Executive summary

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Overview

Since the introduction of the Disability Discrimination Act (DDA) 1995, the British government has introduced a series of transport related regulations to legislate for the introduction of accessibility requirements for rail and public service vehicles. The Department for Transport (DfT) is committed to the governmentâs âBetter Regulationâ programme, and has commissioned Human Engineering Limited (Human Engineering) and Guide Dogs for the Blind Association (GDBA) to carry out this study to evaluate the accessibility of land based public transport, including trains, trams, buses, coaches, Private Hire Vehicles (PHVs) and taxis.

Scope of work

The project team was commissioned to conduct a literature review to identify existing accessibility regulation relating to land-based public transport, and gather any published evidence to indicate its effectiveness. The purpose of the literature review was two-fold; firstly to establish the relevance of work that may already have been undertaken (both at a national and international level) with respect to accessibility of public transport; and secondly to facilitate the development of audit and assessment tools for subsequent work. Objective and subjective data were then gathered to consider pan disability accessibility across land-based public transport and its associated infrastructure.

The study was scoped to conduct physical audits of up to three of each vehicle type at three principal locations. Location selection was driven by the need to evaluate recently built or modified infrastructure, in addition to a range of vehicles. A shortlist was developed, and following consultation with DfT and Disabled Persons Transport Advisory Committee (DPTAC), London, Glasgow and Manchester were selected. A series of consultation activities were designed to capture user views and experiences of transport accessibility at these locations; resources did not allow us to include a rural location, but some user consultation was conducted at Stockport as a subsidiary of Manchester. The project team also interviewed a representative sample of industry stakeholders to describe the challenges associated with providing accessible transport, and their views on legislation.

Approach taken

The study centres very much on the social model of disability, and the social and environmental barriers created by society (purposeful or inadvertent) that ultimately define who is disabled, not a personâs disability/impairment. To investigate the barriers to travel, journeys were considered as a complete cycle, from journey planning through to arrival at a given destination, rather than a series of discrete movements. This approach permitted an assessment of âTotal Journey Qualityâ currently afforded to disabled public transport users in the UK, where a disabled personâs level of journey quality is dependent on the levels of accessibility afforded to them at each stage of their journey on whichever transport mode(s) they choose to travel. In conducting this study, the access needs of the widest possible range of users throughout the journey cycle were considered.

Methodology

A literature review was conducted firstly, to identify any relevant work that may already have been undertaken (both at a national and international level) with respect to accessibility of public transport; and secondly to facilitate the development of methodologies for subsequent work. Physical audits, mystery shopper surveys (MSS), focus groups, user questionnaires and industry stakeholder interviews were carried out at three locations across the UK; Glasgow, London and Manchester.

Physical audits

The purpose of the physical audits was to assess the functional accessibility of public transport for disabled users. Audit tools in the form of high-level checklists were developed for each type of vehicle, infrastructure (including pedestrian environments) and journey planning service (i.e. printed timetables, telephone enquiry services and websites) based on current regulations where applicable and best practice

guidance.

The checklists allowed the auditor to assess the service against a number of regulatory and/or best practice guidelines to determine its accessibility for pandisability users.

User questionnaires

The purpose of this exercise was to collect data from a representative sample of users on their experience of public transport systems. Data for this survey were collected over a 4 week period using a questionnaire comprising 174 questions, consisting of multiple choice and free text answers. All respondents were asked to consider journeys made within the last year when answering the questions to reflect recent travel experience. 101 respondents of both sexes and a range of ages, ethnicities and disabilities took part in this study.

Considerable effort was made to recruit a range of people in terms of disability, age, gender and ethnic background. However, some groups proved harder to recruit than others, with visually impaired participants and wheelchair users representing a higher proportion of questionnaire respondents than would be expected. Where certain disabled people were under-represented, additional consultation was carried out to ensure the views of the widest possible audience were collected.

Mystery shopper surveys

Thirteen participants took part in the MSS including wheelchair users and people with mobility and sensory impairments. The experiences of users with cognitive impairments and mental health issues were gained through individual interviews due to the predicted difficulties associated with these users undertaking MSSs.

