hillier]

67 Railways are a devolved matter in Northern Ireland, with the NI Department for Regional Development carrying out the regulatory functions.

the crossing operator and highway authority are, or, in some cases, to modify prescriptive provisions for a crossing set in legislation.⁶⁸ Fewer than one third of all level crossings on Network Rail infrastructure have orders in force.⁶⁹ Draft orders are produced by the railway operator and are scrutinised by ORR inspectors before being approved.⁷⁰

37. As economic regulator, ORR approves applications for access to track, stations and depots; licences operators of railway assets; and seeks to ensure that Network Rail delivers value for money. In oral evidence, we asked whether these two roles were sometimes in conflict.⁷¹

38. Critics of the ORR's role as safety regulator have drawn attention to the fatal accident at the Moreton-on-Lugg level crossing in Herefordshire in January 2010.⁷² The accident, in which a car passenger was killed, occurred when the signaller mistakenly raised the barriers before it was safe to do so. The crossing had previously been the subject of Network Rail renewal works. The RAIB said that Network Rail proposed a partial renewal of level crossing protection, on cost grounds. ORR did not object and, as a result, formal consideration was not given to more extensive works which would have prevented the accident.⁷³ The Transport Salaried Staffs Association said that "ORR green lighted a procedure which allowed Network Rail not to install automatic locking on financial grounds".⁷⁴ **In not pressing for a higher standard of safety at the Moreton-on-Lugg crossing the ORR appears to have contravened the spirit of its own objectives for level crossing safety improvements, which state that 'Simple renewal and retention of existing crossings should be seen as a last resort'.**

Box 3: Moreton-on-Lugg, 2010

Moreton-on-Lugg, Herefordshire, January 2010: The signaller had correctly lowered the barriers at the crossing. He was then distracted by a telephone call for a very unusual crossing request. This lapse in concentration resulted in him subsequently raising the barriers at the crossing. Two cars proceeded into the path of a train and one of the passengers was killed. The crossing had previously been the subject of Network Rail renewal works. The RAIB noted that Network Rail proposed a partial renewal of level crossing protection, on cost grounds. ORR's lack of objections to Network Rail's request meant that formal consideration was not given to "approach locking", which would have prevented the accident. After the renewal work in 2009 Network Rail prepared a new level

68 Office of Rail Regulation (SLC 025) paras 8

69 Office of Rail Regulation (SLC 025) para 9

70 Powers delegated under the Level Crossings Act 1983

71 Qq81-90 [Ian Prosser]

72 TSSA (SLC 048)

73 Fatal accident at Moreton-on-Lugg, near Hereford 16 January 2010, Rail Accident Investigation Branch, Report 04/2011, v2 July 2011 (paras 128-154, 28); Moreton-on-Lugg level crossing orders 1975, draft 2009 and extant 2013 provided by Office of Rail Regulation (SLC 050) See para 19, page 15 and para 18, page 35; Office of Rail Regulation (SLC 049) section 2

74 TSSA (SLC 048)

crossing order in order to update the highway requirements. The draft order would have replaced the extant order from 1975, but was still in draft at the time of the accident in January 2010. A revised order, which was agreed in June 2013, required a higher standard of engineered safeguards.

39. We are also concerned by evidence that ORR might lack sufficiently trained staff to monitor level crossing safety standards. ORR employs just 26 engineers, 22 of whom are inspectors. Of those, only seven have signalling engineering qualifications from at least one of the relevant professional bodies.⁷⁵ Although ORR said that the time spent by inspectors on proactive inspections has increased from 30% to 50% over the last five years, the Moreton-on-Lugg incident suggests that the regulator may not be resourced to provide sufficient challenge to Network Rail.⁷⁶ **We are concerned that the ORR may not have enough appropriately qualified and experienced staff to provide adequate inspection of the rail network and of level crossings or to adequately challenge Network Rail's signalling work plans. *The ORR board should consider whether just seven professionally-qualified signalling engineers is an adequate number of staff to provide inspections nationally, both of existing installations and proposed works.***

75 Qq95-99 [Ian Prosser] and Office of Rail Regulation ([SLC 049](#)) section 3. The professional bodies are the [Institution of Railway Signal Engineers](#) and [Institution of Engineering & Technology](#)

76 Qq107 [Ian Prosser] and Office of Rail Regulation ([SLC 049](#)) section 4

4 Helping people use level crossings safely

Introduction

40. Claims of deliberate misuse of level crossings often receive widespread media attention. These instances mask the near misses and fatalities that occur because of human factors, where the design, engineering and maintenance of the level crossing and its environment interact with the limitations of human cognition to such an extent that decision-making is impaired. Level crossing users may also impair their own hazard perception, for example by wearing headphones. The risk of harm in these scenarios can be reduced by enforcement, engineering and education.

Vulnerable users

41. Some users of level crossings are particularly vulnerable. For example, young people are vulnerable because they are unable to process correctly the speed of objects coming towards them. Research conducted by Royal Holloway, University of London, showed that children perceived cars moving towards them at more than 20 mph as stationary.⁷⁷ Older users may be vulnerable because their field of view can diminish over time; studies have suggested that this can be at a rate of between 1° and 3° per decade.⁷⁸ In a recent Belgian study, it was revealed that 10% of older motorists did not meet the European eyesight standards for driving.⁷⁹ As well as the obvious concern for motoring standards this is an issue for pedestrians. In particular, sighting distances—the distance at which a train can first be seen—may be optimistic if measured by a younger adult for risk assessment purposes.

42. Research by University College London showed that older pedestrians (aged 65 or over) cannot achieve the 1.2 metres per second (m/s) walking speeds assumed in the programming of pedestrian road crossings and therefore cannot use pedestrian crossings safely. The mean walking speed achieved was 0.9 m/s in men and 0.8 m/s in women.⁸⁰ This has implications for level crossing safety, where traverse speeds of 1.2 m/s are assumed for level surfaces close to rail level, and 1 m/s for other surfaces.⁸¹

77 Q23 [Claire Turner] referring to [John P. Wann, Damian R. Poulter and Catherine Purcell, "Reduced sensitivity to visual looming inflates the risk posed by speeding vehicles when children try to cross the road", *Psychological Science*, \(2011\) 22:429.](#) Research on [speed perception of trains](#) is being undertaken at the University of Waikato, New Zealand.

