

**PROOF OF EVIDENCE OF AIDAN NELSON  
COMMUNITY SAFETY PARTNERSHIPS LTD**



**THE CHILTERN RAILWAYS (BICESTER TO OXFORD IMPROVEMENTS) ORDER**

**TRANSPORT AND WORKS ACT 1992**

**TRANSPORT AND WORKS (APPLICATIONS AND OBJECTIONS PROCEDURE)  
(ENGLAND AND WALES) RULES 2006**



**OCTOBER 1<sup>ST</sup>, 2010**

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## **Qualifications and experience of witness**

1. My name is Aidan Nelson, I am a Director of Community Safety Partnerships Ltd (CSP). The company was formed in 2006 to provide professional advice concerning the relationships between businesses; the police; and, the communities they serve. The role of the company was expanded in 2007 to address safety policy, risk reduction and further aspects of public behaviour. CSP now works with regulators and those they regulate, the police, and other public agencies and businesses in the United Kingdom and overseas. Level crossings are an area where the company has a broad capability, in particular concerning the management of risk arising at the road – rail interface.
2. My railway career began in 1972 as a British Rail management trainee. Following my training I held supervisory and management posts at an Area level from 1974 to 1978 during which time my responsibilities included the management of public and private level crossings from a railway operational perspective.
3. From 1978 to 1991 my railway experience was primarily in business management, both freight and passenger. As British Rail changed to a business led management structure, I developed an understanding of quality management principles and their application to the management of business risks, including those of a safety nature. In this context, I sat as a business representative on the British Railways Board panel that agreed the prioritised additional spend on safety related schemes following the Clapham accident.
4. In 1991 I was appointed Director of Regional Railways North East in which position I was responsible for the safe operation of the regional routes in the North East, Yorkshire and Humberside. My responsibility to manage safety risks was a key function and included risks arising at level crossings. During 1991 to 1993 I became aware of and adopted the Operation Lifesaver philosophy which was developed in the United States from 1972 onwards. Operation Lifesaver approaches level crossing safety in the context of addressing engineering (the physical configuration of the level crossing), education (of users) and enforcement (sanctions on users who misuse crossings) in parallel as, in isolation, each component will not deliver the optimal management of risk arising at level crossings. My safety tours across Regional Railways North East regularly included

inspections of level crossings during which I became familiar with the applicable standards guidance published by the Health and Safety Executive in the "blue book", subsequently, Principles and Guidance.

5. From 1993 to 1994 I was involved in the project to establish Railtrack PLC prior to taking up the position of Zone Director North East. In 1995, my geographic responsibility was extended to include the East Coast Main Line within a renamed London North Eastern zone. Between 1993 and 1996, my responsibilities included the development and application of a risk based safety management system within which the level crossings were identified as a key risk. To address this risk within the zone for which I was responsible, I continued to follow the Operation Lifesaver approach, initiating the "Red Runner" awareness and enforcement campaign to supplement a continued attention to the engineered configuration of the diverse range of level crossings for which I was responsible. It was at this time that my thinking on the Operation Lifesaver approach evolved to recognise that it should be applied within an overarching objective to eliminate level crossings where reasonably practicable.
6. From 1996 until 1998 I first established and then ran Railtrack's Line Safety Directorate which supported Railtrack PLC's core businesses and which was discrete from the industry facing Safety and Standards Directorate which hitherto had also supported Railtrack's core operational business. During this period I was responsible for the development of the company-wide Safety Plan which, as it was risk based, addressed risk arising at level crossings. In 1998 I moved to the Safety and Standards Directorate where I took on responsibility for industry-wide safety policy including safety planning, risk management and safety performance reporting. Again, management of risk at level crossings was recognised as a priority.
7. In 2000 I was appointed as an Executive Director of Railway Safety, the company established within Railtrack Group PLC as a more independent successor to the Safety and Standards Directorate. At this time my role was extended to include responsibility for national initiatives and research. Again, in each of these elements, the management of risk at level crossings was an important consideration. Railway Safety became the independent Rail Safety and Standards Board ('RSSB') from April 2003.

8. On April 1<sup>st</sup>, 2003, my responsibilities from Railway Safety moved across to the RSSB and I acquired responsibility for Railway Group Standards. Subsequently, as portfolios were rebalanced I exchanged responsibility for leadership of the railway group standards processes for leading the industry accident investigation processes. During this period as risk from signals passed at danger was reduced, the prominence of risk arising at level crossings increased. I was instrumental in establishing a national level safety group to help drive forward the management of risk arising at level crossings.
9. Since leaving RSSB in 2007, I have worked as a Director of CSP on a range of assignments relating to safety policy, risk reduction and public behaviour. Specific projects relating to level crossings include the provision of training for the Railway Safety Commission in Ireland and input to a rail operator led level crossing risk reduction project in Australia. I have also provided more general advice to railway safety regulators in the United States and Australia on risk management principles, including those applicable to level crossings.
10. Internationally, I was Chairman of the international and national organising committees for the International Level Crossing Symposium held in Sheffield, South Yorkshire, in 1994 and have remained a member of the International Committee involved in organising subsequent symposia through to today. Following the symposium held in Sheffield I founded the European Level Crossing Research Forum (now the European Level Crossing Forum. In addition I was, until 2007, a member of the International Union of Railways (UIC) Safety Platform and Chair of the Platform's working group addressing operational risk issues, including those pertaining to level crossings. For ten years I have been and remain an overseas member of the National Academy of Science's Transportation Research Board Committee dealing with highway – rail grade crossing safety in the United States. I am active as a speaker on level crossing issues in the United Kingdom and elsewhere. Since December 2008 I have published and edited LXinfo, an e-magazine with an international circulation of some 2,000 readers.

## Scope of Evidence

11. My evidence covers:
  - 11.1. National policy approaches to the management of risk arising at level crossings
  - 11.2. The role of the safety regulator (Office of Rail Regulation)
  - 11.3. The role of the rail infrastructure manager (Network Rail) and that of the industry standards body (The Rail Safety and Standards Board)
  - 11.4. The role of other parties with a material interest in securing the safe operation of level crossings
  - 11.5. The application of safety policy regarding the level crossings on the rail corridor linking Bicester with Oxford and the proposed closure of all but one of these as part of the Order scheme providing for the re-construction and capacity upgrade of this route promoted by Chiltern Railways
  
12. The Secretary of State for Transport (the Secretary of State) issued a Statement of Matters (X/4) for the Transport and Works Act Inquiry on August 25<sup>th</sup>, 2010. In this Proof of Evidence, I address, in particular, the following matters from that Statement of Matters, in whole or in part:
  - 12.1. The likely impacts of the scheme on users of the rights of way network, including:
    - Matter no. 6. (b):

The operational effects of the scheme on road traffic, including the operational effects of increased closure times at the London Road level crossing in Bicester in so far as matters of safety are concerned
  
    - Matter no. 6. (c):

The effects of the proposed permanent closure of road, footpath, bridleway and accommodation level crossings of the Bicester to Oxford railway line with particular regard to matters relating to safety.
  
13. To put the national policy approach into context, safety performance at level crossings in Great Britain is considered within the context of

the wider safety performance on Britain's railways and then, in more detail, as a sub-set of safety performance data correct to March 31<sup>st</sup>, 2010.

14. My evidence considers the over-riding intent of Chiltern Railway's policy to create a railway between Bicester and Oxford in modern form and the implications of this intent for existing level crossings that were first provided in the middle of the nineteenth century. This consideration takes into account national policy that there should be no new level crossings provided over railways in other than exceptional circumstances. This policy is applicable to both new railways and the extant network.
15. My evidence sets out information on the particular types of level crossing found on the Bicester to Oxford route and then considers issues arising at individual crossings on the route, including objections to the Order scheme which have been lodged, principally in relation to the closure of level crossings and the extinguishing of rights of way over crossings and their diversion. This consideration of individual level crossings takes as its starting point the closures proposed by Chiltern Railways and does not address options considered in the development of the Order scheme. These are addressed in Stephen Barker's proof of evidence (**CRCL/P/6/A**).

