



CROSSRAIL INFORMATION PAPER

B2 – LIMITS OF DEVIATION

This paper explains how the limits of deviation for the works proposed to be authorized by the Crossrail Bill (the Bill) operate.

It will be of particular relevance to those close to the proposed Crossrail works.

This is not intended to replace or alter the text of the paper itself or any commitments contained in it, and it is important that you read the paper in order to have a full understanding of the subject. If you have any queries about this paper or about how it might apply to you, please contact either your regular Petition Negotiator at CLRL or the Crossrail helpdesk, who will be able to direct your query to the relevant person at CLRL. The helpdesk can be reached at:

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B2 – LIMITS OF DEVIATION

1. Introduction

- 1.1 This Information Paper explains how the limits of deviation for the works proposed to be authorized by the Crossrail Bill (the Bill) operate.
- 1.2 The horizontal limits of deviation shown on the deposited plans define the maximum extent of the railway and ancillary works listed in Schedule 1 to the Bill. In addition, there are vertical limits of deviation which are generally standard; not exceeding three metres upwards and to any extent downwards except in relation to three specified sections of tunnel where an upward limit of six metres is provided (the Bill provides that where an upper limit for a station, depot or shaft is shown on the deposited plans, the power to deviate is subject to that upper limit).
- 1.3 The Bill has to contain sufficient horizontal and vertical limits of deviation to allow for refinement of the preliminary design, on which the Bill plans are based, during detailed design.
- 1.4 Providing horizontal and vertical limits of deviation is normal practice for private and hybrid railways Bills.

2. Vertical Limits of Deviation

2.1 Railways legislation have usually provided for vertical limits of deviation. A three metre vertical limit of deviation is included in the Department for Transport's model clauses for railways to be authorized by Transport and Works Act 1992 orders and in the following examples of rail legislation:

- British Railways (Stansted) Act 1987;
- Channel Tunnel Act 1987;
- Midland Metro Acts 1989-1993;
- Heathrow Express Railway Act 1991;
- London Underground Act 1992;
- London Underground (Jubilee) Act 1993;
- Leeds Supertram Act 1993;
- Greater Nottingham Light Rapid Transit Act 1994;
- Croydon Tramlink Act 1994; and
- Channel Tunnel Rail Link Act 1996.

2.2 Appendix 1 shows project examples of where more than a three metre limit of deviation was given.

3. Horizontal Limits of Deviation

3.1 The limits of deviation for the surface sections of the route are a function of the extent of the proposed works and associated property boundaries, based on the design developed to the stage necessary for preparation of the Bill and the

associated Crossrail Environmental Statement¹ (ES), with allowances for contingencies, working space and similar factors.

3.2 Where the route is in bored tunnel, the centre line of the running tunnel is drawn to match engineering requirements for the tunnel in question, and the limits of deviation are generally drawn to provide a standard outer corridor width in relation to that centre line. This is done for the following reasons:

- there is no intention to acquire any surface land above bored tunnels (with the exception of ventilation shaft sites and stations), the land required to construct, operate and maintain the tunnels and the railway within them being a subsurface stratum; and
- the width of the corridor would allow for a minimal amount of deviation when the detailed design is carried out, with the benefit of more comprehensive ground investigation data which would provide for minor variations in tunnel construction.

3.3 Further design work will take place for the construction phase of the scheme, utilizing additional surveys, ground investigations and other relevant additional information. It will need to take account of undertakings and assurances given during the parliamentary process, as well as discussions with third parties. Where the scheme includes cuttings or embankments, the width may vary according to the height or depth of the line. This is taken into account when setting the horizontal limits of deviation.

3.4 The alignment of a modern railway is relatively inflexible as far as localized changes are concerned. Safety standards related to the speed of the train limit the minimum acceptable radius of curves and the rate at which gradients can change. Consequently a small change at one location can produce a significant effect over a long length of railway and the scope for deviation of the railway within the limits of deviation is limited.

4. Exercise of Bill Powers

4.1 The powers in the Bill can only be used for authorized purposes. Accordingly, land to be acquired within limits will only be used for the purpose for which acquisition is authorized. Further information about land acquisition is given in Information Papers C9, Land Acquisition Policy and B4, Acquisition of Land Outside the Limits of Deviation.

¹ The term 'Environmental Statement' refers to the Environmental Statement deposited with the Crossrail Bill in February 2005, the four Environmental Statements accompanying the Additional Provisions, the four Supplementary Environmental Statements submitted during the passage of the Bill, and their Non-Technical Summaries and errata, which together comprise the Crossrail Environmental Statement. The term 'the Main ES' refers specifically to the Environmental Statement produced (with its Non-Technical Summary) in February 2005. See <http://billdocuments.crossrail.co.uk/>.

4.2 The ES identifies the likely significant impacts that will arise from the construction and operation of Crossrail and takes account of the practicable scope for variation within the limits of deviation.

Appendix 1 — Examples of Where More Than 3m Limits of Deviation Taken

ORDER	UPWARDS LIMIT	DOWNWARDS LIMIT
2004		
Docklands Light Railway (Woolwich Arsenal Extension)	5m	Any
2002		
Heathrow Express Railway Extension	6m	Any
Piccadilly Line (Heathrow Terminal 5 Extension)	6m	Any
2001		
London Underground (East London Line Extension) (No. 2)	5m	Any