78 Q23 [Claire Turner] referring to [Johnson CA, Keltner JL, "Incidence of visual field loss in 20,000 eyes and its relationship to driving performance", *Arch Ophthalmol* \(1983\) Mar 101\(3\):371-5.](#)

79 [Levecq L, De Potter P, Jamart J, "Visual acuity and factors influencing automobile driving status in 1,000 patients age 60 and older", *Graefes Arch Clin Exp Ophthalmol* \(2013\) Mar 251\(3\):881-7](#)

80 [Laura Asher, Maria Aresu, Emanuela Falaschetti, Jennifer Mindell, "Most older pedestrians are unable to cross the road in time: a cross-sectional study", *Age and Ageing* \(2012\) 41: 690–694](#)

81 [Level Crossings: A guide for managers, designers and operators](#), Railway Safety Publication 7, Office of Rail Regulation, December 2011 (Para 2.161)

43. Research using eye-trackers showed that 5% of users did not look in either direction and 16% looked in only one direction when using a level crossing. Possible reasons for these behaviours included knowledge of the train timetable and reliance on listening for trains.⁸² Network Rail recently released a video that demonstrates the difficulty in perceiving train direction from hearing alone.⁸³

“Whistle boards” and “decision points”

44. Train horns sounded at “whistle boards” (signs which tell drivers to sound their horns) can be particularly unreliable as warnings. During the night-time quiet period (2300–0700), train drivers are instructed not to sound horns as they pass whistle boards so that lineside residents are not disturbed, except if the driver sees someone on the track.⁸⁴ Early morning and late night level crossing users may therefore become more vulnerable in the absence of an audible warning. Even during hours when a horn can be sounded, hearing impairments or local factors (such as wind direction) can reduce the audibility of the warning. Wind direction was found to be a possible contributing factor to a recent fatality at the Mexico footpath crossing in Cornwall.⁸⁵ Driver non-compliance with the requirement to sound a warning was observed by RAIB during a separate investigation at Tackley in Oxfordshire.⁸⁶ Robin Gisby, Network Rail’s Managing Director, Network Operations, told us that Network Rail would be introducing technology to sound the warning from equipment at the crossing itself, rather than from the train.⁸⁷

Box 4: Mexico crossing, 2011

Mexico footpath crossing, Long Rock, near Penzance, Cornwall, October 2011: The footpath crossing was used solely to access the beach. The RAIB found that Mrs Nicholls, who was fatally struck by a train, may not have heard the train horn because of the prevailing wind direction. There were no other warning systems. The RAIB recommended safety improvements for the crossing. There is also a protected crossing just 200m away. The coroner later made a ‘Rule 43’ report recommending closure. The crossing was closed in June 2013 and, in November 2013, Cornwall County Council extended the closure and applied to the Secretary of State to have the right of way extinguished.

45. Claire Turner, Principal Consultant, Human Factors, at Environmental Resources Management, noted that crossing users are generally unaware that they need to be at least

82 Q22 [Claire Turner]

83 [Track Tests – Wretch32 and George the Poet](#), Network Rail YouTube channel

84 [Train horns – rail industry implemented changes](#), RSSB

85 [Fatal accident at Mexico footpath crossing \(near Penzance\), 3 October 2011](#), Rail Accident Investigation Branch, Report 10/2012, June 2012 (para 77)

86 [Fatal accident at Tackley station level crossing, Oxfordshire, 31 March 2008](#), Rail Accident Investigation Branch, Report 09/2009, March 2009 (para 90)

87 Q173 [Robin Gisby]

two metres away from the tracks in order to remain safe.⁸⁸ Indeed at footpath crossings on mainlines and bridleway crossings this minimum distance is three metres.⁸⁹ This has a dual effect:

- public users may be unaware of the safe place to stand to allow a train to pass; and
- railway staff conducting risk assessments may make incorrect assumptions about where crossing users normally stop, look and listen (known as the “decision point”), and may therefore be measuring sighting distances inappropriately.⁹⁰

46. TRL noted that the absence of a clear point at public highway crossings at which people should safely decide whether or not to cross means that pedestrians are unclear where it is safe to stand and are therefore at risk of being struck by barrier equipment.⁹¹ Based on their own research, they made a number of recommendations on how to improve situational awareness at level crossings. *We recommend that the Office of Rail Regulation reviews level crossing guidance and standards in view of recent human factors research, including the impact of delays, visual perception of older people, different traverse speeds and ambiguity about where to stand safely before crossing.*

Highway Code and other road regulations

47. The Highway Code applies to both motorists and pedestrians. It covers the rules of conduct⁹² and signage to be expected at crossings.⁹³ Research commissioned by RSSB showed that signage relating to level crossings is poorly understood and can be cluttered and confusing.⁹⁴ This is a view shared by local authority senior managers, who suggested that the depiction of steam locomotives on two of the three traffic signs might not be readily understood by younger drivers.⁹⁵ RSSB is undertaking further research into traffic signs, with a view to making recommendations to the Department for Transport.⁹⁶ TRL has made numerous recommendations not just in relation to signs but also as regards other engineering improvements for each type of level crossing, such as warning systems, tactile surface markings, barriers and operation of the crossings.⁹⁷

88 Q22 [Claire Turner]

89 Level Crossings: A guide for managers, designers and operators, Railway Safety Publication 7, Office of Rail Regulation, December 2011 (Para 2.155)

90 Q22 [Claire Turner] The railway sets a decision point of between 2 and 3 metres, depending on the type of crossing and line speed. Decision points may not be marked at the crossing.

91 Transport Research Laboratory (SLC 023) para 15

92 Level crossings (291 to 299), Department for Transport and Rules for pedestrians – situations needing extra care (31 to 35), Department for Transport

93 Level crossing signs and signals, Department for Transport;

94 T756: Research into signs and signals at level crossings, RSSB, July 2011 (pages 37 and 43)

95 Association of Directors of Environment, Economy, Planning and Transport (ADEPT) (SLC 061)

96 Q132 [Michael Woods]

97 TRL (SLC 023)

48. On level crossings shared by motorists and pedestrians, if a warning system is provided it will include a pair of red lights, side by side, which flash alternately (known as wig-wag lights).⁹⁸ Studies have shown that these lights are generally well-understood, although there are potentially issues around the element of surprise associated with the signals, the absence of a green light to indicate that motorists may proceed with caution, and the visibility of the signals.⁹⁹

49. The RAIB identified the poor visibility of wig-wag signals and barriers against strong background sunlight and glare as causal factors in a fatal accident at Beech Hill, near Finningley, in December 2012. In April 2013, four months after the accident, the RAIB issued an Urgent Safety Notice advising that the lamps and lenses fitted to the signals needed to be upgraded.¹⁰⁰

50. The DfT's written submission did not address the road aspects of safety at the road-rail interface within its own remit, such as the Highway Code, signage, guidance on road layouts and standards.¹⁰¹ The Minister said that "part of what Network Rail has been spending its money on is indeed to do with the clarity of signage".¹⁰² ***The DfT has not been proactive in assessing how it could make level crossings safer, for example by improving road signage. We recommend that, as part of the forthcoming overhaul of the Traffic Signs and General Directions 2002,¹⁰³ DfT revise its guidance on signage and road layouts based on the latest research findings from TRL and RSSB.***

Motorists' education

51. The Driver and Vehicle Standards Agency (DVSA) administers approximately 1.6 million theory tests and 1.7 million practical tests each year, with the vast majority of these being for car drivers.¹⁰⁴ The driving practical test is designed to last for 40 minutes. It is unlikely that driving over a level crossing would be possible for most driving test candidates, either during lessons or as part of the practical test, due to the distance between crossings and the time taken to cross. Only 6% of test routes include a level crossing. The driving theory test is therefore the primary method of assessment concerning motoring standards at level crossings.¹⁰⁵