#### **Initial provision of level crossings between Bicester and Oxford**

16. Level crossings on the railway line linking Bicester with Oxford were constructed in accordance with powers conferred by the Oxford & Bletchley Junction Railway Act of 1846 (**CD/5.1**), as modified by the Buckinghamshire Railway Act of 1847 (**CD/5.3**). The railway line was completed from end-to-end by 1851. The timing of this is of note as, at that time, there was no expectation that railways would grade separate intersections with pre-existing rights of way.
17. Subsequently, railway responsibility for the level crossings on the Bicester to Oxford line has passed from the London North Western Railway, the London Midland and Scottish Railway, the British Transport Commission / British Railways Board, Railtrack PLC and to Network Rail Infrastructure Ltd (Network Rail) where it currently resides.
18. Private rights of way have similarly been passed onto the successors in title of those who initially acquired them when the railway was

built. It should be noted that the rights of way over some level crossings are multiple, for example, private vehicular rights and public footpath and bridleway rights being applicable to the same right of way.

### **Safety regulation**

19. The safety regulator for all railway safety matters in Great Britain is the Office of Rail Regulation (ORR) into which Her Majesty's Railway Inspectorate was incorporated consequent upon the transfer of safety regulatory responsibility from the Health and Safety Executive (HSE) in 1996.
20. The ORR is now responsible for publication of Railway Safety Principles and Guidance. The current edition pertaining to level crossings is: Part 2E, Guidance on Level Crossings, HSE Books, 1996 (**CD/3.1**) The ORR guidance is not mandatory and the rail infrastructure manager is free to adopt alternative safety solutions to control risk so far as is reasonably practicable. The ORR has recently completed (July 2010) a public consultation exercise on a successor document entitled "Managing level crossings: Guide for managers, designers and operators" (**CD/3.33**). The results of the ORR consultation exercise are not yet known and neither is the final form in which this guidance will be published.
21. In parallel, ORR has consulted on a new guidance document, "Using Level Crossings Safely" (**CD/3.34**), aimed at the users of level crossings. The results of the ORR consultation exercise are not yet known and neither is the final form in which this guidance will be published.
22. The ORR is responsible for ensuring that rail infrastructure managers and train operators comply with the law as it relates to railway safety. Principally, this is in respect of the requirement to reduce risk so far as is reasonably practicable (SFAIRP) derived from the Health and Safety at Work Etc Act 1974 and legislation specific to level crossings which has evolved over more than a century and a half. In addition to the railway parties, legislation has also placed duties in respect of level crossings on highway and traffic authorities, employers, and road and other level crossing users.
23. It is ORR that manages the processes that lead to the Secretary of State for Transport signing off Level Crossing Orders which set out

the protection arrangements to be applied and which may vary the requirements for protection set out in an earlier Act of Parliament. These orders are made with the authority of the Level Crossing Act 1993 as amended by the Road Safety Act 2006. Level Crossing Orders specify “the new or updated arrangements at individual crossings to which the public has access” (Guide to level crossing submissions, issue 2, section 1.1. ORR, January 2008).

24. The ORR policy on level crossings is set out in a document entitled “Policy on Level Crossings” and published in February 2007 (**CD/3.18**) which says that level crossings on the national rail network “present the biggest risk of train accidents that could kill passengers” (**CD/3.18 Introduction**). The ORR policy recognises that level crossings pose “particular problems for rail companies because they cannot control the actions of drivers and pedestrians at level crossings” (**CD/3.18: We recognise the following**). The policy further recognises that “rail companies, highway authorities and others need to co-operate to manage safety at crossings” (**CD/3.18: We recognise the following**)
25. The ORR policy is explicit that “except in exceptional circumstances, there should be no new level crossings on any railway” (**CD/3.18: What we believe**). Importantly, the policy says that “it is not effective or efficient for only rail companies to be responsible for managing safety at level crossings” (**CD/3.18: What we believe**). The ORR policy is that “decisions about level crossings must involve rail companies, highway authorities and other relevant organisations as early on as possible” (**CD/3.18: What we believe**).
26. The ORR policy on level crossings further states that “everyone whose actions may affect level crossings must be more aware of what affects safety at level crossings” (**CD/3.18: What we believe**). The policy makes clear that “relevant authorities must 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 contribute to the cost of safety improvements” (**CD/3.18: What we believe**).
27. In so far as rail companies, including Chiltern Railways, are concerned, but principally railway infrastructure managers, the ORR policy on level crossings includes an expectation that they will,

among other things: "take all reasonable opportunities to remove or replace existing level crossings or make them safer" (**CD/3.18: 'What we expect from rail companies'**) This expectation is qualified by the need to "take account of the effect safety measures have on those who use level crossings, and those who live or work in properties alongside them, when considering new safety measures or changes to existing arrangements" (**CD/3.18: 'What we expect from rail companies'**)

### **The Rail Safety and Standards Board (RSSB)**

28. The RSSB is the rail industry's independent safety body which is, so far as level crossings are concerned, responsible for setting Railway Group Standards, the industry's safety risk model and safety performance reporting. In addition the RSSB runs a research programme on behalf of the industry. An important output of this programme is the All Level Crossing Risk Model (ALCRM) adopted by Network Rail to support them in managing risk arising at level crossings. A further service provided by RSSB is convening the national Road – Rail Interface Safety Group.
29. The Railway Group Standard applicable to level crossings is "GKRT0192 issue 1, Level Crossing Interface Requirements" published in February 2010 (**CD/3.28**). This standard is supported by guidance contained within "GKGN0692 issue 1 Guidance on Level Crossing Interface Requirements" (**CD/3.27**) also published in February 2010. The Railway Group Standard addresses "interface" requirements and is underpinned by Network Rail's company standards.
30. The RSSB research brief supporting the research report "Attitudes to, processes and funding for crossing closures" (**CRCL/P/7/B**) published in 2006 states that "Level crossings bring no benefits to the railways. They bring several disadvantages, for example they are hazardous to train-borne passengers...For this reason the first and best solution to the problems posed by level crossings is to close them" (**CRCL/P/7/B Research Brief, overview**).
31. The rail industry approach to safety decision making is set out in the RSSB publication "Taking Safe Decisions" (**CRCL/P/7/B**) which states that, in the GB railway industry, duty holder decisions which

impact on safety are taken in order to meet legal requirements and because they are sensible from a commercial perspective. In so far as the former is concerned societal concern about risk impacts on government decision making. The document states that societal concern should not be taken into account by duty holders when deciding whether a measure is necessary to ensure safety so far as is reasonably practicable (SFAIRP). However, the impact of societal concern on a company's reputation might mean that the company takes account of it optionally for business reasons. This can be seen as a factor in the approach adopted by Chiltern Rail in respect of the proposed closure of level crossings in the interests of maximising the opportunity presented by the Order Scheme to create a safe railway between Bicester and Oxford.

### **Network Rail**

32. As the national railway infrastructure manager the lead responsibility for level crossings, in so far as railway interests are concerned, sits with Network Rail. The arrangements put in place by Network Rail are designed to comply with the law as it relates to the management and operation of the railway infrastructure, including level crossings, for which it is responsible.
33. Network Rail's policy in respect of level crossings is set out in a document titled "Our Approach to Managing Level Crossing Safety" (**CRCL/P/7/B**). The Network Rail Policy, which is aligned with that of the ORR, states that "only in exceptional circumstances shall we [Network Rail] permit new crossings to be introduced onto the network" Importantly, Network Rail's policy says that where reasonably practicable we [Network Rail] will seek to close and/or divert crossings or enhance their safety through the provision of improved safety features/ equipment"
34. The Network Rail policy states that the company "will regularly review risk in light of proposed changes either to railway operations, such as increased train frequency, or to the user population". This commitment is underpinned by Network Rail saying that it "will use tools such as the All Level Crossing Risk Model to inform and support us in our decision making process".
35. Network Rail has adopted company standards setting out the detail of the company's approach to the management of risk, including that

arising at level crossings. These company standards sit within the context of Railway Group Standards published by the Rail Safety and Standards Board.

36. In so far as the elimination of level crossings is concerned, Network Rail has a programme in place to reduce the number of level crossings on its controlled infrastructure by 383 in fiscal year 2009-10. The scale of level crossing closures in recent years can be seen when comparing figures for 2002-3 when there were 8,188 on Network Rail controlled infrastructure with that for December 31<sup>st</sup>, 2009 when there were 6,592. This latter number excludes level crossings on closed lines or which are otherwise out of use.

