Wayfinding & Crowding

Background

The nature of railway operations means that the industry needs to manage the impact of large groups of people moving on and about the rail network. The way people behave in these scenarios can have a bearing on their own and others' safety.

The Challenge

There are over 2,500 stations on the mainline network, through which more than a billion journeys begin and end every year in addition to those people who visit stations and do not travel.

The onus is very much on individual behaviour in the station environment. The industry can advise on appropriate behaviour and proper use and can build in good practice by design, but a number of human factors will always be involved in the behaviours of individuals and these can lead to harm. Most slips, trips and falls, for example, occur due to running on stairs or the platform and many assaults on staff by passengers take place in connection with ticket or train time disputes. Alcohol is also a contributor to many of these types of incident.

Given its understanding of the impact of personal behaviours on risk, the railway industry has a duty of care and a responsibility to put in place reasonably practicable measures that reduce the risks to passengers at stations. Work managed by RSSB on industry's behalf on station safety has included projects on:

▶ station operations to improve passenger experience and customer perception

▶ station design/layout, including signage and the use of glazing materials, flooring materials and tactile surfaces

▶ taking precautionary measures to alleviate the hazards caused by frost, ice and snow

▶ managing large numbers of people at stations and on trains

▶ improving access and ease of use for disabled passengers.

How We Can Help

In support of the broader range of operational safety issues faced by passengers at stations and on trains, RSSB has managed a suite of research projects to provide an authoritative repository of knowledge on wayfinding and crowding issues. These led to several good practice guides which can then be accessed by RSSB members.

Supporting the high level guidance is a substantial evidence base which includes research and analysis of:

▶ human factors issues

▶ public behaviour patterns

▶ commercial products (models, management systems, barriers etc)

▶ user requirements for station management systems and passenger flow modelling

▶ findings from interviews with rail stakeholders.

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Key Outputs

In addition to the considerable knowledge base, the industry has benefited from the development of high level good practice guides, distributed to those managing railway operations including trains and stations as well as those involved in planning signage and design. These included:

- crowd management at stations – a good practice guide

- wayfinding at stations – a good practice guide

- crowd management on trains – a good practice guide

- guidance on designing for crowds - an integrated approach (CIRIA)

The knowledge base itself is also accessible to the industry through the four research projects published:

- managing large events and perturbations at stations (T161)

- research into signage and wayfinding at stations (T321)

- management of on-train crowding (T605)

- designing for crowd behaviour (T656).

HMRI

The research has been used by Her Majesty's Railway Inspectorate (HMRI) as part of its toolkit to help station operators to understand good practice and help identify possible improvements.

London Assembly

As gatekeepers to the knowledge and technical expertise contained in the research, RSSB was able to support the rail industry's representation at the London Assembly's hearing into crowding issues on the rail network in 2008.

West Kowloon Terminal, Hong Kong

Architects working on the design of West Kowloon Terminal in Hong Kong used the Wayfinding guidance to help alleviate overcrowding in one of the worlds most populated areas.

London Blackfriars

Thameslink is one of the UK's busiest rail lines, running from Bedford to Brighton through London, linking two airports and numerous London Underground and mainline stations.

However, overcrowding and bottlenecks had become a problem in some areas - particularly at the 126-year-old Blackfriars station, with its then cramped, outdated facilities. Network Rail has adopted the principles of the RSSB Wayfinding at Stations guide as a basis for the design of the new station at Blackfriars.

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