98 [Traffic Advisory Leaflet 1/08, Wig-wag signals](#), Department for Transport, December 2008

99 [T756: Research into signs and signals at level crossings](#), RSSB, July 2011 (pages 40, 41, and 44)

100 Q125 [Carolyn Griffiths] and [Collision between a train and a car at Beech Hill level crossing, near Finningley, 4 December 2012](#), Rail Accident Investigation Branch, Report 17/2013 v2, September 2013 (para 107 and Appendix C)

101 Department for Transport ([SLC 006](#)); [Local transport notes](#), Department for Transport; [Traffic signs manual](#), Department for Transport

102 Qq195, 198 [Stephen Hammond MP].

103 See HC Deb, 13 Oct 11, c46WS. [Traffic sign legislation set for 'radical' overhaul](#), Transport Network, 16 April 2013

104 Driving Standards Agency ([SLC 028](#)) and [Driver and Rider Test and Instructor Statistics, Great Britain: Quarter 4 2012/13](#), Department for Transport, 27 June 2013. Figures in the summarised number of tests stated above may not match the tables, due to rounding.

105 Q42 [Lesley Young], Driving Standards Agency ([SLC 028](#)) para 19

52. One of the topic areas on the driving theory test relates to “hazard awareness”, which includes railways and level crossings. Six questions are asked on this topic, with 75% of candidates being asked at least one question on railways and level crossings.¹⁰⁶ Around 80% of candidates answer level crossing questions correctly, with 94% answering correctly on what to do if their vehicle breaks down on a level crossing.¹⁰⁷

53. The driving theory test includes a hazard perception test, which is a series of 14 video clips that contain “developing hazards”. These are hazards that are not in a fixed location and would require some action to be taken, such as a change of speed or direction.¹⁰⁸ Hazard perception training is aimed at developing the cognitive skills to identify hazards, although the action to be taken in response to a hazard is not currently part of the test. Research on hazard perception training conducted by TRL showed a 17% decrease in some crash types for novice drivers who had undergone the training.¹⁰⁹ Level crossings are “static hazards” because their location does not change, so they are not currently included in the hazard perception test. However, they are likely to be incorporated into the next iteration of the test, which is planned for 2015.¹¹⁰

54. We note the strong evidence base for the hazard perception test and encourage its further development. The Driver and Vehicle Standards Agency (DVSA) should incorporate level crossings into the next version of the hazard perception test. As well as identification of the hazard, the DVSA should consider ways of ensuring that the test assesses actions to be taken in response to level crossings.

Pedestrian education

55. In the UK, rail safety education campaigns have largely been driven by the rail industry. The RSSB runs “Trackoff”, which is paid for by the rail industry.¹¹¹ Trackoff produces a number of educational resources, including posters and teaching resources. Network Rail has also pursued a number of initiatives.¹¹² The Royal Society for the Prevention of Accidents (RoSPA) told us about the LASER Alliance, which is a multi-agency scheme for educating people about risk.¹¹³

106 Driver and Vehicle Standards Agency (SLC 046)

107 Qq38-39 [Lesley Young]

108 [The driving theory test for cars and motorcycles](#), gov.uk

109 Statistical modelling produced a central estimate showing a 17.4% reduction in non-low-speed accident liability in the first year of driving for those who had taken the hazard perception test, compared with those who had not (3.0% reduction at the 95% confidence interval). [Road Safety Research Report No. 81, Cohort II: A Study of Learner and New Drivers, Volume 1 – Main Report](#), Wells et al, Department for Transport, May 2008 (Table 9.8, page 169) with a slide pack by Dr Neale Kinnear, TRL, on [Young and Novice Driver Research](#) summarising additional findings

110 Qq40-41 [Lesley Young], Driver and Vehicle Standards Agency (SLC 046)

111 [Trackoff](#)

112 Network Rail initiatives: the “[Don't Run The Risk](#)” advertising campaign, which ran from 2006; [See Track, Think Train](#) – a more recent advertising campaign specifically about level crossings; the [Rail Life](#) website, aimed at 12-17 year olds; and [Safety education](#), with lesson plans for primary and secondary schools, and factsheets for parents

113 RoSPA (SLC 013) para 31

56. Personal, social, health and economic education (PSHE), which is taught in schools as part of the National Curriculum, covers risk management and personal safety.¹¹⁴ However only road safety is explicitly mentioned, with no references to other modes of transport.¹¹⁵ **The Department for Education’s PSHE curriculum only includes road safety in its coverage of transport safety. DFE should explicitly include rail safety (*including level crossings*) in the PSHE curriculum.**

114 [Personal, social, health and economic \(PSHE\) education](#), Department for Education

115 [Programme of Study for PSHE education](#), PSHE Association, October 2013

5 The aftermath of accidents

Network Rail's treatment of families

Box 5: Bayles and Wylies crossing, 2008

Bayles and Wylies crossing near Hucknall, Nottinghamshire, November 2008: This crossing, which had no warning systems, was unusual because it was over three lines: a disused colliery line, the Robin Hood railway line and the Nottingham Express Transit tram line. Both a tram and a train were travelling towards the crossing in the same direction. The tram had much brighter lights and an illuminated saloon. However the train was travelling at a much higher speed and had caught up with the tram. Mrs Hoggart and her grandson were struck by the train. The RAIB investigation found that the difference in illumination may have contributed to the accident.¹¹⁶ They also found a number of failings attributable to Network Rail, including a lack of crossing illumination; signalling equipment that reduced visibility; and not appreciating that the crossing in darkness presents different risk to users, since all inspections had been in daytime. The investigation also found significant differences in sighting distances in Network Rail inspections, ranging from 350 to 600 metres, with no process for resolving these differences. The crossing had seen an increase in usage following the construction of an adjacent housing estate. There was another fatality at the crossing in November 2012.¹¹⁷ The crossing was closed in February 2013 and replaced with a footbridge in October 2013.