### **All Level Crossing Risk Model**

37. The All Level Crossing Risk Model (ALCRM) is an important tool underpinned by the application of managerial judgment when determining the actions to be taken in respect of individual level crossings. ALCRM has been used to look at the level of risk at level crossings between Bicester and Oxford on an "as is today" basis and then when the proposed Chiltern Railways service (Phase One) is operating and also when additional East – West rail services (Phase Two) are added should the line between Bicester and Bletchley be reopened. This approach enables the changes in risk associated with the Phase One and Phase Two timetables to be considered along with changes in infrastructure configuration and line speed required for operation of the planned timetables.
38. Application of ALCRM to level crossings between Bicester and Oxford has been in accordance with the User Guide published by Network Rail on March 25<sup>th</sup>, 2008. The introduction to the User Guide states that the ALCRM application is to be "used to model the predicted risk at all types of level crossings" (**Appendix CRCL/P/7/B**), and that it will "support managers in their management of the risk at level crossings and in any application for funding to manage risks so far as is reasonably practicable" (**Appendix CRCL/P/7/B**).
39. Before the ALCRM is used to assess safety risk at a particular level crossing, it is necessary to gather data from a site visit and record the presence of observable features. ALCRM is used only by trained Network Rail staff to assess risk and sign off completed assessments.

40. The ALCRM application requires data to be gathered in a standard format appropriate to the type of level crossing at which the safety risk is to be assessed. In addition to the physical characteristics of the crossing and other data concerning the context and use of the crossing. The data collection forms are also used to record the train service and outputs of a census or estimate of use by vehicle type and use by pedestrians, cyclists and those riding horses.
41. The outputs of an ALCRM assessment summarises the user of the crossing in terms of trains and as applicable vehicular and pedestrian traffic; key risk drivers – e.g. low sighting time, heavy user and infrequent trains.
42. ALCRM outputs relating to safety risk comprise both an alphabetic and numeric component. The alphabetic component addresses individual risk and the numeric component relates to collective risk. These values range from A to M and 1 to 13. A and 1 are the highest values and M and 13 the lowest. These rankings represent the range of risk across all types of crossing to be found on Network Rail's controlled infrastructure
43. ALCRM provides for options for managing the identified risk to be entered and used in the conduct of cost-benefit analysis. This analysis utilises a value of preventing a fatality as a surrogate for the harm that arises when people are killed or injured. This analysis facilitates management decision making as to the actions to be taken at an individual level crossing. Network Rail specifically reviews options when a score of A, B, C and / or 1, 2 3 results from an ALCRM assessment.
44. Use of ALCRM when proposing construction of a new railway would not be where the project embraced the national policy commitment that there should be no new level crossings over railways. The Order Scheme to, in effect, rebuild the Oxford to Bicester line in modern form and to increase its capacity, includes the intent, so far as is reasonably practicable, to eliminate all but one of the level crossings on the line. Nonetheless, the ALCRM has been used to estimate the risk effect on level crossings of operating the route at the proposed higher speeds with a substantially increased level of train service. Generally, the ALCRM risk ranking outputs show that leaving the

existing crossings in situ increases the level of risk which is unacceptable when applied to the re-construction of the railway in modern form.

45. With regard to Bicester's London Road level crossing, which it is not feasible to close, ALCRM has been used to inform the decision on the controls that will need to be put in place to control risk so far as is reasonably practicable. The retention of the London Road level crossing cuts across the intent to eliminate all level crossings; but it is preserved only because the costs of altering the highway infrastructure in Bicester to allow closure are grossly disproportionate.

### **Safety performance at level crossings in Great Britain**

46. Although safety at level crossings in Great Britain is good when compared with other European systems and those elsewhere in the developed world, level crossings do, as ORR says in its level crossing policy of February 2007 (**CD/3.18**) "present the biggest risk of train accidents that could kill passengers" (**CD/3.18, introduction**). This point is amplified in the RSSB produced Annual Safety Performance Report (ASPR) for 2009/10 (**CD3.35**) which states: "Overall, the greatest risk arises from collisions with road vehicles at level crossings" (**CD/3.35 Section 82, page 134**). This is mostly caused by crossing users' behaviour and principally affects members of the public rather than train occupants.
47. However, the wider potential impact of a collision on a level crossing should not be overlooked. Accidents at Hixon (January 6<sup>th</sup>, 1968), Lockington (July 29<sup>th</sup>, 1986), Great Heck (February 28<sup>th</sup>, 2001) and Ufton (November 6<sup>th</sup>, 2004) illustrate the potential for multi-fatality train accidents arising from a train colliding with a road vehicle.
48. More recently the collision with a sewage tanker on the Sewage Works Lane user worked occupation crossing in Little Cornard, Suffolk on August 17<sup>th</sup>, 2010, resulted in injuries to all 21 persons on the train. One person was critically injured. This collision caused the general secretaries of two of the trades unions to which many railways belong to publicly reiterate the need to eliminate level crossings. This accident is subject to independent investigation by the Rail Accident Investigation Branch.

49. The RSSB ASPR for 2009/10 records that the total level of harm at level crossings in 2009/10 was similar to both the level seen the previous year and to the average over the previous nine years. This report details that in the nine years there were 102 fatalities on level crossings on Network Rail controlled infrastructure, excluding suicides and suspected suicides. This figure comprises 71 pedestrians, 25 road vehicle occupants and the six train occupants who died in the collision at Ufton in 2004.
50. The essentially constant level of harm arising from accidents at level crossings needs to be compared and contrasted with the overall level of train accident risk as recorded by the RSSB Precursor Indicator Model (PIM) which has fallen by 60% over the nine years analysis contained within the RSSB ASPR 2009/10. Overall the risk to passengers in train accidents is now dominated by the risks arising from collisions at level crossings. In the past decade more passengers have died as a result of collisions with road vehicles than any other cause of train accident.
51. The prevailing level of the risk of a fatality on Britain's national rail network is dominated by issues of public behaviour. The number of accidental deaths on level crossings is only exceeded by suicides and suspected suicides and trespasser fatalities. It should, however, be noted that suicide, suspected suicide and trespasser deaths are rarely associated with physical harm to those travelling by train. The exception is where a road vehicle is associated with suicide as was the case at Ufton on November 6<sup>th</sup>, 2004.
52. Issues of public behaviour are not within the direct control of the railway. However, despite this lack of direct control, the rail industry seeks to address the impact of these behaviours by a combination of engineered solutions, education and enforcement activities.
53. RSSB's ASPR 2009/10 (**CD/3.35**) records that the annual number of fatalities at level crossings (excluding suicides) since 2001/02 ranges between seven and 16 with the 12 recorded in 2009/10 being close to the mean of 11.3 fatalities.
54. Fatalities and injuries can arise at all types of level crossing. However, risk is not uniform across the population of level crossings

with active open (i.e. lights and audible alarms but no barriers) having a disproportionate concentration of risk. Another category of crossing having a disproportionate concentration of risk are those user worked crossings equipped with miniature warning lights and either gates or barriers. This type of crossing is generally associated with private crossings. These level crossings can, when gates or barriers are not closed after use, be seen by users as a form of active open crossing.

55. Looking at all 102 level crossing fatalities (excluding suicides and suspected suicides) occurring between April 1<sup>st</sup>, 2001 and March 31<sup>st</sup>, 2010, the RSSB ASPR 2009/10 shows that the largest number, 38, have occurred on footpath level crossings, with user worked crossings contributing a further 16. This latter figure rises to 20 when user worked crossings equipped with miniature warning lights are included. Additionally, the number of suicides and suicides at level crossings needs to be considered with the RSSB ASPR 2009/10 recording that 181 have occurred between April 1<sup>st</sup>, 2001 and March 31<sup>st</sup>, 2010.
56. Near misses with road vehicles and pedestrians at level crossings are a further, necessarily to an extent subjective, indication that there is a substantial underlying level of user misuse. The RSSB ASPR 2009/10 states that "there appears to be a long-term downward trend in near misses with motor vehicles. After climbing in 2008/09, the number of near miss reports dropped again this year. The RSSB ASPR 2009/10 also states that "the majority of near misses occur on user worked crossings (with and without telephones)" (**CD/3.35** section 9.28, page 168). RSSB further estimates "that around one in five near misses is with a farm vehicle" (**CD/3.35, section 9.28, page 168**). According to RSSB, "There is clear seasonality in near miss reporting, with a higher incidence in spring and summer. This may be due to heavier traffic (particularly on farm crossings around the times of hay-making and harvest), and train drivers may be more likely to identify that a near miss has occurred in daylight hours" (**CD/3.35, section 9.28, page 168**).
57. RSSB data from April 1<sup>st</sup>, 2001 to March 31<sup>st</sup>, 2010 contained within the ASPR 2009/10 shows that 52% of near misses occurred on user worked crossings (both with and without telephones). The same data set shows that 3% of near misses with road vehicles were at

miniature warning light equipped user worked crossings which are generally associated with private rather than public vehicular rights. In so far as pedestrians and cyclists are concerned the same source records that 29% of near misses occur on footpath crossings, with a further 30% at user worked crossings (both with and without telephones). Miniature warning light equipped user worked crossings account for a further 4% of such near misses. In total the number of reported near misses with road vehicles on level crossing is running at a level of around 140 per annum. For pedestrians the equivalent number is roundly 230.