A comprehensive set of tasks was prepared to ensure that all the important issues such as the physical environment, staff interaction and overall journey quality could be assessed. In total, 41 visits were made to infrastructure (e.g. train stations, bus stops) and 36 journeys undertaken. In addition, all 13 participants undertook tasks that required them to plan their journey, using printed timetables, telephone enquiry services and websites.

Focus groups

The purpose of the focus groups was to obtain the experiences, views and observations of public transport users. In total, 21 participants of both sexes and a range of ages and disabilities took part in the focus groups. Participants were asked to comment on their recent experiences of public transport, with sessions structured around the key stages in the journey cycle. In addition to the location-specific focus groups, separate interviews were conducted with people with learning difficulties and members of a national support service for people with mental health issues.

Industry stakeholder consultation

The purpose of this exercise was to obtain feedback, from a design, operational and commercial perspective, regarding the effectiveness of public transport regulation/legislation from industry stakeholders, including frontline operators, managers, designers and engineers. A total of 26 semi-structured interviews were held with stakeholders representing all transport modes to consider the

effectiveness of the regulations and the challenges associated with providing an accessible transport service. Stakeholders included accessibility officers, station managers, engineers, service delivery managers and concept designers.

Discussion

Numerous references emerged from the literature review, physical audits and user and industry stakeholder consultations that suggest that many positive steps have been taken across all transport modes to enhance accessibility. However in many cases, the levels of maturity with respect to accessibility differed greatly within and between transport modes, and in many instances different disability groups were served more effectively than others. Five principal themes emerged which encompass the barriers identified at each of the journey stages;

1. Physical design of vehicles and infrastructure;
2. Training; disability awareness and travel training;
3. Provision of information;
4. Integration;
5. Inclusive policies, practices and procedures.

1. Physical design of vehicles and infrastructure

Considerable efforts have been made across all transport modes to enhance accessibility, both in the presence and absence of regulation. Despite this the study highlighted a number of areas for improvement. Insufficient space for assistance dogs, a lack of storage and the inconsistent design and location of certain features e.g. wheelchair spaces, priority seating and door controls, were cited as key concerns. Standardisation of design through greater prescription in regulations, for some aspects of vehicle design, was cited by users, designers/manufacturers and operators as an effective way to tackle these problems. Vehicle design which is not inclusive of some mobility devices also emerged as a concern, further compounded by inconsistent operator policy with respect to the carriage of such devices and a lack of awareness on the part of the user. Whilst assessing the applicability of the reference wheelchair as a true representation of the cross-section of mobility devices currently available to wheelchair users may be a possible course in the long term, the introduction of a system that classifies appropriate wheelchairs as âtransport friendlyâ may well be of assistance to disabled users in the short term.

On the whole, pedestrian environments and transport infrastructure, despite being largely unlegislated for, exhibited good levels of accessibility with respect to physical design. However, local authorities must ensure that the design, maintenance and continual monitoring of pedestrian areas are factored into the delivery of Local Transport Plans (LTPs). Local authorities and transport operators must ensure that minor and major transport interchanges are designed in accordance with relevant best practice guidance and the incompatibility between accessible vehicles and inaccessible interchanges addressed.

2. Training; disability awareness and travel training

In the main users were satisfied with the level of assistance provided by transportrelated staff across all transport modes. Travelling by bus was the area where staff attitudes and disability awareness were most called into question, with the reluctance to kneel the bus or pull in close to the kerb emerging as principal

barriers. Despite their legal obligations to do so, the reluctance on the part of taxi and PHV drivers to carry users with assistance dogs was another area of concern. However, the project team also identified that good staff attitudes and effective disability awareness training can have a significant impact on reducing the physical barriers to access. Whilst it was not apparent how much disability awareness is taking place or how effective it is, steps are being taken by some organisations such as the Association of Train Operating Companies (ATOC), Transport for London (TfL), Go-Skills and National Association of Licensing and Enforcement Officers (NALEO), to provide standardised disability awareness training programmes to ensure consistency in delivery. A generic training framework, applicable across all transport modes (as currently being researched by DPTAC/DfT) will further enhance the quality of assistance received by a disabled person, whichever mode(s) of transport they are required or desire to travel on to make their chosen journey. It is important that disability awareness training is subject to a programme of continual improvement to monitor its effectiveness.
âTravel trainingâ is an initiative which attempts to increase the confidence of disabled people in using public transport, and despite a number of schemes currently available in the UK, the take up amongst disabled people was found to be low. Local authorities and transport providers must make concerted efforts not only provide pan-disability travel training, but also to make disabled people aware that it exists.