57. On 21 October 2013 we heard harrowing evidence from family members of those tragically killed or seriously injured on level crossings. After the meeting a number of other families contacted us to raise their concerns. Many relatives told us similar stories, of poor treatment by Network Rail and of discovering risk assessments showing that action was needed to improve crossing safety that had not been acted upon. For example, Laurence Hoggart, whose wife and young grandson were killed in November 2008 at Bayles and Wylies crossing, near Hucknall, Nottinghamshire, said:

I think that Network Rail have treated me badly. They wrote just one letter of apology. My solicitors discovered that the crossing was seen to be unsafe by Railtrack in 2000 and their advisers said that a bridge should be built. That was eight years before they died. [...] After Jean and Mikey died, Network Rail straightened the dog leg and put lighting there, but this was not enough. I said when they died that a bridge needed to be put there. Further deaths were unnecessary. The work should have been done after one death, not after

¹¹⁶ [Double fatality at Bayles & Wylies footpath crossing, Bestwood, Nottingham, 22 November 2008](#), Rail Accident Investigation Branch, Report 32/2009, November 2009

¹¹⁷ [Fatal accident at Bayles & Wylies footpath crossing, Bestwood, Nottingham, 28 November 2012](#), Rail Accident Investigation Branch, Report 19/2013, September 2013

five. Network Rail did not even write or ring to tell me that a bridge was being built. They did not tell me when the new bridge opening ceremony was. I was not invited to the opening ceremony.”¹¹⁸

58. Robin Gisby, Network Rail’s Managing Director of Network Operations, admitted that management was negligent at the time of the Elsenham accident, which he went on to describe as “a watershed”.¹¹⁹ We challenged Mr Gisby to explain why Network Rail had treated bereaved families so badly:

The state our company was in over the risk assessment, and, to be honest, the subsequent behaviour of the company towards the families involved, were quite appalling. I think we have changed from that. I pay tribute to Tina Hughes and others who have helped get us there. She has been magnificent in helping us in the last two or three years. I believe that the company is in a much better place, but there is still a long way to go. Crossing the railway is dangerous, whether it is on foot or by vehicle. We are doing all we can to minimise those risks and make it as safe as possible. [...] How organisations such as ours would respond depends on the circumstance of the incident in which, tragically, somebody was killed and on the personal wishes of the bereaved themselves, but I would like to think that in such very difficult circumstances we would not behave as we clearly did after the Elsenham incident and others that are covered in other witnesses’ evidence.¹²⁰

Network Rail has admitted that its management of level crossings has previously been negligent and that its behaviour towards bereaved families has been appalling. In 2012 Sir David Higgins, then Chief Executive of Network Rail, rightly apologised for the mistakes which contributed to the deaths of Olivia Bazlinton and Charlotte Thompson at Elsenham. *Network Rail now owes each of the families it has let down a full, public apology, both for the mistakes which contributed to accidental deaths at level crossings and the subsequent treatment of bereaved families. We call on its chief executive to provide this.*

59. Chris Bazlinton described Network Rail’s failure to produce key documents during the inquest into his daughter’s death as a “conspiracy of silence”.¹²¹ Not only were Part B of the level crossing risk assessment and the “Hudd memo”, written in 2001 by an inspector concerned about the Elsenham crossing, withheld from the inquest but Network Rail’s lawyers successfully persuaded the coroner to exclude from the evidence a report by the Health and Safety Executive that identified deficiencies in Network Rail’s risk assessment methodology.¹²² Robin Gisby said “I do not know why those things were not produced. They certainly should have been; they were somewhere within our organisation, and we

118 Q5 [Peter Rayner, reading Laurence Hoggart’s statement]

119 Qq163-164 [Chair and Robin Gisby]

120 Qq164-165 [Robin Gisby]

121 Q2 [Chris Bazlinton]

122 Chris Bazlinton (SLC.012)

have investigated why they did not come out until much later in the day, as have other organisations”. However, he did not disclose the findings of those investigations.¹²³ Mr Bazlinton subsequently wrote to us to say that this was the first time anyone has admitted that such an investigation had been held.¹²⁴

60. *In relation to the Elsenham tragedy, Network Rail should disclose to the bereaved families the findings of all investigations into why ‘Part B’ of the risk assessment, the ‘Hudd Memo’ and the Health and Safety Executive report on Network Rail’s risk assessment methodology were not initially disclosed.*

Whistleblowing

61. The existence of both Part B of the Elsenham risk assessment and the ‘Hudd memo’ only came to light when disclosed in 2010 by a Network Rail employee. The whistleblower initially raised concerns internally, in accordance with Acas guidance.¹²⁵ **It is unlikely that Network Rail would have been prosecuted in relation to the Elsenham tragedy were it not for the actions of a whistleblower. The knock-on effects of the successful prosecution encouraged Network Rail to take level crossing safety much more seriously.**

62. The rail industry has a confidential reporting scheme known as CIRAS, Confidential Incident Reporting and Analysis System, which is operated by the RSSB.¹²⁶ CIRAS is not a “prescribed person” under the Public Interest Disclosure Act 1998 and therefore the full protections of employment law may not apply to whistleblowers who report their concerns to CIRAS.¹²⁷ The Department for Business, Innovation and Skills is currently analysing responses to a consultation on this matter and the charity Public Concern at Work has suggested that “prescribed functions” could be specified under an amended Act.¹²⁸ ***The Government should consider adding confidential reporting schemes such as CIRAS to the list of prescribed persons and bodies under the Public Interest Disclosure Act 1998.***

Senior accountability

Box 6: Beccles, 2010

Beccles, Suffolk, July 2010: As Richard Wright drove his vehicle across a user-worked crossing on his farm, it was struck by a train. Mr Wright was injured and his 10-year-old

¹²³ Qq158-162 [Robin Gisby]

¹²⁴ Chris Bazlinton (SLC 044)

¹²⁵ [Whistleblowing – Public interest disclosure](#), Acas

¹²⁶ [CIRAS](#)

¹²⁷ [Blowing the whistle to a prescribed person: list of prescribed people and bodies](#), Department for Business, Innovation & Skills, 20 February 2013. [Public Interest Disclosure \(Prescribed Persons\) \(Amendment\) Order 2013](#)

¹²⁸ [Whistleblowing framework: call for evidence](#), Department for Business, Innovation and Skills; [Report on the effectiveness of existing arrangements for workplace whistleblowing in the UK](#), Whistleblowing Commission, Public Concern at Work, November 2013 (Paras 97-99 and Recommendation 13)

grandson was thrown from the vehicle, sustaining life-changing injuries. For many years prior to the accident, Mr Wright had been asking Network Rail and its predecessor, Railtrack, to fit a crossing telephone because there were no warning systems. This was finally done in 2011, after the accident. ORR established that the crash was caused by poor visibility when people were crossing from the south side and successfully prosecuted Network Rail, which was fined £500,000 in June 2013. Network Rail appealed against the decision but in January 2014 the fine was upheld.

63. Handing down judgement in Network Rail’s unsuccessful appeal against the fine in the Beccles case in January 2014, the Court of Appeal said:¹²⁹

If ... a bonus incentivises an executive director to perform better, the prospect of a significant reduction of a bonus will incentivise the executive directors on the board of companies such as Network Rail to pay the highest attention to protecting the lives of those who are at real risk from its activities. In short, it will demonstrate to the court the company’s efforts, at the level of those ultimately responsible, to address its offending behaviour, to reform and rehabilitate itself and to protect the public.