58. Incidents involving road vehicles, including farm equipment; and large animals (Polmont, near Falkirk, July 30<sup>th</sup>, 1984) can result in derailment, secondary collision with another train (Great Heck, February 28<sup>th</sup>, 2001) and damage to the train with consequent risk to train crew and passengers, as well as a high risk of fatality or injury for the crossing users. Additionally these accidents can result in significant damage to rail infrastructure and property of third parties. Incidents involving pedestrians are unlikely to result in a train accident, but are very likely to kill or seriously injure the crossing user. Crossing users particularly at risk include the young, the elderly and infirm, dog walkers, farmers and migrant workers who may not understand the warning signs.
59. Over 90% of level crossing risk in the past decade has resulted from user misuse in the form of errors, negligence or wilful abuse. In its document "Our Approach to Managing Level Crossing Safety" (**CRCL/P/7/B**) Network Rail gives typical examples of misuse which include incorrect knowledge of operation, misjudging the time it takes for a train to reach the crossing, people driving around barriers, people crossing when the lights are red and people leaving manually-worked gates open after use.
60. Details of incidents concerning misuse of level crossings is contained within the rail industry's Safety Management Information System (SMIS). RSSB has extracted SMIS data relating to misuse of the level crossings between Bicester and Oxford. Details of the incidents concerned are detailed in the sections of my later evidence concerning individual level crossings. I consider that the incidents recorded within SMIS under represent the true levels of misuse. In

particular, the issue of gates left open at user worked crossings is an area where under reporting is known to occur.

61. Each SMIS incident report of a “near miss”, or perhaps more accurately a “near hit” has an emotional consequence on train drivers who have considered the potential for a collision in which they believe they may have been physically or psychologically harmed.

### **Types of level crossing found between Bicester and Oxford**

62. Level crossings are often referred to as either “active” – where the crossing controls provided by the railway indicate when a user must stop and when it is safe to proceed; or “passive” where the user must take the decision to cross based on visual and aural indications that trains are or are not in the vicinity. At some passive level crossings a telephone may be provided to allow users to speak to the signaller controlling the stretch of line on which the level crossing is provided to enquire if it is safe to cross.



Figure One:  
Generic image of a barrier equipped level crossing controlled by railway staff.  
N.B. This image is not of a level crossing on the line from Bicester to Oxford

63. The Bicester London Road public level crossing is at present operated manually by the crew of a train wishing to proceed over it. The crossing controls comprise lights, audible alarms and barriers completely closing off the road over the railway to vehicular and pedestrian traffic (figure one above). At this level crossing it is the responsibility of the train crew to observe that the crossing is clear before the train proceeds. Here the train speed is determined by the fact that trains always stop short of the crossing to allow a member of the train crew to initiate the sequence of controls which closes the crossing to vehicular and pedestrian traffic.

64. Active Open Crossings Locally Monitored (AOCL) level crossings as at Langford Lane and Oddington are found on public highways and have lights and audible warnings for the control of vehicular and pedestrian traffic but neither gates or barriers to close off all or part of the highway (Figure two below). AOCL crossings generally pose a higher risk to users than crossings at which either half or full barriers are concerned. They are only found on minor roads and where train speed is less than 90 kilometres per hour. The crossing equipment is normally initiated automatically by an approaching train. The operation of the crossing equipment and the absence of obstruction on the crossing is monitored by the driver of an approaching train. Train drivers are required to stop their trains short of the crossing unless they have received an indication that the crossing equipment is functioning correctly and have observed that the crossing is clear.



Figure Two:  
Generic image of an active open crossing of the AOCL type

N.B. This image is not of a level crossing on the line from Bicester to Oxford

65. On December 3<sup>rd</sup>, 2009 the ORR published a position statement concerning AOCL level crossings (**CD3.25**). This position paper was issued in light of a triple fatality accident on an AOCL crossing at Halkirk, Caithness, Scotland, on September 29<sup>th</sup>, 2009 and the safety concerns raised by this collision and others at this type of level crossing. At the time ORR published its position statement there were 128 AOCL type crossings across Britain. As a result ORR developed a three-phase action plan. The Halkirk accident is subject to an on-going investigation by the independent accident investigation body, The Rail Accident Investigation Branch (RAIB), in its statement of September 29<sup>th</sup>, 2009 announcing this investigation, RAIB set out that, *"this type of crossing [AOCL] represents approximately two per cent of Network Rail's population of level crossings, but in the last ten years thirty one per cent of level crossing collisions have taken place*

*at them. Accordingly, the RAIB's investigation will review the more general risk from this type of crossing as well as the particular circumstances at Halkirk".*

66. In phase one of the investigation ORR asked Network Rail to review line speed at AOCLs, to ensure that train speeds do not exceed recognised industry guidelines. ORR also stated that they had made it clear to Network Rail that ORR encourages innovative solutions to improving level crossing safety. ORR further stated that they will complete their validation, as appropriate, of actions taken in respect of the RAIB reports into a near-miss incident at Llanbadarn AOCL and a fatality at Wraysholme AOCL.
67. Phase two work set out in the position statement involved ORR asking Network Rail to develop a prioritised programme for upgrading AOCLs, involving local communities and highway authorities in the prioritisation process. Other work involved a request that Network Rail replace all remaining filament "wig-wag" lamps at AOCLs with LED light units. Also, ORR says it has proposed that whenever possible or appropriate Network Rail will upgrade AOCLs that are scheduled for like-for-like renewal to barrier crossings. Finally ORR said that it will complete the revision of its guidance on level crossings (RSPG2E) **(CD/3.1)** The consultation draft **(CD/3.33)** was published in April 2010, with consultation closing three months later.
68. In phase three, the ORR position statement said that it would ensure that Network Rail's upgrade programme is delivered. ORR stated that it will inspect AOCLs (including those on minor / heritage railways) in the next year's (2010 - 2011) work plan, to assure itself of the robustness of risk management processes and compliance with the relevant Orders. Also, ORR said that it would put forward a submission to the Law Commissions' review of level crossings law that encourages the need to consider protective arrangements at AOCLs. The Law Commissions joint public consultation addressing legislative options is open until November 30<sup>th</sup>, 2010
69. A miniature Warning Light (MWL) equipped level crossing is installed on a public road, Mill Lane, in Islip. At this level crossing a motorist wishing to take a vehicle across the line must cross the railway five times if he or she is to use the crossing as intended. Before each traverse of the line the motorist must ascertain if it is safe to cross

from the MWL which exhibits a green light when it is safe to cross and a red light when it is not. The motorist first opens the near side gate and proceeds to cross the railway on foot to open the far side gate. Then the motorist returns on foot before driving across the railway. Next the motorist dismounts from the vehicle and crosses on foot to close what has become the far side gate after which the railway is again crossed on foot to close what has become the near side gate. In so far as pedestrians are concerned, wicket gates are provided and pedestrians determine whether it is safe to cross by reference to the MWLs. This type of crossing is illustrated in figure three below.



Figure Three:  
Generic image of a miniature warning light equipped level crossing with gates  
N.B. This image is not of a level crossing on the line from Bicester to Oxford

70. MWL equipped level crossings are no longer installed at public highway level crossings and are generally only found at level crossings where there are private vehicular rights. This type of level crossing also exhibits a disproportionate share of the risk to users as when the gates or barriers are left open MWL equipped crossings are analogous to other types of active open crossings.
71. All other level crossings between Bicester and Oxford over which there is a vehicular right of way are private. These level crossings are protected by gates normally kept closed across the railway and user worked. As at MWL type crossings, safe use require someone wishing to take a vehicle across the railway to cross the railway five times, four times on foot and once in the vehicle. On each occasion it is incumbent on the person wishing to take a vehicle across to observe whether it is safe so to do. All users of this type of crossing are required to close the gates across the railway after use. Gates left open at user worked crossings is an issue that Network Rail has to address at many locations nationally. If the issue is not addressed the risk is that users will treat the level crossing as an open level

crossing. When this occurs, the risk is that users do not take sufficient care to observe whether or not it is safe to cross.