3. Provision of information

The provision of information for journey planning via printed timetables, telephone enquiry services and websites, and at minor and major interchanges was found in the main to be poorly designed, and not inclusive of a pan-disability audience. For journey planning services, the inability to tailor a service to their particular needs and difficulties in obtaining disability-specific information were the two main concerns for users. The often fragmented approach to journey planning was also cited as problematic.

At major interchanges, the provision of real-time information in the form of audio/visual announcements and way finding strategies was highlighted as an area in need of improvement. At minor interchanges, the inaccessible nature of timetable information and the absence of real-time information were cited as particularly problematic. The provision of information on buses was a concern for many disabled people. Many felt that the lack of audio and visual information within the vehicle and the inaccessible nature of external route information presented barriers to travel, particularly for people with a visual impairment, mental health problems or learning difficulties.

4. Inclusive practices and policies

Policies related to the carriage of mobility devices, the kneeling of buses at bus stops, lack of standardised disability awareness training, and improvements to pedestrian environments as part of local authority LTPs are all examples highlighted by this study where the introduction of inclusive practices and policies would help to enhance accessibility. Findings from this study highlight the need for accessibility to be acknowledged as a mainstream activity and recognised as being the responsibility of all concerned with providing public transport. Considering accessibility for disabled people must underpin strategic decisions, investment and policies. Disability Equality Duty (DED), Disability Equality Impact Assessments and DPTACâs âInclusive Projectsâ best practice guidance are all mechanisms through which those involved in the provision of public transport can ensure that accessibility is integral to the development and revision of practice and policy.

5. Integration

Only when a holistic approach to transport design is adopted, where inclusive design is at the core of any transport-related strategy, where accessibility is embraced by all those concerned with the provision of public transport as a mainstream activity, and where the successful integration of these services is achieved will a fully inclusive transport system be realised.

This study served to highlight a number of instances where a lack of integration within and between transport modes and pedestrian environments presented barriers to disabled people. These included a fragmented approach to journey planning, poorly designed and maintained pedestrian links, and mismatches between vehicles and infrastructure. The reason for this lack of integration can be attributed to the fact that much of the transport network has evolved in a fragmented fashion, with relatively little integration between local authorities and transport providers. As a result, presently, the ideological scenario of the seamless journey is still a remote one for many public transport users. This study has shown that, in response to the introduction of the DDA 1995 (and DDA 2005) and associated legislation, particularly the RVAR and PSVAR, much is clearly being done to improve the accessibility of public transport for disabled users, not only to comply with legislation, but over and above these mandatory requirements. However, if a user is to experience âTotal Journey Qualityâ much still needs to be done to include a wider audience and embrace the conflicting needs of a pan-disability audience.

Recommendations

The following section presents a number of recommendations, based on the findings from this study, designed to enhance the accessibility of public transport to a pandisability audience.

Physical design of vehicles and infrastructure

- The feasibility and practicalities of making regulations more prescriptive, to facilitate a shift towards standardised vehicle design within transportmodes, should be investigated further. It is suggested that further consultation be carried out with industry stakeholders to determine if in fact this is a view held by the industry as a whole and ascertain where it is felt that standardisation would be beneficial;
- Following user consultation, more prescription could be introduced with respect to the space provided for assistance dogs and luggage and the design and location of controls such as accessible toilet door controls on trains to ensure standardisation of design within transport modes;
- The feasibility of using cantilever seats on buses and trains to provide space for assistance dogs at standard seating, from both a physical design and economic perceptive, should be investigated;
- Whilst step nosings into all bus vehicles were highlighted with a different colour to that of the floor colouring of the vehicle in an attempt to enhance the step conspicuity, the level of visual contrast afforded across the vehicle types differed. It is suggested that an easy-to-use design checklist is developed to ensure that effective colour contrast can be achieved, whatever the corporate identity of the operating company. This should build upon and/or be added to the best practice guidance currently available in the PSVAR;
- A programme of continual research into the needs of a representative disabled audience should be implemented, to ensure that it can feed into the design and development of public transport systems;
- Whilst the reference wheelchair remains the benchmark for wheelchair accommodation, operators should raise awareness amongst front-line staff and wheelchair users as to the **specific** types of