64. Network Rail’s Management Incentive Plan states that no annual or long-term bonus would be payable to an executive director if there was a catastrophic accident for which Network Rail was culpable.¹³⁰ **Given that Network Rail has recently been held responsible for the serious accident at Beccles in July 2010 we would be very concerned if the Remuneration Committee awarded bonuses to executive directors this year. We recommend that Network Rail clarify the definition of “catastrophic” in its Management Incentive Plan so that it includes life-changing injuries. We call on Ministers to address this issue in discussions about Network Rail’s status.**

Duty of candour

65. We asked the Law Commission whether railway operators have a general duty of candour in relation to coroners’ inquests and, in particular, whether they are required to produce all relevant documentation. Richard Percival, Team Manager for Public Law, said:

There are some existing reporting obligations. There are general reporting obligations under health and safety law that apply to everybody. There are also some railway-specific ones; you mentioned the CIRAS reporting system, for instance. There is also a duty on railway bodies to report to RAIB any accidents or incidents, but those are the bodies themselves. There are duties

¹²⁹ *R and Sellafeld Ltd & R and Network Rail Infrastructure Ltd*, [2014] EWCA Crim 49 (para 70-73)

¹³⁰ *Management Incentive Plan statement - effective 1 April 2012*, Network Rail

on employees to report issues to employers, but I do not think anyone would say those added up to what most people mean by a duty of candour.¹³¹

66. The Network Rail Code of Business Ethics currently encourages cooperation with regulators but does not go as far as the wide-ranging culture of openness, transparency and candour proposed, in a different context, by the Francis Inquiry into Mid Staffordshire NHS Foundation Trust.¹³²

67. We recommend that the Government consider whether Network Rail should be subject to a statutory duty of openness, transparency and candour, analogous to the recommendations of the Francis Inquiry into Mid Staffordshire NHS Foundation Trust. The Office of Rail Regulation should consider whether such a duty can be imposed as a licence condition. Network Rail should amend its internal code of conduct to reflect an expectation that the railway workforce should act with openness, transparency and candour.

Family liaison

68. Families were generally positive about the support provided by British Transport Police family liaison officers.¹³³ Their role is vital in providing a single and consistent point of contact with the investigation, inquest and bereavement counselling services.¹³⁴ These officers perform a difficult role, having to maintain the neutrality of the investigation whilst providing support to the family at a very traumatic time and through a legal process that may last for a year or more.

69. Network Rail must do more to improve its communications with the families of people killed or injured at level crossings. We recommend that Network Rail appoint single points of contact to communicate with affected families via the BTP until all legal proceedings have concluded. If the family so wishes, the Network Rail should then keep the family directly informed of safety upgrades or other positive measures as they are being implemented.

Investigations and inquests

Rail Accident Investigation Branch

70. As at October 2013, the RAIB had started 43 level crossing investigations and published 35 reports, containing 130 recommendations for improving level crossing safety.¹³⁵

131 Q60 [Richard Percival]

132 *Business Ethics – Everyday matters – Code of business ethics*, Network Rail (Page 22 - Government and Regulatory Relationships); *Report of the Mid Staffordshire NHS Foundation Trust Public Inquiry - Executive summary*, HC (2012-13) 947

133 For example, Q12 [Tina Hughes, Chris Bazlinton]; Deborah Scanlon ([SLC_035](#))

134 *Family Liaison Officers*, British Transport Police

135 Rail Accident Investigation Branch ([SLC017](#)) para 2

Carolyn Griffiths, Chief Inspector of Rail Accidents, told us what circumstances would result in an RAIB investigation:

The criteria are based on a simple decision, which is whether we believe there could be significant safety learning from our investigation. There are some “mandates” from the European directive, but we are still not required to make those mandated investigations if we believe that, at the end of the day, there will not be much to learn in terms of safety. For instance, if somebody has been deliberately putting themselves at risk by playing chicken at a crossing or whatever, it is unlikely we would investigate if we had absolute certainty that that was the case.¹³⁶

In the interests of transparent decision-making, the Rail Accident Investigation Branch should publish its rationale when it decides not to conduct an accident investigation.

Legal support for families

71. Chris Bazlinton told us that the families were not able to afford legal representation during the inquest into the death of his daughter and her friend:

We faced a bank of lawyers. There were three barristers and two solicitors paid for by the train companies and Network Rail. If we had been able to afford £15,000 or £20,000 to be represented by a barrister, they would probably have had another one, and of course that would have been paid for out of the public purse.¹³⁷

It is deeply regrettable that inquests into deaths at level crossings should be perceived by the bereaved families to be adversarial hearings at which they are disadvantaged because they cannot compete with Network Rail’s level of legal representation. Network Rail should consider what is an appropriate level of legal representation taking into account the impact on bereaved families.

72. The Parliamentary Under-Secretary of State for Transport, Stephen Hammond MP, told us that help was available to families from the legal aid budget, depending on individual circumstances.¹³⁸ Ministry of Justice guidance states that Legal Help, the advice and assistance level of legal aid, is available for inquests into the death of a member of the individual’s family. However, Legal Help covers preparatory work associated with the inquest, not legal representation at the inquest. This is only provided in exceptional circumstances.

73. In some cases Legal Help can fund someone to attend the inquest as a “McKenzie Friend”, to offer informal support in Court, provided that the coroner gives permission.¹³⁹

136 Q115 [Carolyn Griffiths]

137 Q12 [Chris Bazlinton]

138 Q199 [Stephen Hammond MP]

139 [Lord Chancellor’s Exceptional Funding Guidance \(Inquests\)](#), Ministry of Justice, February 2013

We invite the Chief Coroner to consider issuing guidance on whether a ‘McKenzie Friend’ is generally allowable in the coroner’s court to offer support to bereaved relatives. The Government should extend Legal Help to cover representation of bereaved families at inquests.

Media, communications and use of language

74. We are concerned that the word “misuse” is used indiscriminately when referring to level crossing incidents.¹⁴⁰ That word does not differentiate between wilful negligence, such as jumping barriers, and situations that impair human decision-making, such as being unable to see clearly the railway boundary. Network Rail has admitted that level crossings are not always as safe as they can be and most crossings do not provide a warning system or automatic protection.

75. Network Rail accepted that “some of the language used–‘misjudgement’, ‘errors of judgement’, ‘misuse’ and ‘abuse’[...] needs tidying up”¹⁴¹ However, the Minister considered that the term “misuse” remained relevant and covered the majority of accidents:

Of course, any death is deeply tragic, but all of these deaths happened as a direct result of misuse, either accidental or wilful, by the crossing users themselves; indeed, the latest figures indicate that 90% of the risk factors at level crossings arise from public behaviour.¹⁴²

This takes no account of the fact that the underlying cause of accidents is often attributable to errors in the design or construction of the level crossing, or to the absence of warnings or protection.

76. We recommend that the rail industry, government and Office of Rail Regulation stop using the term “misuse” in relation to accidents at level crossings and instead adopt “deliberate misuse” where the evidence supports this and “accident” where it does not.

140 For a recent example see [Level crossing safety in the spotlight](#), TRL, 12 February 2014

141 Q167 [Robin Gisby]

142 Qq182-183 [Stephen Hammond MP]

6 Conclusion

77. Safety at level crossings has greatly improved in the last five years, with the statistically significant fall in fatalities validating Network Rail's claim of a 25% reduction in risk, relative to 2009. However, level crossings represent one half of the non-suicide, non-trespass fatality risk on the railway. We call on government and industry to adopt something analogous to the "vision zero" approach on the roads, with the aim of no level crossing fatalities by 2020.