72. In some cases a telephone is provided at user worked crossings to enable those intending to cross the railway to speak to the signaller controlling the stretch of railway on which the crossing is located to seek permission to cross (figure four below). The granting of permission to cross is predicated on the extent to which the controlling signaller can determine the position of a train. Where a line is not continuously track circuited the signaller will not give permission until it is known that the line is clear. As this may involve a wait of, for example, ten minutes, there is a temptation on the part of some users to not use the telephone and to rely on what they can see and hear to indicate the presence of a train. Other users who do not use the telephone may take a decision to cross by reference to a known pattern of train service. Each of these irregular approaches is less safe than obtaining permission to cross from the signaller.



Figure Four:  
Generic image of a user worked level crossing with telephone  
N.B. This image is not of a level crossing on the line from Bicester to Oxford

73. Signs posted at user worked level crossings will set out when the telephone must be used. Normally this is when vehicles and livestock are to be taken across the railway. However, when indicated, there may also be a requirement for pedestrians to obtain permission to cross.
74. Private level crossings may be used by the party owning or occupying property accessed via the private level crossing as provided for in the legislation enabling construction of the line. These rights transfer to the heirs of the party originally owning the right of way across the railway and also with other changes in the ownership of the land to which the private rights relate. These rights may be extended by the authorised user to include resident family members, employees and

authorised visitors. Where the right of use of the crossing is extended by the permission of the authorised user, they acquire the same obligations as are incumbent on the authorised user who is responsible for ensuring that the level crossing is used correctly.

75. There are two categories of user worked crossings over which there are private rights. The first of these is an "occupation crossing" which was provided where a private road or track existed before the railway was constructed and was severed by its construction save that a user worked crossing was provided for the benefit of owners of the land which is served by the private occupation road. There is, however, no obligation on Network Rail to allow use of its private level crossings by the general public or to give access to other lands which were not previously served by a crossing. Network Rail and its contractors are also entitled to use a landowners' private road leading up to an occupation crossing to gain access to railway property.
76. The second type is what is known as an "accommodation crossing" which were provided to maintain access between lands severed by the railway where a roadway or track did not previously exist. The most common accommodation crossing is the standard "field to field" crossing. There is no obligation on Network Rail to allow use of these level crossings to give access to other lands which were not previously served by a crossing. Network Rail's duty to provide and maintain an accommodation level crossing will also cease when the land on either side of the railway is sold into separate ownerships (*Midland Railway Company v Gribble* [1895] 2 Ch 827).
77. In some cases these user worked crossings may also provide a public right of way across the railway for those using a footpath or bridleway on either side of the railway. Users are required to follow instructions posted at signs placed at the level crossing. Where a telephone is provided a person with a horse will be required to obtain permission to cross. At some user worked level crossings equipped with telephones, pedestrians may also be required to obtain permission to cross the railway.
78. Footpath and bridleway crossings are generally to be found on paths and tracks which existed before the construction of the railway. These may be private crossings or more usually public. Footpaths are protected by a self-closing wicket gate or a stile on each side of the

railway. It is not acceptable for there to be a wicket gate on one side of the railway and a stile on the other. Where it is a bridleway, there will be a self-closing wicket gate on each side of the railway which can be navigated by a mounted rider. In some circumstances there may be a requirement for a rider to dismount before crossing. The same may be required of a cyclist using a bridleway. Generically, a few footpath and bridleway level crossings may be protected by MWLs. Whistle board may be provided on the approach to level crossings where sighting time is less than an allowance for decision time and crossing time. However, it should be noted that whistle boards can be the source of environmental nuisance.

### **The railway in modern form**

79. Chiltern Railway's policy on level crossings, as provided for in the Order Scheme, is to seek the closure, where practicable, of each of the 38 existing level crossing on the Bicester – Oxford line and, where appropriate, alternative provision; and to avoid the creation of any new level crossings on the existing, new and reinstated sections of railway. This policy constitutes good practice as it will eliminate to all intents and purposes risk associated with level crossings on the line. The single exception to the policy is at the London Road level crossing in Bicester where there is no practicable alternative to retention of this level crossing other than at a cost which is grossly disproportionate to the risks involved. At this location the risk of crossing the line will be reduced so far as is reasonably practicable by way of upgraded equipment.
  
80. Chiltern Railway's policy of level crossing closures as part of reconstructing the railway between Oxford and Bicester in modern form extends to removing the existing level crossings because, in terms of track systems and signalling and control systems, the railway will be new. Therefore it is in these terms analogous with the approach that would be required were it a wholly new railway where national policy would not permit there to be any level crossings in other than exceptional circumstances. A similar policy approach was adopted in respect of level crossings on recently re-constructed sections of the West Coast Main Line (WCML) which were eliminated. Similarly, there are no level crossings on the new high-speed line linking London, St Pancras International with the Channel Tunnel.

81. The national policy, established precedent (WCML route modernisation and the Channel Tunnel Rail Link) and Chiltern Railway's approach all set out to eliminate the risk that can be brought by the highway or private road to the railway and those using it and crossing it. This is good practice that underpins the merits of the Order Scheme in safety terms whilst, so far as is reasonably practicable, providing for the replacement of those level crossings for which there is a continuing need with alternative grade separated routes across the railway.
82. Considering the scale of reconstruction and the nature of the railway that will be provided between Oxford and Bicester, I am clear that to all intents and purposes the Order Scheme should be treated in policy terms as if it were a new railway in so far as the inappropriateness of level crossings is concerned. However, it is important to demonstrate crossing by crossing that there are either no exceptional circumstances for retention of the at-grade crossing or where such circumstances might apply.
83. The Order Scheme also demonstrates that the ORR policy, as it applies to the duties of railway companies has been complied with. The ORR expectation is that railway companies should "take all reasonable opportunities to remove or replace existing level crossings" (**CD3.18, 'What we expect from rail companies'**). The reconstruction of the existing railway under the authority of an Order under the Transport and Works Act is most definitely, in my view, a "reasonable opportunity" to secure the closure of level crossings. The approach of Chiltern Railway is, so far as I can determine, entirely compatible with the regulatory policy and Network Rail's approach to managing risk arising at level crossings. The reconstruction of the railway presents an opportunity to make a step change with regard to the elimination of level crossings in a way that would not normally be possible, notwithstanding Network Rail's programme to reduce the number of private level crossings over their controlled infrastructure.
84. The approach being taken in the Order Scheme is, more generally, compatible with the statutory requirement that all intolerable risks have been eliminated and that all remaining risks have been reduced to as low as reasonably practicable. Given the step change opportunity offered by the reconstruction of the Oxford to Bicester railway in modern form, the meeting of this requirement further

justifies the decision to close as many level crossings as practicable; and, where reasonably practicable and necessary to provide additional alternative means of crossing the railway.

85. While safety considerations are a primary reason for removing level crossings, there are also train performance benefits; for example, by avoiding a speed restriction necessary to maintain sighting distances. Likewise there are environmental benefits arising from the elimination of train horn noise associated with warning users of level crossings of an approaching train.

### **Individual level crossings between Bicester and Oxford**

86. The Secretary of State's Statement of Matters addresses at paragraph 6 (c) the likely impacts of the scheme on users of the rights of way network, including the effects of the proposed permanent closure of road, footpath, bridleway and accommodation level crossings of the Bicester to Oxford railway line. These are, addressed crossing by crossing in the evidence which follows from paragraph 90 below and in an appendix to this document (**CRCL/P/7/B**).
87. Where there are particular issues relating to the proposals for the elimination or upgrade of level crossings between Bicester and Oxford, and which are subject of objection, these are addressed in the body of this document at paragraph 90 et seq.
88. For all other level crossing the following information is provided within an appendix to this document (**CRCL/P/7/B**):
- 88.1. Location of level crossing by Ordnance Survey grid reference;
  - 88.2. The present status of the level crossing and recorded safety incident history provided by RSSB;
  - 83.3. Action proposed by the Order Scheme;
  - 88.4. Risk information provided by Chiltern Railways and Network Rail;

88.5. Details of objections, if any; and

88.6. Discussion of the above and conclusion.

89. In the following sections, I address the operational effects of the scheme on road traffic, including the effects of increased closure times at the crossing in so far as they relate to safety which is referenced in The Secretary of State's Statement of Matters at paragraph 6(b).

