

## HOUSE OF COMMONS TRANSPORT COMMITTEE

### INQUIRY INTO SAFETY AT LEVEL CROSSINGS

#### SUBMISSION FROM LONDON TRAVELWATCH AND PASSENGER FOCUS

1. London TravelWatch and Passenger Focus are the official consumer watchdogs for users of the main line, metro, light rail and tram networks in England and Wales, and of the main line railways in Scotland. In 2011/12 about 2.8 billion passenger trips were made on these systems.
2. Both organisations are members of the Parliamentary Advisory Committee on Transport Safety (PACTS) and are represented on its Rail Safety Working Group, which proposed this topic. We are therefore pleased that the Select Committee has chosen it as a topic for an inquiry.
3. Our evidence below relates solely to the main line railways operated by Network Rail. There are comparatively few level crossings on the other rail systems within our remit, and most of these are on tramways which operate mainly on line of sight (i.e. without signals), in some cases on-street, and present a different profile of risk.
4. The paper comprises an introductory note on the level and pattern of risk presented by level crossings, followed by a comment in reply to each of the questions listed by the Committee. It concludes with some suggested recommendations.

#### Level crossing risk in context

5. Risk on the rail network is measured in terms of fatalities and weighted injuries (FWI), a composite statistic which applies weightings to injuries of varying severity in order to equate these to fatalities. For details of the methodology, see table 1 in RSSB (formerly the Rail Safety & Standards Board)'s *Annual Safety Performance Report 2012/13*, from which most of the other data cited in this note are drawn.
6. The industry's risk profile is continuously updated by RSSB by means of the safety risk model, which is derived from the data captured by the industry-wide safety management information system (SMIS) in which all rail operators are required by their licences to participate. Risk presented by trespassers, suicides and suspected suicides is excluded from the following statistics.
7. The model shows that the total current annual FWI rate associated with level crossings is 10.7, of which all but 1.1 is represented by fatalities. Of the total, 9.5 is risk to members of the public, 1.0 is to passengers and 0.2 is to members of the railway workforce.
8. Most of the risk arises from individuals being struck by trains while using crossings (6.6), followed by road vehicles being struck by trains (3.2), with much lesser amounts associated with slips/trips/falls (0.5) or individuals being struck by road vehicles or crossing equipment (0.1).

<b>ANNUAL LEVEL CROSSING RISK (FATALITIES + WEIGHTED INJURIES)</b>				
<b>Hazardous event</b>	<b>Passengers</b>	<b>Workforce</b>	<b>Public</b>	<b>Totals</b>
Pedestrian/cyclist/motor cyclist struck by train	0.7	0.0	5.9	<b>6.6</b>
Road vehicle struck by train	0.1	0.1	3.0	<b>3.2</b>
Slips, trips and falls on crossings	0.0	0.1	0.4	<b>0.5</b>
Person struck by road vehicle or crossing equipment	0.0	0.0	0.1	<b>0.1</b>
<b>Totals</b>	<b>1.0</b>	<b>0.2</b>	<b>9.5</b>	<b>10.7</b>

9. Risk arising from level crossings accounts for 11% of total railway risk. In terms of the three categories of people exposed to it, it represents only 2% of the risk faced by passengers and 1% of that faced by the workforce, but 71% of that faced by non-trespassing members of the public (who in this context are mainly road and path users).

10. Data collected by the European Rail Agency (ERA) relate only to fatalities and to accidents involving moving trains, and are normalised by train kilometres run. By this more restricted definition, Britain has the lowest level of risk of any of the European Economic Area member states which have railways (i.e. excluding Cyprus, Iceland and Malta), with an average during 2009-11 of 19 level crossing fatalities per billion train kilometres, compared with an EEA average of 260 [see ERA's *Intermediate report on the development of railway safety in the European Union 2013*]. Care should be taken in making such comparisons, because the level of risk is heavily dependent on the density and type of crossings on the network, and the volume and speed of both rail and road (or foot) traffic over them. Nevertheless, it is encouraging that Britain's crossing safety performance appears to bear comparison well with other similar rail systems.

11. Since most casualties occurring at level crossings are suffered by pedestrians, cyclists or the occupants of road vehicles, it is arguable that level crossing risk is best considered in the context of the overall safety of travel by road (or on footpaths), rather than by rail. In the past decade, about 0.2% of fatalities suffered by road vehicle users have occurred at level crossings, but in the case of cyclists, motor cyclists and pedestrians, this proportion rises to about 0.5%. When weighted to reflect the distances travelled by each mode (i.e. per billion passenger/pedestrian kilometres), the risk to other road/path users is about 50 times greater than to vehicle users [data derived from the Department for Transport's *Transport Statistics Great Britain 2012*].

