Overview
The aerodynamic effects of trains passing station platforms can be significant for passengers and wheeled items such as pushchairs. The recommendations in the report for Project T425 ‘Effective management of risk from slipstream effects at trackside and platforms’ (RSSB, 2007) included a proposal to derive a guidance document on slipstream effects on stations, for use by the infrastructure manager and others responsible for stations.

This research brief describes the development of this guidance and the associated risk assessment methodology that will now be used to support a revision to GI/RT7016 ‘Interface between Station Platforms, Track and Trains’.

Aims
The aim of this research project was to draw on the available body of aerodynamics research and industry experience of managing the risks of aerodynamic effects at stations. The outputs will allow a revision of part of the guidance currently available in GI/RT7016 Interface between Station Platforms, Track and Trains.

The objective of the completed first stage was to conduct an expert review of previous research studies and several different risk assessment methods. The findings were used to make proposals for revision of the existing guidance and to outline the scope of the next stage of work.

The objectives for the second stage of the project included the development and testing, through industry-based trials, of a quantitative method for undertaking the risk assessments, taking account of the factors referred to in Appendix D of GI/RT7016.

Findings
The findings of the first stage met its aims and objectives, by including recommendations for re-wording some of GI/RT7016 Part 9 and Appendix D, and specific suggestions for areas to be considered within the second stage of this project.

The second stage of the project has delivered the quantitative risk assessment required and trials with representatives from industry have been undertaken. This process has identified the benefits
of a quantitative assessment to provide a means of comparison of risk between different platforms. It has also highlighted the need for a qualitative assessment to take account of mitigation measures. Considerable judgement is required for the qualitative assessment and the experience of those responsible for station safety, in the management of aerodynamic risks, will be invaluable in this process.

**Deliverables**

Detailed reports on the work undertaken in both stages have been produced for the Aerodynamics GB Working Group. The recommendations for further work were reviewed in 2009 and also in 2011 by the Aerodynamics GB Working Group, as the client group for the project, and accepted.

**Method**

The study for this first stage considered the findings from previous research projects such as T425 Effective management of risk from slipstream effects at trackside and platforms; other published technical work, including those undertaken by the former British Rail Research (BRR); and examples of risk assessments devised and used by Southern Railway and National Express. A meeting was also held, involving Network Rail and train operating company representatives, to discuss the ways in which aerodynamic risks are managed. RSSB’s completed research into warning lines along platforms (T764 Evaluation of the benefits of yellow lines on non-high-speed platforms) was of particular interest for this project.

In the second stage of the project, the following activities were undertaken in connection with development of the risk assessment methodology:

- Review of BRR methodology developed in 1996.
- Development of a trial methodology based on the BRR method.
- Selection of suitable stations for trial application of the methodology.
- Trial risk assessments for 39 platforms at 11 stations.
- Interviews with station staff responsible for management of platform risks.
- Workshop to allow industry stakeholders to obtain experience of applying the methodology.
- Post-workshop exercise seeking input of stakeholders in consideration of the effectiveness of mitigation measures.
Next Steps

Specific recommendations from the first stage work, referred to the guidance currently available in GI/RT7016, and made suggestions for refinement and clarification, such as amending the reference to 'people' on platforms to mean 'people and their belongings'. This change was published with a clarification in the October 2009 issue of the RGS catalogue. The remaining recommendations arising from the first stage review, were endorsed by the Aerodynamics GB Working Group in August 2009, subject to the development of a risk assessment methodology and its testing.

The second stage work to develop a risk assessment methodology has now been successfully completed and recommendations to make changes to the GI/RT7016 have been endorsed by the Aerodynamics GB Working Group in November 2011.

The proposal to incorporate the methodology for undertaking the risk assessment, guidance on its application and the recommended means of mitigating the aerodynamic risk, has been supported by Infrastructure Standards Committee (INS SC) for inclusion in a guidance note, to accompany GI/RT7016.

A second workshop is being planned for early 2012, to seek further endorsement from the industry in respect of the proposed mitigation measures.

Changes to existing RGSs and the production of new documents are subject to approval by INS SC prior to publication. The work to complete the required changes to GI/RT7016 and to draft the supporting Guidance Note, will be undertaken to timescales agreed by INS SC.

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