### **Bicester, London Road**

90. Bicester, London Road level crossing (Grid reference: SP 58747 22027) is currently equipped with train crew operated lights, audible alert and full-width barriers. Chiltern Railways are proposing that this level crossing is upgraded to manually controlled barriers with CCTV surveillance. Manually controlled crossings with CCTV are a tried and tested configuration with a good record relative to automatic half-barrier crossings in so far as safety is concerned.

91. Network Rail has assessed the user of this crossing to comprise 7,290 road vehicles and 567 pedestrians and cyclists per day. These flows, when taken with a train service of four per day, a line speed of 40 mph and the urban context within which this level crossing is situated, result in an ALCRM risk ranking of K6. Key risk drivers identified by Network Rail are currently sun glare, road visibility, infrequent trains, levels of road user and pedestrian traffic, proximity to station and the approaches to the crossing.

92. Upgrading the crossing as proposed in the Order Scheme: doubling the railway over the crossing, raising line speed to 50 mph and increasing the train service to 99 per day with the same levels of road user, changes the ALCRM risk ranking to G3 and substitutes the high number of trains as a risk driver for the low frequency in the base case. Allowing for a further increase in the train service over the London Road level crossing consequent upon the East – West Rail Link and raising line speed to 100 mph does not change the ALCRM risk ranking from G3. At this point the key risk drivers are the same as when the Phase 1 Chiltern Railways service is introduced.

93. The increased frequency of trains will result in the London Road level crossing being closed to road traffic more frequently than at present. However, the upgrading of the level crossing will reduce the closure to road time to approximately two minutes per train. Thus with the introduction of the Phase One Chiltern Railways new services between Bicester and Oxford it is likely that the London Road level crossing will in most hours be closed to road traffic for approximately eight minutes in an hour and double this if the full potential of the East – West Rail Link is realised in the future.
94. For some motorists and pedestrians, any increase in the likelihood of them being stopped at a level crossing can be seen in a negative context without any consideration of the benefits of the new rail services to the wider community. Closure of a level crossing to road traffic sufficient to accommodate the train services to be provided within Phase 1 and Phase 2 of the Order scheme is, however, quite usual, with crossings elsewhere in the country, both urban and rural, being closed for substantially longer times.
95. Evidence given by Paul Tregear (**CRCL/P/8**) addresses the forecast impact of the increased number of times that the London Road level crossing will be closed to road traffic in any one hour when Chiltern Railways services to and from London Marylebone are introduced.
96. Should the full potential of the East – West Rail link be realised, that is if an additional 2 trains per hour occurred, (i.e. with Cross Country services or similar) the London Road level crossing could be closed to road traffic for up to 20 minutes in an hour. There are other examples in Great Britain where closure to road exceeds 30 minutes in an hour. Examples include:
- Vine Road and White Hart Lane in Barnes
  - Sheen Lane in Mortlake
  - Manor Road in North Sheen
  - Bedfont Lane in Feltham
  - Thorpe, Vicarage and Station roads in Egham
  - Prune Hill in Rusham
  - London Road in Sunningdale
  - Guildford Road in Chertsey
  - Station Road in Sunningdale
  - Waterloo, Easthampstead and Barkham roads in Wokingham

97. Chiltern Railways have considered how a grade separated intersection might be provided to replace the London Road level crossing. However, as detailed in the evidence given by Stephen Barker (**CRCL/P/6/A**) the urban context within which this level crossing sits and the impact it would have on premises either side of the railway are such that grade separation is not a reasonably practical option.
98. Given that grade separation is not a reasonably practicable option the impact of the increased number of times the level crossing will be closed to road traffic and the relative safety performance of manually controlled barriers with CCTV when compared with automatic half-barrier equipped level crossings, upgrading this level crossing as proposed by Chiltern Railways is appropriate in the circumstances of the Order Scheme.
99. In addition to upgrading the configuration of the London Road level crossing it is appropriate that consideration is given to how best to address improper user behaviours. For example, motorists who fail to stop when the red lights have been illuminated and closure of the barriers has been initiated. If such behaviours are found at this level crossing, installation of red light enforcement cameras may be appropriate.
100. Following the introduction of the Phase One Chiltern Railways service over the London Road level crossing, covert surveillance of road user behaviour, including that of pedestrians and cyclists, should be undertaken to determine the nature of education and enforcement actions that should be taken by railway businesses working together with British Transport Police. A similar exercise should be undertaken when the further increase in train services planned in the context of the East – West Rail Link project are introduced.
101. I believe that the operational effects on road traffic, including the effects of increased closure times at the Bicester, London Road level crossing in Bicester in so far as they relate to safety are addressed, so far as is reasonably practicable, by upgrading the crossing to manned controlled barriers with CCTV surveillance and, in light of experience, considering whether photo-enforcement is necessary.

102. Langford Lane level crossing (grid reference SP 57564 20336) is currently configured as an automatic open crossing locally monitored (AOCL) crossing. The rail industry's Safety Management Information System (SMIS), managed by the RSSB, records a near miss with a van as having occurred on April 12<sup>th</sup>, 2007.
103. The Order Scheme, as proposed to be modified, provides for the closure of the Langford Lane level crossing and a diversion of the highway taking all traffic clear of the adjacent Scheduled Ancient Monument and over the railway via a new road-over-rail bridge to be located close to site of present Elm Tree Number 2 level crossing.
104. Road user data of Langford Lane level crossing has been obtained in both summer and winter as detailed below:
- 104.1. A four day census undertaken for Chiltern Railways between Friday June 18<sup>th</sup> and Monday June 21<sup>st</sup>, 2010 identified use of the crossing to be:
- Pedestrians – Fri 2, Sat 0, Sun 6, Mon 6.
  - Cyclists – Fri 4, Sat 6, Sun 9, Mon 7.
  - Motor vehicles – Fri 85, Sat 93, Sun 78, Mon 81.
  - Equestrian use – Fri 4, Sat 1, Sun 7, Mon 0.
- 104.2. A twenty-four hour census on December 1<sup>st</sup>, 2009 undertaken by Network Rail determined the user to be 116 motor vehicles and one pedestrian / cyclist
105. Using the winter census data with a train service of 15 trains per day and a line speed of 40 mph over a single track railway, the ALCRM risk ranking for the crossing as configured presently is D4. The risk drivers identified by Network Rail are the large number of heavy goods vehicles and sun glare.
106. On the basis of the proposed line speed increase to 100 mph, installation of a second track and with a train service increased to 102 trains per day (which becomes a key risk driver), the retention of the AOCL type of crossing is not possible because the maximum train speed compatible with their provision is 55 mph. In some cases risk control measures reduce the train speed to an even lower level.

107. If a level crossing was to be retained at the intersection of Langford Lane it would be necessary to upgrade the level crossing to either an automatic half-barrier (AHB) configuration or to a manned controlled barrier configuration with CCTV surveillance. The latter solution is preferred because the differentiated use to be made of each of the rail tracks with the passenger service over one line and freight trains serving the nearby Ministry of Defence (MoD) facility on the other generates a speed differential which is not appropriate with an AHB type of level crossing.
108. Upgrading the crossing and applying an ALCRM risk ranking to the upgrade with the Network Rail winter census data (detailed in paragraph 104.2) changes the ALCRM risk ranking to I8. Increasing the train service to that proposed when the East – West Rail Link is operational and passenger services use both tracks over the Langford Lane level crossing changes the ALCRM risk ranking to G7.
109. Notwithstanding the change in risk ranking forecast for Langford Lane level crossing, if it were to be converted to a manually operated configuration with CCTV surveillance, Chiltern Railways consider that such would necessitate, on the basis of workload and equipment, an increase in the number of work stations within the Marylebone Signalling Centre with a consequential increase in staffing (an additional four or five staff members would be needed) and alterations to the listed building within which the signalling centre is located.
110. Given the intent of the Order Scheme to construct the Bicester to Oxford railway in modern form and the impact on capital and operating costs that would be associated with the retention of Langford Lane level crossing, it is reasonable that it should be closed and an alternative route across the railway provided.
111. Closure without provision of an alternative to the level crossing is not possible because Langford Lane is the sole vehicular access route to a small number of properties, both residential and business and a secondary access to the MoD facility. Chiltern Railways considered the option of providing a bridge on the current alignment of Langford Lane but determined this not to be practicable as discussed in Stephen Barker's evidence (**CRCL/P/6/A**).