12. In the light of these statistics, it could be argued that for most road and rail users, level crossing risk is minimal, and resources expended on mitigating it further would deliver greater returns if they were directed elsewhere. But a number of points should be borne in mind.

- Crossings are not evenly distributed across the rail, road and path networks. Many road and path users seldom if ever encounter them. But some (including specific groups such as agricultural workers or bus drivers) may use them several times a day, if there happens to be a crossing on a route they follow frequently. In the case of passengers, the risk is concentrated at those stations at which it is necessary to use a crossing in order to access a platform. So network-wide averages can disguise a huge variation in the level of individual exposure to crossing risk. It is not clear whether familiarity with particular crossings leads to greater caution in their use, or to a more blasé attitude towards them, but probably both are true in different individuals.
- Although overall crossing risk may have been reduced, this is not necessarily true of individual crossings, as this will depend on trends in the frequency and speed of road and rail traffic and on changes in the profile of the users. This can be affected not only by long-term societal trends (such as the increasing number of elderly road drivers) but also by local factors such as changes in land use or agricultural practices which can occur rapidly and may not be known to local rail managers.
- Unlike most other causes of potentially catastrophic rail accidents (such as collisions or derailments), the great majority of level crossing risk arises from the actions of members of the public over whom the railway has little or no direct control. It is therefore less amenable to technical solutions. Whereas level crossings accounted for about 30% of total train accident risk in 2000, as other sources were reduced, by 2010 they had come to account for about 53%. [Source : Network Rail's *Strategic Business Plan for England & Wales*].

- Although passengers on trains (as distinct from those using crossings to access platforms) face very limited risk of harm from crossing accidents, such events can and do cause serious delays and disruption to the network. These can also result from technical failures of crossing equipment, even when no casualties are involved. Crossings therefore cause inconvenience and loss to rail users which is additional to the direct costs borne by the railway in maintaining and operating them and in dealing with the consequences of crossing accidents when they occur.
- Crossing risk arises from the intersection of roads (or paths) with railways in the same plane. Because the movement of trains is signalled and controlled, most crossing risk results from incautious behaviour on the part of road (or path) users. Despite this, crossing accidents are frequently reported in terms (such as “car hit by train”) which can be read as implying blame on the part of the railway. Crossings therefore present reputational risk to the rail industry, even though it is usually the victim of other people’s actions. When criminal responsibility does lie with the railway (as in the case of the fatal accidents at Elsenham and Moreton-on-Lugg), the reputational damage done is potentially even greater. That there is widespread public concern about crossing safety is evidenced by the many letters received by the Select Committee on the subject, as cited in its notice announcing this inquiry.

13. The Committee has listed seven issues on which evidence is specifically sought.

***Are current safety measures at level crossings adequate? How should they be improved?***

14. In common with all employers, Network Rail has a legal duty to conduct its business in such a manner as to reduce risks to health and safety so far as is “reasonably practicable”. Taking account of court rulings over the years, the rail industry has produced guidance (see RSSB’s manual on *Taking safe decisions*) to assist its members in interpreting this obligation. To put the matter at its simplest, the legal duty does not (and cannot) require the total elimination of risk, but rather that it should be controlled at a level at which the cost, time and effort required to do so are not in “gross disproportion” to the safety benefits secured.

15. There is no single, simple test of the adequacy of crossing safety measures, and they can only properly be judged in the context of the physical and usage characteristics of individual sites. But Network Rail has been a world leader in the development of crossing risk modelling to inform its decisions, and its overall crossing safety performance compares favourably with that of any other equivalent rail network in Europe. So while there is always scope for further improvement, and lapses can and do occur from time to time, the industry’s achievements and current performance should not go unacknowledged.

16. The range of possible improvements currently being deployed includes :

- Closing crossings where possible, and replacing these with bridges or underpasses where necessary.
- Development of audible warning devices to advise pedestrians when another train is approaching after a first train has passed.
- A more cost-effective system for adding barriers to open (light-controlled) crossings.
- Physical modifications to passive (i.e. user-worked) crossings to improve sighting and warning times.
- Powered gates for user-worked crossings, to eliminate the need for users to alight from vehicles and to cross and recross the railway on foot.

