

**TRANSPORT AND WORKS ACT
The Transport and Works (Inquiries Procedure) Rules 2004**

**THE PROPOSED ROTHER VALLEY RAILWAY
(BODIAM TO ROBERTSBRIDGE JUNCTION) ORDER**

SUMMARY PROOF OF EVIDENCE

of

DAVID KEAY

1. I am David Keay, a Director of Rother Valley Railway Ltd.
2. I have a Bachelor's Degree in Electrical & Electronic Engineering, I am a Chartered Engineer, a European Engineer, a Fellow of the Institute of Mechanical Engineers and a Fellow of the Institute of Engineering & Technology and have over 45 years' experience in designing, delivering and regulating railways around the world.
3. I have worked as a designer of turnkey projects, a research and development Engineer, and a promoter of light rail systems, developing Acts and Orders.
4. I spent 20 years with Her Majesty's Railway Inspectorate, latterly ORR, as Deputy Chief Inspector of Railways during in which time I was responsible for the oversight of level crossing safety.
5. I now run my own railway engineering and safety consultancy company. I act as Independent Competent Person for the UK Tramway industry and also have a number of voluntary posts as a Director of the Rother Valley Railway, Engineering Director of the Ffestiniog and Welsh Highland Railway, Engineering Director of Seaton Tramway and Trustee of Vintage Trains.
6. My main roles in relation to this application have been:
 - The design and development of the level crossings;
 - General direction and advice on engineering and safety;
 - Engagement with ORR, the safety regulator.
7. My evidence addresses paragraph 3(a) and (b) of the Statement of Matters; namely the impact of the three proposed road level crossings on safety and the proposals for the bridleway level crossing. My evidence also addresses those objections to the application that cite level crossing safety.
8. Bringing all my previous experience to bear, my evidence draws the following conclusions:
9. The approach adopted to the Order scheme has been to adopt the highest possible standards that are, in my professional opinion, equal the best current practice in the railway industry.
10. The Office of Rail and Road (ORR), the national safety regulator for all level crossings, that include road crossing, bridleway crossings and accommodation crossings has not objected to the principle of at grade crossings along the length of the Missing Link. East Sussex County Council has supported the application.

11. ORR will not permit operation of any crossing unless satisfied that the risks are controlled and tolerable, and the Highway Authorities are consultees to this process.
12. Risks at each crossing will be controlled to a level as low as reasonably practicable by adopting the highest standards of protection at all of the crossings with the latest proven and reliable technology.
13. RVR has engaged world class railway engineering specialists to advise and design the crossings. The natural topography of this area of outstanding natural beauty and the flood plain through which the railway passes makes bridges and tunnels not reasonably practicable to build. The alternatives of bridges and tunnels however were designed and costed, and this evidence was provided to ORR who agreed that the cost of credible alternatives of bridges or tunnels was grossly disproportionate when weighed against the safety benefits and the physical practicability of construction.
14. The level of detail design for each of the crossings far exceeds that normally produced for a Transport and Works Act Order submission. The designs provide for a high level of confidence that the principle of level crossings decided by an Order can be readily developed to provide safe operation.
15. A safety comparison with the UK mainline railway data is not realistic or valid since all of the Missing Link level crossings will be operated at very low railway speeds with trains being driven on line of sight and able to stop in advance of an obstruction. Trains will be able to stop within a carriage length compared, for example, with a train approaching the mainline level crossing at Robertsbridge that requires about a quarter of a mile to stop. Very low railway speed combined with proven crossing protection equipment with high safety integrity results in excellent risk control that enabled ORR, the safety regulator to agree to the principle of at grade crossings for the Missing Link.
16. The frequency of trains will also be extremely low, with a maximum of 10 trains per day.
17. Whilst the operation of the highway crossings will be on line of sight principles for the train drivers, the crossings will also be fitted with monitoring CCTV to allow the controlling signaller to stop trains and advise train drivers of issues on the highway such as vehicles stopped near the crossing or very slow moving traffic. In addition, the crossings are fitted with condition monitoring equipment that alerts the signaller of any failures of the protective equipment.
18. The highway crossings will be fitted with full barriers and will have the latest radar obstacle detection that both pre scans the highway approaches for approaching vehicles to delay closure of the entry barriers and then scans the area between the barriers before closing the exit barriers. If a vehicle, a person or an object is detected by the radar the barriers are prevented from closing. This mature technology has been in use on mainline railways in the UK and Europe for more than a decade providing high safety integrity and reliability.

19. RVR believes that there are fundamental practicability issues requiring an at grade crossing of the bridleway and such crossing can be designed and operated to control the risks to level as low as reasonably practicable as required by the Health & Safety at Work Act. The railway alignment is essentially straight and this provides excellent inter-visibility for crossing users and train crews. There are many thousand such crossings around the UK including a Bridleway Crossing on the Kent & East Sussex Railway that has operated safely for over 40 years. RVR will work with the British Horse Society, the ORR and the Rother District Council to ensure that suitable, user-focused and reliable protective measures are installed.
20. RVR recognises the need for accommodation crossings to reduce severance and mitigate the impact of the railway upon efficient farming. RVR will work with the landowners and ORR to ensure the safest and sustainable crossings are installed. There are already similar crossings along the K&ESR.