

RAILTRACK

Safety & Standards

SAFETY JUSTIFICATION

ISSUE: I

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Submitted by:	E Fleming	Date:	07/12/99
Standards Project Manager			
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Controller, Safety, Strategy and Planning			
Approved by:		Date:	
Controller, Railway Group Standards			20/12/99

PART 1 – SCOPE OF SAFETY JUSTIFICATION

This Safety Justification describes the rationale behind the controls relating to train detection as specified in Railway Group Standard GK/RT0011 Issue 3 and supported by Guidance Note GK/GN0611 Issue 1.

The Standard and Guidance Note represent a consolidation of previous standards and supporting documentation. All mandated controls are now specified within one Standard, and practical implementation of the control measures is supported by the Guidance Note. No new control measures have been introduced and certain prescriptive control measures have been devolved to the Infrastructure Controller.

The scope of the Safety Justification covers the controls as a whole, with emphasis on recent work leading to the issue of these two documents.

PART 2 – RISKS BEING CONTROLLED

The purpose of the controls is to contribute to the protection against inappropriate train movements, thereby protecting against potentially serious accidents such as collisions involving passenger trains, collisions with vehicles at level crossings, and workers being struck by a train on a running line. The contribution to such accidents from ineffective train detection is currently low in relation to other factors. This does not detract from the fact that train detection plays a fundamental role in ensuring safe train movements and that the control measures specified are of the utmost significance to the control of major risks on the railway.

Part 3 SUMMARY OF CONTROLS

Railway Group Standard GK/RT0011 defines the controls for ensuring that signallers, signalling systems and other train control systems receive reliable, accurate, sufficient and up to date information regarding the position and movement of trains necessary for the safe control of the railway.

The development of the current Standard represents a consolidation of previously defined control measures. No new control measures have been introduced, others have been grouped more logically or devolved where appropriate to the Infrastructure Controller. The control measures, summarised below, are defined at a level which ensures comprehensive control while providing scope for the adoption of the most effective means of train detection at the level of implementation. Correspondingly, the Guidance Note provides support in the practical implementation of the controls.

The controls specified in the Standard may be categorised as follows:

Circumstances in which train detection is required: Train detection systems are required where information on the position and movement of trains is required by the signalling system or signallers or required for the control of level crossings and staff warning systems.

Categories of train detection: Train detection systems are required to operate in such a way that they can correctly detect all vehicles authorised to operate over them. Where actuation of the train detection system cannot be guaranteed, vehicles may be permitted to operate when either supplementary train-borne equipment is provided e.g. track circuit assisters, or where additional procedures are applied e.g. governing the movement of on-track machines.

System performance: High level control measures are specified regarding: the suitability and integrity of the system; the compatibility of the system with electrification and other infrastructure systems; the ability to work in degraded environmental conditions; and the definition of the outputs from the train detection system to the signalling system.

More specific control measures are specified for proving that the track section is clear of trains, for ensuring that the appropriate information is presented to relevant parties, and for ensuring safe train movement in the event of failures. An appendix is provided to the Standard which contains detailed control measures relating to the critical dimensions of track sections.

Part 4 – COSTS AND BENEFITS

The control measures specified in the Standard have been in force for some time and have not been added to as a result of the current development. The costs associated with the established control measures are accepted by industry and, since there are no additions, will not be increased excepting the minor costs associated with drafting and acceptance of the new documents.

The established control measures already deliver an effective means of providing information on the position and movement of trains, resulting in a relatively small contribution to risk levels. The safety benefits associated with the changes to the Standard derive largely from greater clarity in the requirements. Additionally, the removal of unnecessary prescription will allow those responsible to devise the most effective means of implementation.

Part 5- CONCLUSIONS

The established controls on train detection have been improved to provide greater clarity and to remove unnecessary prescription. Train detection is fundamental to the safe movement of trains and the improvements should provide for a greater understanding of the control measures for train detection systems. The costs associated with the established control measures are accepted by the industry and there will be no significant costs arising from the improvements. Given that the established control measures are effective and that the improvements are delivered at minimal cost, it is concluded that the controls specified in GK/RT0011 are justified.