- Development of CCTV to detect red light violations by motorists, both as static installations at high risk sites and in mobile camera vans deployed by the British Transport Police (BTP).
- Public information campaigns, including TV and radio advertising, “awareness events” at crossings, and educational campaigns targeted at high-risk audiences such as young people who wear headphones.
- New signalling technology (e.g. satellite-based systems) which can locate trains in long sections between signals and thereby reduce waiting times at crossings.
- Introducing a system of “approach locking” at manually-operated crossings to remove the risk of the gates or barriers being opened when a train is approaching.
- Seeking means of reducing the cost of crossing replacement or improvement, e.g. by developing modular footbridges or replacing filament bulbs with LEDs.

***In addition to bridges and underpasses what other cost-effective measures can be introduced to replace or improve safety at level crossings?***

17. Short of outright closure, grade-separation (i.e. replacing crossings by bridges or underpasses) is the only means of ensuring that the risks associated with crossings are eliminated. That is why the Office of Rail Regulation (ORR), the industry’s safety regulator, no longer allows new crossings to be opened, other than in wholly exceptional circumstances, and does not permit line speeds on existing routes to be raised above 125 mph without all crossings being removed. But such infrastructure improvements (even if they are designed only for use by pedestrians) invariably cost hundreds of thousands – if not millions – of pounds, and it is only at very high-risk crossings that such expenditure is likely to pass the test of “reasonable practicability” and thus be cost-effective on grounds of its safety benefits alone.

18. However, where both rail and road traffic densities are high, crossings can cause extended delays to road vehicles and generate significant traffic congestion. Logically, the economic impact of this congestion should be factored into the appraisal of crossing improvements. In practice, this seldom happens, because in Britain – unlike some other countries – the entire cost of crossing upgrades or replacements is usually borne by the railway, and highway authorities are under no obligation to contribute towards the cost of infrastructure improvements even if its primary purpose is reduce risk and delay to road users. This apportionment of the cost burden is an historical anomaly which is overdue for correction. Crossing-related costs should be borne equally by both the railway and the road authority, and where identifiable costs arise directly from (e.g.) development of land leading to higher vehicle or pedestrian usage, these should be recoverable from those responsible.

19. Several means of improving crossing safety are listed in response to the preceding question. Others include providing open or user-worked crossings with barriers, and/or installing telephones (to signallers) at gated crossings which do not yet have them, and/or fitting warning lights and audible alarms at footpath crossings to alert users to the approach of trains, and/or installing obstacle detectors at automatic crossings to allow half-barriers to be replaced with full-barriers.

***How should expenditure on improving safety at level crossings be prioritised in relation to other demands on the rail budget?***

20. In order to optimise the allocation of its investment and maintenance budgets, Network Rail should apply a common appraisal yardstick both to level crossing schemes and to other projects, including those with a specific safety objective. If the government believes that there

are legitimate societal concerns that justify a higher level of expenditure on crossings than this would provide, then it should allocate earmarked funding for this purpose.

21. In practice, this approximates to the current arrangements. Network Rail is required by the Health & Safety at Work etc Act 1974 (HSWA) to reduce risk so far as is reasonably practicable, as part of its day-to-day role as the owner, operator and maintainer of the infrastructure of the national rail system. It does this through, for example, its routine risk assessments and its renewals and enhancements programmes.

22. Every five years, the Secretary of State for Transport (in respect of England and Wales) and Scottish Ministers are required to publish their desired high level output specifications (HLOS) for the railways, and a statement of the public funds which will be available (SOFA), in the next "control period". In response, Network Rail sets out its strategic business plan, itemising what it intends to deliver for the level of funding indicated. It then falls to the ORR (as the industry's economic regulator) to determine whether the plan represents an efficient and effective use of resources, and to specify in more detail the required outputs.

23. This process provides ample opportunities for all three parties (government, industry and regulator) to review Network Rail's record and policies towards safety in general and towards level crossings in particular, and to assess the scope for further improvements alongside all of the competing claims on the allocated funds.

### ***Is Network Rail giving sufficient priority to improving safety at level crossings?***

24. In 2010 to 2012, Network Rail achieved a 20% reduction in crossing-related risk. The two governments' combined SOFAs for Control Period 5 (i.e. 2014-19) made provision for £75 million of ring-fenced funding to be devoted specifically to further enhancements in crossing safety.

25. In response, in its strategic business plans for this period, published in January 2013, Network Rail has set itself a target of reducing level crossing risk by a further 8% over the control period. This target may at first sight appear low in the light of its recent achievements, but it is important to remember that as the most cost-effective schemes are implemented, so the rate of return on further schemes diminishes, and additional increments in safety improvement become more expensive to deliver.