mobility devices the vehicles they operate can accommodate. Operator policies on the carriage of mobility scooters should be revised to reflect this information, and these policies should be available to the public;

- In the long-term, the feasibility of introducing an industry standard system for the classification of mobility devices as âpublic transport friendlyâ should be investigated. Manufacturers should be encouraged to work closely with transport operators and users to ensure that the mobility devices they offer more effectively mirror he requirements for wheelchair accommodation on public transport;
- Continual monitoring and reassessment of the reference wheelchair as an acceptable standard for wheelchair accommodation on regulated vehicles, in light of future trends in wheelchair design, should be carried out;
- Introduce a regulatory framework for the design of taxis with a sustainable lead-in period.
- Local authorities should be encouraged to factor the evaluation and design of pedestrian environments into LTPs, and be specific in the ways in which they plan to tackle this issue. It is suggested that LTPs take account of the continual monitoring and improvement of pedestrian environments. Local authorities must ensure for example:
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    - Adherence to best practice guidelines for pedestrian environments â this should be required and monitored in any publicly funded scheme;
    - All crossings have dropped kerbs and tactile paving;
    - Tactile paving is laid in accordance with DfT guidance;
    - All signal controlled crossings have bleepers and rotating cones where appropriate;
    - All bus shelters have raised borders, accessible travel information and adequate space for wheelchair users with protection from elements at least as good as for non-disabled people;
- Those involved with the design of major infrastructure must ensure adherence to best practice guidance on all new build and refurbishment projects. Consultations with subject matter experts e.g. disability groups and disabled users should form part of the design process;
- Further research should be carried out to investigate innovative methods to mitigate against the inconsistent gap at the PTI when travelling by train;
- Local Authorities should work hard to ensure that all bus stops are designated as clearways and work towards effective ways of preventing illegal parking.

Training

- A standardised approach to disability awareness training across all transport modes should be adopted. The development of a generic disability awareness training programme, applicable across all transport modes is considered to be an effective way to firstly, improve the level of disability awareness amongst front-line staff, and secondly, to ensure that all customer-facing staff across all transport modes are trained to the same high standard;
- Disability awareness training should stretch beyond front-line staff and extend to all those involved in providing this service. It is suggested that these standardised training frameworks could be incorporated into franchise agreements and DPPPs and form part of Disability Equality Impact assessments for public bodies;
- Local authorities and transport operators should develop policies aimed at continually monitoring the effectiveness of the training programmes e.g. through passenger feedback and accreditation to ensure credibility. Assessments of disability awareness training should form part of a companyâs annual audit report, which should be made available when applying for public funding;

- The government should raise awareness on the carriage of guide dogs and other assistance dogs by taxis and PHVs. This should be monitored industry-wide to ensure that a consistent approach is adopted;
- A mandatory disability awareness training programme for taxi and PHV drivers should be introduced. The GoSkills pilot training programme could be recognised as an industry standard and/or vocational qualification;
- To ensure that disability awareness is integral to training it is suggested that policies are developed in the UK based on the âTomar resolutionâ (Council of Europe 2001), which suggests that inclusive design should be an integral part of professional training courses and curricula requirements for all occupations working in transport and the built environment. It is recommended that the UK government takes steps to encourage professional bodies to adopt this concept and develop procedures to monitor its implementation;
- If the full benefits of travel training are to be realised local authority and transport providers must make concerted efforts not only provide training, but also to make disabled people aware that it exists, (e.g. through disability forums, advertisements at stations and on vehicles and publicity on websites), and is available and beneficial to all users, whatever their disability;
- The development of a generic travel training programme could be an effective way to provide this training for travel trainers, carers and users.

