Disability access on the railways has grown up piecemeal. Methods of getting wheelchair users on and off trains have varied, both over time and by region. British Rail introduced the wheeled ‘warden ramp’, usually used for access to or from the guard’s van. Since then there have been various developments, often stock-specific, whilst some operators have introduced company specific alternatives, such as the ‘folding boarding ramp’. Passenger coaches are designed to accept specific ramps, which have lugs that secure them to provide a stable platform for the user. Many ramps have had their lugs removed to fit any train. This makes them unstable and could lead to accidents for wheelchair users, other passengers or rail staff. In addition, some trains present particular problems because of their height from the platform.

Supported by ATOC, DfT, and Network Rail, the former Disabled Persons’ Transport Advisory Committee (Rail) asked RSSB to manage research into the best ways of overcoming these and related difficulties. The research was sponsored by Operations Focus Group.

The overall aim of the project was to define good practice that would be aimed at relevant sectors of the railway and wheelchair users.

The research undertook wide-ranging consultation both with industry parties and wheelchair users, reviewed relevant industry standards, and analysed the hazards associated with boarding and alighting wheelchair users. The approach comprised five main tasks:

- **Industry consultation** with train operating companies (TOCs) and with manufacturers of trains and manual boarding ramps. This was followed by extensive observations and discreet video recordings of staff assisting wheelchair users with boarding and alighting from trains at seven railway stations in England. During these visits, front line assistance staff were given an opportunity to talk about
their experiences in direct interviews and discussion groups.

- **Consultation with wheelchair users.** Researchers observed the assistance that was provided for boarding and alighting, with observations supported by covert video recordings. Three separate discussion groups were then organised with a range of manual and electric wheelchair users, including one group whose members held disabled persons railcards.

- **A review of relevant standards** that apply to ramped access for wheelchair users. These standards were evaluated to identify the implications for wheelchair stability when using ramps to board and alight from trains and also to assess the appropriateness of the different gradients involved—and in particular, the point at which staff are likely to struggle to provide assistance.

- **An examination of hazards and costs associated with boarding and alighting wheelchair users.** Estimates were made of the financial penalties for train delay associated with their boarding and alighting.

- **The development of good practice guidance** for rail staff and wheelchair users.
Key results

The project quickly established that the vast majority of wheelchair users board and alight from trains via a portable manual boarding ramp. The project then focused on the assistance that is provided to wheelchair users when boarding and alighting from trains using a folding manual boarding ramp. The combination of thorough consultation with the rail industry and wheelchair users, and observations of wheelchair users being assisted with boarding and alighting across different parts of the network helped to highlight specific issues that, when grouped, broadly related to: equipment, staff, TOCs, and wheelchair users.

Specifically, it is most beneficial if all ramps are:

- Of the same overall type, with specific ramp-train combinations labelled accordingly.
- Provided on platforms in sufficient numbers and at appropriate locations to reduce carrying distances for staff.
- Handled and deployed safely, with any problems (such as reduced manoeuvring space, steep gradients or damage) managed appropriately.
- Always stored securely immediately after use.

It is desirable if assistance staff are trained and guided to:

- Talk to wheelchair users about their assistance requirements rather than make assumptions.
- Plan boarding/alighting assistance so that it is not a hurried process.
- Direct wheelchair users when it is safe to board/alight and control the process carefully.
- Assist manual and electric wheelchair users up and down the ramp.
- Manage heavier wheelchairs safely, without risking injury.
- Ensure wheelchair users are positioned safely and comfortably on-board before their journey.

Wheelchair users can play an active part in improving the boarding/alighting process by:

- Pre-booking assistance whenever possible.
- Discussing their assistance needs with staff and questioning anything about which they are uncertain (e.g. correct fitting of the ramp).
- Never taking boarding/alighting into their own hands - if assistance fails, staff help should be sought either directly or by asking another passenger to find a member of staff.
• Knowing their wheelchair weight and their own weight, and being aware of ramp weight limits and the physical limitations of staff.
• Reporting any injuries that occur when boarding or alighting from trains.

Some issues require industry-led solutions, principally to:
• Improve the reliability and quality of the service to book assisted travel.
• Improve the methods used to highlight the accessible doorways on trains.
• Ensure the emphasis on dwell time does not compromise the assistance service.

Incident analysis

An incident analysis showed half of all recorded injuries were sustained by platform staff, 14% affected on-board staff, 2% affected drivers, and 11% affected unspecified staff (more likely platform or on-board assistants). In total, more than three-quarters of the incidents (248 incidents; 77%) affected rail staff. This compares with 14% of incidents having a direct effect on the wheelchair user, 2% on their companions and 7% on other passengers. The figures also suggest that most injuries occur during the time that wheelchair users are boarding, rather than during alighting.

From 2006 to 2010, an average of 81 injuries associated with boarding/alighting wheelchair users were reported in SMIS each year-equivalent to 0.237 fatalities and weighted injuries (FWI) / year (the rate has been in decline since 2007-8). The vast majority of injuries are minor, such as bruises, strains and cuts - with only 0.4% (one every two years) being classified as major injuries - a classification which covers injuries such as a fracture of a limb or the loss of sight (either temporary or permanent).

In summary, 80% of reported injuries were to staff. Closer examination suggested that a lack of competence, misjudgment, physical inability, distraction and inattention were key contributory factors. All of these could be addressed with staff training and guidance. Few were fundamental problems with equipment or processes, but instead examples of staff under-performing in specific areas. The ramps used for boarding and alighting contributed to 7% of incidents and almost 4% of the total was, at least partly, caused by inadequate maintenance.
Good practice guides

It is a feature of the report produced for the project that at the end of every section, the good practice guide accumulated in that section is collated and highlighted. Discussions were held with ATOC and other interested parties as to how best these various items of good practice should be promulgated to relevant sections of industry and to wheelchair users.

As a result of these discussions and detailed work on the good practice points in the report, two good practice guides were produced. The first contains three sections: for railway staff, railway managers and wheelchair users. It is available on


The second version is for wheelchair users only and is available on


Next steps

Discussions will be held with ATOC and Network Rail to decide how best to ensure that the good practice guides are kept up to date and publicised on a regular basis.

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