26. The intention is to use this ring-fenced funding to close 30 particularly high-risk crossings and to install a further 200 enforcement cameras, as well as replacing whistle boards with train-detection equipment and providing additional telephones, miniature warning lights, power-operated gates and improved decking.

27. Network Rail's published policy statement on managing crossing safety commits it, inter alia, to

- reducing crossing risk wherever reasonably practicable, either by closing them or enhancing their equipment
- concentrating its efforts on crossings which present the greatest risk
- educating users on safe crossing use, and highlighting the dangers they present
- working with the police and regulator to enforce the law against those who misuse crossings
- inspecting crossings regularly and maintaining them properly to minimise failures
- ensuring that staff who operate crossings are competent to perform this role
- supporting research and trialling new technology and processes
- working in partnership with others affected, such as train operators and highway authorities

- reviewing risk in response to changes in railway operations or the road/path user population
- encouraging planning authorities to secure crossing improvements in connection with new developments.

28. No organisation, least of all Network Rail, is perfect in every respect – as periodic reports from the Rail Accident Investigation Branch bear witness. But there is clear evidence of a corporate desire further to improve its record on level crossing safety, which is already superior to that of most comparable rail systems. This is a not inconsiderable achievement, and one for which it deserves due recognition.

***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?***

29. The government has not sought in recent years to involve itself directly in the detail of rail safety policy. But in its July 2012 HLOS statement, it asserted that “The Secretary of State specifically wishes the industry to reduce the risk of accidents at level crossings. In accordance with advice from ORR she has made a ring-fenced provision of £65m over CP5 to facilitate the achievement of this outcome by enabling Network Rail to invest to reduce risk.”

30. The equivalent statement by Scottish Ministers, published the previous month, announced the establishment of a separate £10 million level crossings fund. This would be made available, it was stated, “in addition to the baseline funding requirement for level crossing safety in Scotland, to support Network Rail, local authorities and other local stakeholders to work in partnership to facilitate the closure of level crossings in Scotland.”

31. No similar provision was made for any other facet of rail safety. Both governments have therefore acknowledged the priority to be given to level crossings in the industry’s overall safety enhancement programme.

32. In its *Draft determination of Network Rail’s outputs and funding for 2014-19* (published in June 2013 and subject to public consultation until October this year) the ORR proposes that “Network Rail should provide us with its plan to maximise the reduction in the risk of accidents at level crossings in CP5 and using the ring-fenced fund, before March 2014. We expect the ring-fenced fund to be : (a) used to deliver the maximum risk reduction irrespective of geographical location (England, Scotland and Wales); (b) retained as a central fund; and (c) used across the whole level crossing portfolio. The delivery of the planned package of projects in CP5, to achieve the maximum reduction in risk of accidents at level crossings using the £67m ring-fenced fund is a regulated output.” It adds that “the risk reduction achieved by using the ring-fenced level crossing fund is in addition to reducing risk so far as is reasonably practicable through, for example, routine risk assessment and the renewals and enhancements programmes.”

33. ORR’s *Health & Safety Report 2013* notes that “Network Rail is committed to reducing level crossing risk 25% by 2019 and it is currently on-target, as measured by its own model, to deliver this. This improvement has come through strong leadership from senior managers and demonstrates what can be achieved with the right focus.” However, the report goes on to record that “we found that in the routes, some level crossing risk assessments were poor and did not identify the best risk controls. We also found that risk assessments were not always being carried out at the right stage of the renewal and enhancement process, which introduced delays and additional costs at the level crossing commissioning stage. We note that Network Rail has recently introduced route-level crossing managers and a national level crossing team, which should improve the quality of the risk assessment process.”

34. ORR has summarised its policy on level crossings in the following terms :

“Great Britain’s level crossing safety record is among the best in the world, but every incident has the potential for significant human and economic loss. Level crossings are the single biggest source of railway catastrophic risk, but overall the risks are well managed.

“We seek to influence dutyholders and others to reduce risk at Britain’s level crossings. We do this through a variety of means ranging from advice to formal enforcement action... Risk control should, where practicable, be achieved through the elimination of level crossings in favour of bridges, underpasses or diversions. Where elimination is not possible, we aim to ensure that duty holders reduce risk so far as is reasonably practicable and in accordance with the principles of protection.

“As the safety regulator for Britain’s railways, our role is to provide clear advice and enforce relevant legislation – including that which relates to level crossings. We also exercise delegated powers of the Secretary of State in making level crossing orders under the Level Crossings Act 1983.