112. For vehicular traffic and cyclists, the proposed diversionary route via the new road-over-rail bridge to be located close to site of present Elm Tree Number 2 level crossing is reasonable whether the route to it is as proposed by Chiltern Railways when the diversionary route is one kilometre longer or as counter proposed by Topbreed Ltd (OBJ/189.), Primepark Ltd (OBJ/190) and the owners and residents of Merton Grounds Farm (OBJ/191). The same is true of the impact on The Beeley Trustees and the Calcutt Trustees (OBJ/194). The diversionary route proposed is reasonable and the impact on F, J & J Shouler (OBJ/225) is reasonable. In so far as (OBJ/189) to (OBJ/191), (OBJ/194) and (OBJ/225) are concerned, their joint proposal should be taken as indicating their acceptance of the longer diversionary distance.
113. With regard to the concerns of objectors J J D and E A Offord, R M and H S Bradshaw (OBJ/238) concerning the risks associated with horses crossing the railway; the new road and new road-over-rail bridge mitigates this risk and provides an effective alternative route over the railway.
114. The level of pedestrian traffic over the Langford Lane level crossing needs to be seen in the context of the costs that would be incurred if a Disability Discrimination Act (DDA) compliant pedestrian over-bridge were provided at the site of the present level crossing in addition to the highway linking to a new road-over-rail bridge close to the site of the present Elm Tree Number 2 level crossing. The physical constraints imposed by the adjacent scheduled ancient monument preclude construction of such a bridge on both engineering and aesthetic grounds. Were these overriding constraints removed, there is still no justification for a footbridge to supplement the diversionary route proposed in the Order Scheme (or as may be varied in light of objections raised). This is because the residual safety benefits associated with the possibility of trespass at the site of the level crossing to be closed as part of the Order Scheme are very small and can be addressed by fencing to an appropriate standard.
115. A further factor in favour of the provision of a new road-over-rail bridge close to the site of the present Elm Tree Farm No 2 level crossing is the waiting time which would be faced by road users were the Langford Lane level crossing to remain when the Phase One Chiltern Railways service, which brings the number of trains to 102

per day, is introduced. In due course the delays would increase when the services planned to operate over the East West Rail Link begin. These waiting times would approximate those calculated for Bicester's London Road level crossing (paragraphs 94 and 96 refer).

### **Holts Farm**

116. Holts Farm level crossing (Grid reference SP 55587 17466) is categorised as a user worked occupation level crossing. In so far as user misuse is concerned, the rail industry's SMIS system records the following incidents as having occurred between January 1998 and the end of August 2010. The incidents detailed below are all based on reports from train drivers:

- November 5<sup>th</sup>, 1998: Car crosses at last minute
- September 25<sup>th</sup>, 2000: Near miss with a road vehicle
- March 12<sup>th</sup>, 2001: Level crossing gates left open
- August 18<sup>th</sup>, 2001: Near miss with a Land Rover
- November 3<sup>rd</sup>, 2001: Missed car by a whisker
- June 17<sup>th</sup>, 2004: Very near miss with car
- December 30<sup>th</sup>, 2004: Car too close
- July 8<sup>th</sup>, 2005; Two vehicles crossed in front of train
- June 21<sup>st</sup>, 2006: Near with a cement mixer truck
- November 9<sup>th</sup>, 2006: Near miss with two JCB type vehicles
- February 15<sup>th</sup>, 2007: Near miss with a car
- February 20<sup>th</sup>, 2007: Tractor and trailer cross in front of train
- April 23<sup>rd</sup>, 2008: Tractor and trailer cross in front of train
- June 23<sup>rd</sup>, 2008: Van pulled across in front of train
- October 7<sup>th</sup>, 2008: Car crossed in front of train
- December 1<sup>st</sup>, 2009: Van crosses too late
- July 19<sup>th</sup>, 2010: Near miss with tractor which was reversed clear of the crossing when the train horn was sounded specially.

117. The Order Scheme proposes closure of this level crossing with users diverted over a new bridge crossing the railway to the south and towards the Beebont level crossing from which users will also be diverted.

118. On November 30<sup>th</sup>, 2009 Network Rail estimated the user of the Holts Farm level crossing to be three vehicles per day and a single pedestrian / cyclist. Taking this level of user with the current train

service of 15 trains per day operating over a single line at a speed of 40 mph generates an ALCRM risk ranking of C6. Key risk drivers identified by Network Rail are user misuse and sun glare.

119. Doubling the use made of this level crossing as a precautionary measure, raising the line speed over the single line to 100 mph and operating 102 trains per day over it changes the ALCRM risk ranking to B4 with frequency of trains, number of users and limited sighting being identified as additional key risk drivers. Doubling the track and further increasing the train service to levels envisaged upon completion of the East – West Rail Link increases the ALCRM risk ranking to A3.
120. Factors justifying the elimination of the Holts Farm occupation level crossing are the changed ALCRM risk ranking, the nature of the traffic over the level crossing, the substantial history of user misuse identified from SMIS records and no evidence that any greater degree of user compliance is likely. Indeed, many of the incidents reported in to SMIS suggest that the gates at this level crossing are left open on a regular basis as it is not indicated in the record of near miss incidents that vehicles which crossed at the last minute had first been stopped to allow the vehicle driver to determine that it was in fact safe to cross.
121. While it is technically possible to upgrade this level crossing by way of installation of active controls in the form of miniature warning lights this is, on safety grounds, a less effective control than eliminating the level crossing and diverting all traffic over an alternative route via a new over-bridge,; particularly as there is an evident risk that the crossing gates will continue to be left open.
122. Particular concerns are, in any event, associated with miniature warning light equipped level crossings as they have a history of user misuse. This is because leaving the gates open creates a form of active open crossing at which safety risk is disproportionately concentrated.
123. Provision of an alternative route via an over-bridge is the most effective way to eliminate the risks that would be associated with the retention of this level crossing with the Order scheme. Accordingly, in my view, rights over the Holt's Farm level crossing should be

extinguished and the alternative route over the railway provided. Objections to this course of action are addressed in Ian Gilder's evidence (**CRCL/P/12/A**).

### **Islip Mill Lane**

124. Islip Mill Lane level crossing (Grid reference SP 52107 13904) Miniature warning light equipped user worked crossing with separate gates for pedestrian use. On a site visit on July 1<sup>st</sup>, 2010 gates at this level crossing had not been properly closed indicating a degree of user misuse.
125. The Order Scheme proposes the diversion of vehicular traffic and construction of a DDA compliant over-bridge for pedestrian, cyclist and equestrian use.
126. A four-day census undertaken for Chiltern Railways between June 18<sup>th</sup> and 21<sup>st</sup>, 2010 identified use of this crossing to be:
- Pedestrians – Fri 12, Sat 35, Sun 32, Mon 11.
  - Cyclists – Fri 2, Sat 6, Sun 11, Mon 1.
  - Motor vehicles – Fri 8, Sat 2, Sun 0, Mon 10.
  - Equestrian use – Fri 0, Sat 0, Sun 0, Mon 0.
127. A Network Rail census on October 8<sup>th</sup>, 2007 generated a count of 14 vehicles and the same number of pedestrians and cyclists. This when taken with the baseline train service operating at a maximum speed of 30 mph generates an ALCRM risk ranking of C4. Low sighting times and glare from the sun were identified as key risk drivers.
128. Increasing the line speed to 100 mph and operating a service of 102 trains per day over it at a maximum speed of 100 mph as proposed in Phase one amends the ALCRM risk ranking to B2. Frequency of trains is an additional key risk driver alongside the large number of users. At this point Network Rail has identified a safety driven spend of GBP 312,344 to be justified to reduce risk so far as is practicable on a 25 year assessment basis.
129. Doubling the track to accommodate the levels of service envisaged consequent upon completion of Phase Two, the East – West Rail Link, further alters the ALCRM risk ranking to A1. This increases the safety

driven spend to GBP 905,402 to be justified to reduce risk so far as is practicable on a 25 year assessment basis.