78. The law relating to level crossings is in need of reform. The Law Commission has proposed a fundamental overhaul of the legislation, which we broadly support. Some detailed matters deserve further consideration and legal reform must take account of the viability of heritage railway.

79. The ring-fenced funding provided in the ORR's final determination for Control Period 5 is welcome, but Network Rail must be more transparent about how it will identify high risk crossings, which should be priorities for improvement. Network Rail has been able to improve safety by closing level crossings but further improvements may be progressively more difficult to achieve. ***The ORR should seek to improve its grip on overseeing how Network Rail identifies the highest risk level crossings, focusing on the assessment of risk and implementation of improvement programmes.***

80. Network Rail has, on too many occasions, shown a callous disregard for the feelings of the families of people killed and seriously injured in accidents at level crossings. Victims have been erroneously described as "trespassers" or accused of "misuse" of the railway when, in fact, they have tried to use level crossings appropriately.¹⁴³ The lack of transparency regarding safety concerns at the Elsenham crossing was particularly shocking and raises profound questions about Network Rail's internal culture and accountability. Network Rail must now demonstrate that it has transformed the way in which it deals with people whose lives have been changed by accidents at level crossings.

143 Tina Hughes (SLC 020) para 2.5 and Q160 [Robin Gisby]

Conclusions and recommendations

How safe are level crossings?

1. Analysis of Network Rail and Department for Transport data (see Annex) shows that if an average walking trip includes a level crossing, the fatality risk to a pedestrian is about double the risk of an average walking trip without a level crossing. Overall, there is an increase of around 8% in the risk of a fatality during an average car journey that includes a level crossing, compared with one that does not. We recommend that the Office of Rail Regulation adopt an explicit target of zero fatalities at level crossings from 2020. (Paragraph 15)

Making level crossings safer

2. We estimate that there may be many hundreds of crossings which exceed this limit. These should be prioritised for improvement or closure. Network Rail should publish the names and locations of the level crossings that it intends to target during Control Period 5 [2014-19], together with an indication of the work to be carried out and planned timescales (Paragraphs 20 and 23)
3. The ORR should seek to improve its grip on overseeing how Network Rail identifies the highest risk level crossings, focusing on the assessment of risk and implementation of improvement programmes. (Paragraph 79)
4. The appointment of level crossing managers has made a significant contribution to the recent improvement in safety at level crossings: we recommend that Network Rail continue to use these posts to drive continuing improvements in safety. (Paragraph 22)
5. We recommend that Network Rail address criticism of its apparent preference for footbridges as replacements for level crossings and explain what assessment it makes of the impact on disabled people of replacing level crossings with footbridges rather than underpasses. (Paragraph 26)

Transparency

6. We recommend that Network Rail work with the Information Commissioner's Office and the Open Data Institute to develop protocols on publishing a fuller range of risk assessment material for each level crossing. Protocols should include data formats, publication frequencies and guidance material to aid usability, so that transparency is improved. (Paragraph 21)

Closure of level crossings

7. We welcome the public interest tests for closure procedures. We see merit in applying a public safety test to any diversionary routes that may result from a level crossing closure and we recommend that the DfT consider this option as part of its consideration of the Law Commission's proposals (Paragraph 29)

8. We are concerned that the proposed appeal mechanism for closure orders, using judicial review, will be out of reach for ordinary people and, increasingly, local authorities. We recommend that the DfT consider using alternative dispute resolution, such as mediation by the Office of Rail Regulation, to supplement judicial review. (Paragraph 30)

Co-operation between railway operators, highway authorities and planning authorities

9. We welcome the duty of co-operation on railway operators, traffic authorities and highways authorities in respect of level crossings but recommend that it should also encompass planning authorities so that the impact of additional numbers of people using level crossings can be considered (Paragraph 32)

Impact on heritage railways

10. We are concerned that the extension of the Health and Safety at Work etc Act 1974 to volunteer-run railways, could threaten the viability of the heritage sector. We recommend that any changes to the regulation of level crossings should include transitional arrangements aimed at protecting the viability of heritage railways. (Paragraph 35)

ORR oversight of level crossing safety

11. In not pressing for a higher standard of safety at the Moreton-on-Lugg crossing the ORR appears to have contravened the spirit of its own objectives for level crossing safety improvements, which state that 'Simple renewal and retention of existing crossings should be seen as a last resort'. (Paragraph 38)
12. We are concerned that the ORR may not have enough appropriately qualified and experienced staff to provide adequate inspection of the rail network and of level crossings or to adequately challenge Network Rail's signalling work plans. The ORR board should consider whether just seven professionally-qualified signalling engineers is an adequate number of staff to provide inspections nationally, both of existing installations and proposed works. (Paragraph 39)

Human factors

13. We recommend that the Office of Rail Regulation reviews level crossing guidance and standards in view of recent human factors research, including the impact of delays, visual perception of older people, different traverse speeds and ambiguity about where to stand safely before crossing. (Paragraph 46)

Highway Code and other road regulations

14. The DfT has not been proactive in assessing how it could make level crossings safer, for example by improving road signage. We recommend that, as part of the forthcoming overhaul of the Traffic Signs and General Directions 2002, DfT revise its guidance on signage and road layouts based on the latest research findings from TRL and RSSB. (Paragraph 50)

Motorists' education

15. We note the strong evidence base for the hazard perception test and encourage its further development. The Driver and Vehicle Standards Agency (DVSA) should incorporate level crossings into the next version of the hazard perception test. As well as identification of the hazard, the DVSA should consider ways of ensuring that the test assesses actions to be taken in response to level crossings. (Paragraph 54)

Pedestrian education

16. The Department for Education's PSHE curriculum only includes road safety in its coverage of transport safety. DFE should explicitly include rail safety (including level crossings) in the PSHE curriculum (Paragraph 56)

Network Rail's treatment of families

17. Network Rail has admitted that its management of level crossings has previously been negligent and that its behaviour towards bereaved families has been appalling. Network Rail now owes each of the families it has let down a full, public apology, both for the mistakes which contributed to accidental deaths at level crossings and the subsequent treatment of bereaved families. We call on its chief executive to provide this. (Paragraph 58)
18. In relation to the Elsenham tragedy, Network Rail should disclose to the bereaved families the findings of all investigations into why 'Part B' of the risk assessment, the 'Hudd Memo' and the Health and Safety Executive report on Network Rail's risk assessment methodology were not initially disclosed (Paragraph 60)

Whistleblowing

19. It is unlikely that Network Rail would have been prosecuted in relation to the Elsenham tragedy were it not for the actions of a whistleblower. The knock-on effects of the successful prosecution encouraged Network Rail to take level crossing safety much more seriously. The Government should consider adding confidential reporting schemes such as CIRAS to the list of prescribed persons and bodies under the Public Interest Disclosure Act 1998. (Paragraphs 61 and 62)