“We believe that it is neither effective nor efficient for only rail companies to be responsible for managing safety at level crossings. Decisions about level crossings should involve rail companies, traffic authorities and other relevant organisations as early on as possible. Relevant authorities should recognise the wider benefits that safety improvements at level crossings (for example, replacing them with bridges) can bring about, particularly for road users. If wider benefits can be achieved, the appropriate funding bodies should agree on how the costs of making safety improvements will be met.

“We are also committed to helping people understand the importance of the safe use of level crossings.”

35. In furtherance of the last of these policies, ORR has published a more detailed statement of its *Policy on level crossings*, together with a guide for road (and path) users on *Using level crossings safely* and a technical manual entitled *Level Crossings: a guide for managers, designers and operators*. It is evident that enhancing crossing safety occupies a central place in ORR’s regulatory strategy.

### ***How should the legislation governing level crossings be updated?***

36. In June 2008 the two Law Commissions (i.e. for England & Wales, and for Scotland) announced that at the suggestion of ORR they would jointly be conducting a review of level crossing law. The exercise has proved complex and time-consuming, and the Commissions’ final proposals are not now due to appear until later this autumn. There has, however, been an extremely thorough process of public consultation as part of the review, to which Passenger Focus and London TravelWatch have contributed fully. We do not wish to pre-empt the outcome of the Commissions’ work, but we anticipate that it is likely to encompass recommendations relating to (inter alia) :

- the definition of different types of crossing (to which different requirements may apply)
- placing a duty upon railway operators and highway authorities to co-operate
- replacing the Level Crossings Act 1983 (and crossing orders made under it) with more flexible regulations, codes of practice and guidance made under HSWA
- disapplying (or trumping) specific provisions in private acts dating back to the 19<sup>th</sup> century
- introducing level crossing plans by agreement with highway authorities or land occupiers
- providing the Secretary of State with reserve powers where local agreement cannot be reached, e.g. to direct arrangements at a particular crossing
- creating a simpler and speedier closure procedure, covering stopping-up, replacement, planning issues, compulsory purchase (for diversions) and cost apportionment
- clarifying the application of rights of way and access law

- defining the respective enforcement roles of ORR and the Health & Safety Executive
- reviewing railway law (e.g. in relation to trespass) and sentencing guidelines
- creating a single power to authorise signs, and reviewing signage generally.

### ***How should public awareness of safety at level crossings be improved?***

37. There are a number of different target audiences, and the communications strategy must be tailored to their circumstances. They include, for example :

- people living, working or studying in the vicinity of individual crossings, who can be targeted in local campaigns by leaflet drops, canvassing, assembly kits and lesson plans for students in educational establishments, visits to youth groups, etc
- holders of private crossing rights, who can be contacted direct by local rail managers
- people in particular professions, such as farmers and agricultural workers, or bus and lorry drivers, who can be reached via trade magazines, trade associations, trade unions, etc
- the general public in the vicinity of particularly problematic crossings, who can be reached via articles or programmes in local news media and/or publicity events staged locally
- trainee drivers, who can be required to demonstrate familiarity with the relevant passages in the Highway Code
- members of “shared interest” groups, such as cyclists and ramblers, or land developers, who can be reached via specialist periodicals
- law enforcement agencies, i.e. the police and courts, and other public bodies such as highway and planning authorities, which can be approached direct or through the representative bodies and professional associations to which they and their officials belong
- crossing users, who can be targeted with improved signage
- offenders who have violated crossing signals, who can be required to attend crossing awareness courses
- the public at large, who can be alerted to crossing risk through imaginative, attention-grabbing and thought-provoking media advertising campaigns.

38. International Level Crossing Awareness Day, promoted by the International Union of Railways, provides an annual opportunity to run co-ordinated awareness-raising events across the network, to maximise the impact of their message.

### **Key recommendations**

- That level crossing safety management and improvement should become the joint responsibility of both the railway and the highway authorities (including, where relevant, private owners of rights of way), with costs shared between both partners.
- That the government should continue to specify the level of improvements in crossing safety that it wishes to see delivered, above those which are required to meet the test of reasonable practicability set by HASWA, and should fund these explicitly.
- That Network Rail should continue actively to promote and apply the results of research into improved crossing technology, and draw upon best practice from around the world.
- That Network Rail should continue (in partnership with the BTP and local authorities) to promote crossing safety awareness through information campaigns directed at key target audiences.

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