130. Miniature warning light equipped user worked crossings on public highways do not conform with current guidance from the regulator of railway safety, nor does their continued existence on a public road over a level crossing of a railway operating at the speed proposed in the Order scheme conform with current industry practice.
131. The absolute minimum requirement, assuming a project to reconstruct the railway, would be for the crossing to be upgraded to an automatic half-barrier status. An alternative would be to provide manually controlled barriers with CCTV surveillance. In so far as the latter option is concerned it is understood that increasing the number of level crossings subject to CCTV surveillance by more than one (Bicester London Road) will incur additional operating costs because an extra signallers' work station and the staff to operate it will be required (paragraph 109 refers).
132. Although, in the context of miniature warning light crossings, the use made of this level crossing is relatively high, the usage identified by census is very low compared with the use generally made of level crossings equipped with either automatic half barriers or manually controlled barriers. Traffic census data for other public highway miniature warning light, automatic half barrier and manually controlled barrier equipped level crossings to verify this can be obtained if necessary to prove this point.
133. The diversionary route for motor vehicles, including agricultural vehicles, 150 metres, which is reasonable and needs to be seen in the context of the number of occasions on which road users would be delayed by the barriers closing the crossing to road traffic for each of the 102 and eventually 288 train services that are envisaged operating on the Bicester to Oxford rail corridor each day. For these reasons I do not consider that it would be unreasonable for Mr B and J E Henman and Sons' (OBJ/226) agricultural traffic to be diverted as there is a reasonably practicable alternative route provided in the Order scheme; whereas providing a vehicular over-bridge at or close to the site of the current level crossing appears impractical and unnecessary.

134. Provision of a DD compliant over-bridge for pedestrian, cyclist and equestrian use very close to the site of the present level crossing as proposed in the Order Scheme is an inherently reasonable alternative to the present at-grade crossing. Michael Graham & Amanda Roberts (OBJ/39) support the principle that the crossing is closed with their concerns relating to the siting of the replacement bridge in relation to their property. The same support in principle for the closure of the level crossing is provided by A & J Conibear (OBJ/91) who are likewise concerned with the nature of the over-bridge to be provided.
135. Given the number of trains which will be using this railway, the provision of a level crossing requiring audible alarms in association with the lights and barriers will have an impact on neighbours which will be avoided if the over-bridge proposed by Chiltern Railways is provided.
136. The diversionary routes to be provided for all users of this level crossing are reasonable and thus closure of the crossing is appropriate given that were the level crossing left in its current configuration with the proposed changes to line speed, speed and number of trains in the Order Scheme, safety risk to users would become intolerable.

### **Aristotle Lane**

137. Currently there is a private footpath level crossing (Grid reference SP 50247 07899) which is protected by whistle boards because of deficient sighting times and which traverses the railway as it exists today. Mr C Goodall (OBJ/8) has referred to a past application for this right of way to be granted public status. However, the Aristotle Lane level crossing remains a private crossing and in my opinion there is no case for any change to this status.
138. The rail industry's SMIS database details three near miss incidents with users of the Aristotle Lane private footpath level crossing between January 1998 and August 2010. These incidents took place as follows:
- July 22<sup>nd</sup>, 1998: Pedestrian disregarded train horn warning and crossed in front of train
  - March 26<sup>th</sup>, 2003: Near miss with two people, both with bicycles

- October 10<sup>th</sup>, 2008: Near miss with pedestrian

139. Chiltern Railways do not propose to provide a new private footpath level crossing over the Order Scheme line at this point which is to be reinstated on the solum of the Oxford & Bletchley Junction Railway/ Buckinghamshire Railway constructed in accordance with powers granted in 1846 (**CD/5.1**) and 1847 (**CD/5.3**). Consequently, the reconstructed railway will sever the route to the existing footpath level crossing, The Order Scheme proposes diverting the private footpath via the adjacent Aristotle Lane over-bridge and extinguishing all rights over the existing Aristotle Lane footpath level crossing. As part of the works it is proposed to upgrade the surface of the over-bridge alternative route.
140. It is understood that closure of the existing Aristotle Lane footpath level crossing has previously been proposed by the British Railways Board and successor rail infrastructure managers. Network Rail remains of the view that this level crossing should be eliminated.
141. There is at present no risk arising at a level crossing over the solum of the former Oxford – Bicester railway line as there is no level crossing of a railway line at this point. However, the risk associated with the existing private footpath level crossing over the existing railway lines has an ALCRM risk ranking score of C3. This risk ranking for the crossing of the rail lines adjacent to the west of the Order Scheme line would only change if the train service over the extant railway changed or the configuration of the crossing and or the context in which it to be found were to change. This is hypothetical as the Order scheme severs the east side access to the existing level crossing and diverts all users of the private footpath crossing over the adjacent over-bridge. Thus, diversion of the private footpath via the adjacent Aristotle Lane over-bridge would also eliminate the safety risk and noise nuisance associated with the existing level crossing over these lines which are in use today.
142. Reinstatement of a single track railway as proposed in the Order Scheme with a line speed of 75 mph and two passenger trains running each way per hour would, given a hypothetical provision of a private footpath level crossing, generate an ALCRM score of C4. The ALCRM score for this hypothetical level crossing increases to B3 if the number of passenger trains each way is four per hour.

143. Because of the distance between the existing Aristotle Lane private footpath level crossing and the alignment on which the reinstated track is to be installed, any private footpath level crossing created over the Order Scheme lines would need to be separate from the existing level crossing with a gated refuge between the two level crossings. That is, there would be two level crossings, both of which would have restricted sighting and require the use of train horns as a warning to users of the adjacent footpath level crossings.
144. Mr I Salisbury (OBJ/005) states that he regularly uses a wheelbarrow to take across heavy loads. He also references physical fitness, age and infirmity as grounds justifying the retention of the existing private footpath level crossing and the provision of a further private footpath level crossing over the to be reinstated railway. These are all factors which are likely to increase the time taken to traverse a level crossing. There are also risks that loads from wheelbarrows may be dislodged and/or wheelbarrows become stuck when crossing the railway, thereby further extending the time to which users of the level crossing are exposed to the risk of being struck by a train.
145. Similar factors are raised by Mr J Clark (OBJ/236) who refers to six allotment holders who are sufficiently infirm that they should be granted vehicular access.
146. Oxford City Council (OBJ/109) is opposed to the closure of this level crossing because it considers that it will impact on the usage of the allotments and because of concerns relating to the impact of the proposed diversionary route. D I Scargill on behalf of the Oxford Greenbelt Network (OBJ/122) raises similar concerns in respect of the works to facilitate provision of the diversionary route.
147. However, the proposed alternative route over the adjacent Aristotle Rail footbridge will be over an improved surface and will not expose any of the current users of the private footpath to the risks associated with crossing the railway at grade via a passive level crossing, protected only by a requirement that train horns should be sounded to alert users to the approach of trains.

148. The nearby availability of an alternative improved grade separated route across the railway negates any case for the installation of active controls in the form of miniature warning lights at either the existing Aristotle Lane private footpath level crossing or a new level crossing over the line to be reinstated as referenced by Mr J Clark (OBJ/236).
149. In my view, there is an alternative grade separated route across the railway which will be equipped with an improved surface and because, as is recognised by Mr J Clark (OBJ236), the more infirm allotment holders will be able to use alternative vehicular access, exceptional grounds do not exist to permit the construction of a new private footpath level crossing over the to be reconstructed railway. Therefore, national policy should be applied with no additional level crossing provided over the railway as detailed within the Order Scheme.
150. There are no exceptional grounds to justify the new level crossing wanted by objectors and given, that without it, the existing Aristotle Lane private footpath level crossing will be redundant the Order Scheme alternative route over the adjacent bridge is a viable and appropriate solution to the provision of access to the allotments. Closure of the existing Aristotle Lane private footpath level crossing is further justified by the ALCRM risk ranking and elimination of train horn use associated with the crossing.

## **Conclusion**

151. The Order Scheme addresses the safety risks associated with existing level crossings on the Bicester to Oxford railway line as they are at present and would arise were they to be retained. In so doing the Order scheme, in providing for the reconstruction and upgrading of the railway between Bicester and Oxford seizes an opportunity that must be taken to eliminate existing level crossings so far as is reasonably practicable; and is consistent with the generality of ORR and Network Rail policy, which promotes the avoidance of level crossings on modern railways and reduction of risk SFAIRP.
152. It is my opinion that, at other than Bicester's London Road level crossing, there are no exceptional grounds on which retention of any of the existing level crossings on the Oxford to Bicester railway can be justified. Given the range of alternative grade separated routes

across the railway that either exist or will be provided within the Order Scheme, the proposals contained within the Order are inherently reasonable having regard to Network Rail's ALCRM risk ranking and the levels of use that have been identified during the development of the Order Scheme.

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