Senior accountability

20. Given that Network Rail has recently been held responsible for the serious accident at Beccles in July 2010 we would be very concerned if the Remuneration Committee awarded bonuses to executive directors this year. We recommend that Network Rail clarify the definition of "catastrophic" in its Management Incentive Plan so that it includes life-changing injuries. We call on Ministers to address this issue in discussions about Network Rail's status. (Paragraph 64)

Duty of candour

21. We recommend that the Government consider whether Network Rail should be subject to a statutory duty of openness, transparency and candour, analogous to the recommendations of the Francis Inquiry into Mid Staffordshire NHS Foundation Trust. The Office of Rail Regulation should consider whether such a duty can be

imposed as a licence condition. Network Rail should amend its internal code of conduct to reflect an expectation that the railway workforce should act with openness, transparency and candour. (Paragraph 67)

Family liaison

22. Network Rail must do more to improve its communications with the families of people killed or injured at level crossings. We recommend that Network Rail appoint single points of contact to communicate with affected families via the BTP until all legal proceedings have concluded. If the family so wishes, the Network Rail should then keep the family directly informed of safety upgrades or other positive measures as they are being implemented. (Paragraph 69)

Investigations and inquests

23. In the interests of transparent decision-making, the Rail Accident Investigation Branch should publish its rationale when it decides not to conduct an accident investigation. (Paragraph 70)
24. It is deeply regrettable that inquests into deaths at level crossings should be perceived by the bereaved families to be adversarial hearings at which they are disadvantaged because they cannot compete with Network Rail's level of legal representation. Network Rail should consider what is an appropriate level of legal representation taking into account the impact on bereaved families. (Paragraph 71)
25. We invite the Chief Coroner to consider issuing guidance on whether a 'McKenzie Friend' is generally allowable in the coroner's court to offer support to bereaved relatives. The Government should extend Legal Help to cover representation of bereaved families at inquests. (Paragraph 73)

Media, communications and use of language

26. We recommend that the rail industry, government and Office of Rail Regulation stop using the term "misuse" in relation to accidents at level crossings and instead adopt "deliberate misuse" where the evidence supports this and "accident" where it does not. (Paragraph 76)

Annex: Level crossing and road risk compared

Note by Professor Andrew Evans, Specialist Advisor

1. In order to place the risk at level crossings in perspective, it is desirable to find a means of comparing LC risks with road risk.
2. One way of doing this would be first to estimate the road safety fatality risk of a typical car trip or walking trip without a level crossing, to form a baseline. Then it could be supposed that the journey required the traverse of one level crossing, and the additional risk imposed by the level crossing could be compared with the baseline risk.
3. This can be done for both typical car journeys and typical walk journeys, though various simplifications have to be made. Table 1 gives the data and calculations. The column headed “source” gives either the external source of the data or a calculation from other figures in the table. The alphanumeric sources such as NTS0409 are references to DfT statistical tables (NTS = National Travel Survey).
4. The bottom line of the table gives the additional risk from the presence of one level crossing on an average car or walk journey as a percent of the baseline road risk. For car journeys, the additional risk from the level crossing is estimated at 7.6% of the baseline road risk, which is modest. For walk journeys, the additional risk from the presence of a level crossing is much larger. It is estimated to be 114% of the baseline road risk, implying that the LC roughly doubles the risk of the journey.
5. This in turn is because the risk per level crossing traverse is much higher for pedestrians than for vehicle occupants. Based on LC fatalities over the decade to March 2013, row (k) of Table 1 estimates that there were 1.35 fatalities per billion LC traverses for vehicle occupants and 30.1 fatalities per billion LC traverses for pedestrians, which was about 22 times greater. Pedestrians make about one eighth of the number of LC traverses as vehicle occupants, but they have just under three times the number of fatalities. However, it is notable that the road fatality risk per kilometre of travel is also about 20 times greater for pedestrians than vehicle occupants - see row (d) of Table 1.
6. In conclusion, if a typical car journey includes a level crossing, the crossing imposes an additional fatality risk estimated at about 7.6% of the baseline road risk. If a typical walk journey includes a level crossing, the crossing imposes an additional fatality risk estimated at about 114% of the baseline road risk. However, because a typical walk journey is much shorter than a typical car journey, it is less likely to include a level crossing. The fatality risk per LC traverse is estimated to be 22 times greater for pedestrians than for vehicle occupants. This ratio is roughly in line with the road fatality risk per kilometre for pedestrians relative to vehicle occupants.

Table 1: Journeys and fatalities with car and walk as main mode (2012)

	Source	Car	Walk
Road journeys			
(a) Trips/person/year with given main mode	NTS0409	614	212
(b) Km/person/year with given main mode	NTS0410	8359	243
(c) Average length of trip with given main mode (km)	(b)/(a)	13.61	1.146
Road fatalities			
(d) Road fatalities per billion person-km	RA553001	1.3	23
(e) Road fatalities per billion trips	(c)*(d)	17.70	26.36
(f) Road fatalities per single trip	(e)*1E-09	1.77E-08	2.64E-08
Level crossing traverses			
(g) LC vehicle or pedestrian traverses per year	NR LC database	12.38E+08	2.43E+08
(h) Average car/van occupancy	NTS0905	1.56	
(i) LC person-traverses per year.	(g)*(h)	19.31E+08	2.43E+08
Level crossing fatalities			
(j) LC Fatalities per year 2003/04-2012/13j	ASPR Chart 187	2.6	7.3
(k) LC fatalities per person-traverse	(j)/(i)	1.35E-09	3.01E-08
LC /road fatalities comparison			

Formal Minutes

Monday 24 February 2014

Members present:

Mrs Louise Ellman, in the Chair

Jim Dobbin
Jim Fitzpatrick
Karen Lumley
Jason McCartney

Mr Adrian Sanders
Chloe Smith
Graham Stringer
Martin Vickers

Draft Report (*Safety at Level Crossings*), proposed by the Chair, brought up and read.

Ordered, That the draft Report be read a second time, paragraph by paragraph.

Paragraphs 1 to 80 read and agreed to.

Text boxes, Annex and Summary agreed to.

Resolved, That the Report be the Eleventh Report of the Committee to the House.

Ordered, That the Chair make the Report to the House.

Ordered, That embargoed copies of the Report be made available, in accordance with the provisions of Standing Order No. 134.

[Adjourned till Tuesday 25 February at 3.30 pm]

Witnesses

The following witnesses gave evidence. Transcripts can be viewed on the Committee's inquiry page at www.parliament.uk/transcom.