Provision of information

- It is suggested that transport operators and local authorities are encouraged to consult best-practice guidance where it is available when designing journey planning services;
- More detailed research should be carried out to investigate how accessible printed timetables, telephone enquiry services and websites are for all transport operators across all transport modes. It is suggested that outcomes of this research underpin the development of a stand-alone industry standard best-practice guidance document for the design of accessible journey planning services;
- Transport providers, mainly bus operators, should be encouraged to advertise wheelchair accessible services where possible, and investigate ways to provide more completely accessible routes; although it is recognised that the ability to do this relies heavily on the number of PSVAR compliant vehicles each service provider operates and logistically speaking is likely to be difficult;
- Research into the feasibility of a centralised journey planning service should be carried out from which users can access both travel and accessibility-specific information for all transport modes. It is suggested that the research should take account of the design and development of both a telephone-based and web-based service. Systems of this type are provided in several countries across Europe e.g. Germany, Sweden and Finland (see section 8.2.7) and it is suggested that any research into the feasibility of such a system in the UK should evaluate and learn from existing systems of this type;
- The PSVAR must be amended to include the provision of audio and visual information on buses. Existing research such as âThe Announce Systemâ â Monitoring report (DfT 2002) and further user consultation should underpin the development of such a system for bus travel. Amendments must take account of the position of this iformation within the vehicle in ddition to the design of the information itself;
- Research should be conducted to establish whether the requirements in he PSVAR for external passenger information meet the needs of disabled sers. The output of the report should be a number of recommendations, f necessary, as to how external passenger information should be mproved, and these recommendations should underpin amendments to he regulations;

- Local authorities and transport providers ensure that the printed information at bus stops meets with good practice with respect to designing for accessibility. They should also investigate the feasibility of installing real-time information at intermediate stops;
- Research should be conducted into developing common standards of good practice for the provision of information at intermediate stops, which in turn will promote the consistent presentation of information across all transport modes e.g. standardised real-time information at tram stops and bus stops;
- Local authorities must put procedures in place to police vandalism at intermediate stops, and to commit to a programme of continual monitoring and refurbishment of intermediate stops to ensure that vandalism does not create barriers to travel for disabled people;
- Research should be carried out to develop standards for the provision of information and navigational systems within major transport infrastructure. This guidance should take account of the design and positioning of visual information, the delivery of audible announcements, way finding signage and electronic way finding systems and other associated navigational aids such as tactile paving and way finding guidance paths;
- Local authority, operators, and disabled users should be involved in the drafting of such guidance, and the industry must be actively encouraged to follow this agreed standard. The introduction of a standardised approach will help to ensure consistency of design across all transport modes e.g. key signage will be consistent across transport modes. Integration of design in this way is an effective mechanism for promoting accessibility.

Inclusive practices and policies

- All applications for public funding for the provision or development of public transport must provide evidence as to the current levels accessibility afforded (i.e. what has been done to improve accessibility, and what is planned for the future), and this must be part of the monitoring and audit process;
- The DfT should put in place a process to assess and monitor how public funding for transport has fulfilled the commitment for accessibility. Ideally, DPTAC would be involved in this;
- Access statements must be prepared for any development or redevelopment to ensure access issues are addressed at every stage and key decisions are recorded. The appointment of an âAccess Championâ would be an effective means by which to ensure that is the case;
- Transport providers should be required to carry out an annual audit (as a minimum) of accessibility features and ensure that any required maintenance is carried out in accordance with the previous two points. Internal access audits, should be carried to monitor progress of any redevelopment and this should take account of all elements in the transport system, not just physical access. User groups, including disabled people, should be involved in proposals related to the development and redevelopment and in the monitoring process.

Additional recommendations

- Due to the difficulties experienced when trying to recruit participants from certain user groups i.e., those with mental health issues and disabled users from ethnic minority communities, it is suggested that further consultation is conducted to reach these groups. It is suggested that further consultation consists of one-to-one interviews and/or focus groups with the users themselves, rather than through support groups and community representatives;
- Wider consultation with industry stakeholders is needed in order to gain a better understanding of

accessibility issues from a manufacturers/operators perspective.