Monday 21 October 2014

Question number

Peter G Rayner, British Rail (retired), **Chris Bazlinton**, **Laurence Hoggart**, **Tina Hughes** and **Richard Wright** Q1-14

Claire Turner, Principal Consultant, Human Factors, Environmental Resources Management, **Alan Woolnough**, Train Driver, **Mark Magee**, Approved Driving Instructor Registrar and Director of Regulation, Standards and Development, Driving Standards Agency, and **Lesley Young**, Chief Driving Examiner, Driving Standards Agency Q15-45

Deputy Chief Constable Paul Crowther and **Superintendent Philip Trendall QPM**, Territorial Policing, British Transport Police, **Right Hon Lord Justice Lloyd Jones**, Chairman, Law Commission, **Richard Percival**, Team Manager, Law Commission, and **Sarah Young**, Lawyer, Law Commission Q46-79

Monday 4 November 2014

Bill Hillier, Director and Chairman of the Operating and Safety Committee, Heritage Railway Association, **Anson Jack**, Deputy Chief Executive, RSSB, **Michael Woods**, Head of Operations and Management Research, RSSB, **Carolyn Griffiths**, Chief Inspector, Rail Accident Investigation Branch, and **Ian Prosser**, Director of Railway Safety and HM Chief Inspector of Railways, Office of Rail Regulation Q80-156

Robin Gisby, Managing Director, Network Operations, Network Rail, and **Phil Verster**, Route Managing Director, London North Eastern, Network Rail Q157-180

Stephen Hammond MP, Parliamentary Under-Secretary of State, Department for Transport, **Robin Groth**, Deputy Director, Rail Technical, International and Safety, Department for Transport, and **Chris Angell**, Senior Policy Adviser, Railway Safety, Department for Transport Q181-208

Published written evidence

The following written evidence was received and can be viewed on the Committee's inquiry web page at www.parliament.uk/transcom. SLC numbers are generated by the evidence processing system and so may not be complete.

- 1 Ashfield District Council/Nottinghamshire County Council (SLC 001)
- 2 Star Traq UK Ltd (SLC 002)
- 3 Peter G Rayner (SLC 003)
- 4 William Bramhill (SLC 004)
- 5 London TravelWatch and Passenger Focus (SLC 005)
- 6 Department for Transport (SLC 006)
- 7 Network Rail (SLC 007)
- 8 ASLEF (SLC 008)
- 9 Professor Philip Thomas (SLC 009)
- 10 Heritage Railway Association (SLC 010)
- 11 Richard Frederick Wright (SLC 011)
- 12 Chris Bazlinton (SLC 012)
- 13 Royal Society For The Prevention Of Accidents (Rospa) (SLC 013)
- 14 Sustrans (SLC 014)
- 15 Sanjeev Appicharla (SLC 015)
- 16 RSSB (SLC 016)
- 17 Rail Accident Investigation Branch (SLC 017)
- 18 Transport Salaried Staffs' Association (SLC 018)
- 19 Community Safety Partnerships (SLC 019)
- 20 Tina Hughes (SLC 020)
- 21 Parliamentary Advisory Council For Transport Safety (PACTS) (SLC 021)
- 22 RMT (SLC 022)
- 23 TRL Limited (SLC 023)
- 24 Association Of Train Operating Companies (SLC 024)
- 25 ORR (SLC 025)
- 26 Sadlers House Management Company (SLC 026)
- 27 STRAIL UK (SLC 027)
- 28 DSA (SLC 028)
- 29 British Transport Police (SLC 029)
- 30 Enfield Council (SLC 030)
- 31 Living Streets (SLC 032)
- 32 Andrew Fraser (SLC 033)
- 33 Mr D. Holladay (SLC 034)
- 34 Deborah Scanlon (SLC 035)
- 35 Mr David B. Wilson (SLC 036)
- 36 Hawkins Associates Ltd (SLC 037)
- 37 The Ramblers (SLC 038)
- 38 Tracy Hart (SLC 040)
- 39 Sanjeev Appicharla (SLC 041)

- 40 Sanjeev Appicharla (SLC 042)
- 41 William Cash MP (SLC 043)
- 42 Chris Bazlinton (SLC 044)
- 43 Network Rail (SLC 045)
- 44 Driver and Vehicle Standards Agency (SLC 046)
- 45 Network Rail (SLC 047)
- 46 TSSA (SLC 048)
- 47 Office of Rail Regulation (SLC 049)
- 48 Office of Rail Regulation (SLC 050)
- 49 Law Commission (SLC0060)
- 50 ADEPT Traffic and Safety Working Group (SLC 061)
- 51 CTC (SLC 062)

List of Reports from the Committee during the current Parliament

All publications from the Committee are available on the Committee's website at <http://www.parliament.uk/transcom>.

The reference number of the Government's response to each Report is printed in brackets after the HC printing number.

Session 2013–14

Eleventh Report	Safety at level crossings	HC 680
Tenth Report	Ready and waiting? Transport preparations for winter weather	HC 681
Ninth Report	High speed rail: on track?	HC 851 (HC 1085)
Eighth Report	Access to ports	HC 266 (HC 1083)
Seventh Report	Local authority parking enforcement	HC 118 (HC 970)
Seventh Special Report	The new European motorcycle test: Government Response to the Committee's Sixth Report of 2009–10	HC 656
Sixth Report	Flight Time Limitation: Follow-up	HC 641 (HC 795)
Firth Report	Access to transport for disabled people	HC 116 (HC 870)
Fourth Report	Cost of motor insurance: whiplash	HC 117 (CM 8738)
Third Report	The work of the Vehicle and Operator Services Agency (VOSA)	HC 583 (HC 678)
Second Report	Future programme: 2013–14	HC 438
Fifth Special Report	The European Commission's 4 th Railway Package: Government Response to the Committee's Twelfth Report of Session 2012–13	HC 439
Third Special Report	Rail 2020: Rail Delivery Group and Passenger Focus responses to the Committee's Seventh Report of Session 2012–13	HC 81
Fourth Special Report	Land transport security—scope for further EU involvement?: Government Response to the Committee's Eleventh Report of Session 2012–13	HC 177
Second Special Report	Marine Pilotage: Government Response to the Committee's Ninth Report of Session 2012–13	HC 79
First Report	Aviation strategy	HC 78 (HC 596)
First Special Report	Cancellation of the InterCity West Coast franchise competition: Government Response to the Committee's Eighth Report of Session 2012–13	HC 80

Session 2012–13

Twelfth Report	The European Commission's 4 th Railway Package	HC 1001(HC 439)
Eleventh Report	Land transport security—scope for further EU involvement?	HC 875
Ninth Special Report	Rail 2020: Government and Office of Rail Regulation Responses to the Committee's Seventh Report of 2012–13	HC 1059
Tenth Report	The Coastguard, Emergency Towing Vessels and the Maritime Incident Response Group: follow up: Government Response to the Committee's Sixth Report of 2012–13	HC 1018

Ninth Report	Marine Pilotage	HC 840
Eighth Report	Cancellation of the InterCity West Coast franchise competition	HC 537
Eighth Special Report	Plug-in vehicles, plugged in policy?: Government Response to the Committee's Fourth Report of Session 2012–13	HC 884
Seventh Report	Rail 2020	HC 329
Sixth Report	The Coastguard, Emergency Towing Vessels and the Maritime Incident Response Group: follow up	HC 647
Fifth Report	Future programme: autumn and winter 2012–13	HC 591
Fourth Report	Plug-in vehicles, plugged in policy?	HC 239
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