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INTERNATIONAL ASSOCIATION OF PUBLIC TRANSPORT

EUROPEAN CONFERENCE OF MINISTERS OF TRANSPORT ECMT

IMPROVING ACCESS TO PUBLIC TRANSPORT

EUROPEAN CONFERENCE OF MINISTERS OF TRANSPORT (ECMT)

The European Conference of Ministers of Transport (ECMT) is an inter-governmental organization established by a Protocol signed in Brussels on 17 October 1953. It comprises the Ministers of Transport of 43 full Member countries: Albania, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia-Herzegovina, Bulgaria, Croatia, the Czech Republic, Denmark, Estonia, Finland, France, FRY Macedonia, Georgia, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Moldova, Netherlands, Norway, Poland, Portugal, Romania, Russia, Serbia and Montenegro, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine and the United Kingdom. There are seven Associate member countries (Australia, Canada, Japan, Korea, Mexico, New Zealand and the United States) and one Observer country (Morocco).

The ECMT is a forum in which Ministers responsible for transport, and more specifically the inland transport sector, can co-operate on policy. Within this forum, Ministers can openly discuss current problems and agree upon joint approaches aimed at improving the utilization and at ensuring the rational development of European transport systems of international importance.

At present, ECMT has a dual role. On one hand it helps to create an integrated transport system throughout the enlarged Europe that is economically efficient and meets environmental and safety standards. In order to achieve this, it is important for ECMT to help build a bridge between the European Union and the rest of the European continent at a political level.

On the other hand, ECMT's mission is also to develop reflections on long-term trends in the transport sector and to study the implications for the sector of increased globalisation. The activities in this regard have recently been reinforced by the setting up of a New Joint OECD/ECMT Transport Research Centre.

THE INTERNATIONAL ASSOCIATION OF PUBLIC TRANSPORT (UITP)

The International Association of Public Transport (UITP) was founded back in 1885 by Belgium's King Leopold II, who wanted to make his country a leader in the tramway sector and to provide a stimulus for its steel industry.

Today, the Brussels-based UITP is the global organisation for public transport authorities and operators, policy decision-makers, scientific institutes and the public transport supply and service industry. It is a platform for worldwide co-operation and the sharing of know-how between its 2 500 members from some 80 countries.

UITP's prime mission is:

- to be the international network of public transport professionals, bringing together all of the key mobility players;

- to act as the point of reference for the public transport sector and a centre of knowledge on past and current developments and future trends;

- to house an international forum for public transport policy, stimulating interaction and debate, and;

- to be a prime advocate and promoter of public transport.

FOREWORD

Partnership between government authorities and public transport operators is vital to better accessibility to public transport for all clients of the transport system. Without close dialogue and co-ordination among those in charge of the infrastructure, roads, and pavement, and those responsible for the public transport vehicles and systems, complete accessibility of public transport cannot be realized.

It is moreover imperative that this dialogue takes place in a close and sustained manner with representatives of the disabled community.

Lack of co-ordination between local authorities and public transport operators has been in many cities one of the key barriers to improving accessibility in public transport. For this reason, the European Conference of Ministers of Transport (ECMT) and the International Association of Public Transport (UITP) created a joint task force in 2002 to explore ways to improve the dialogue and cooperation among public transport service providers and local authorities in particular.

This report, the fruit of that joint effort, demonstrates in a practical way the commitment of UITP to encouraging improved accessibility among its members. This commitment is set out in UITP's recent position paper on accessibility adopted in 2001.

The collaboration with UITP has helped ECMT to further identify ways in which national governments can contribute to the implementation of better accessibility by setting a legal and regulatory framework that facilitates better co-ordination and collaboration among actors at a local level, and by offering guidelines and incentives to encourage local authorities and

operators to fully integrate accessibility considerations into their long-term transport planning.

We are particularly pleased that the report has received the approval of both the UITP Policy Board and the ECMT Ministers at their 2003 Council in Brussels.

The ECMT and UITP will use this joint project as a springboard for further collaboration to improve the accessibility of public transport in partnership and close consultation with representatives of disabled individuals. We will follow up the findings of this work in due time to see how the recommendations are being implemented both at national and local levels of government and by public transport operators.

A public transport system accessible to all is an essential element of sustainable travel. The UITP and ECMT share this objective and will continue to work together to bring about a safe, efficient, high-quality and fully accessible transport system.

We have printed this publication in accessible font type and format to meet the needs of a maximum number of readers.

We hope you find this report helpful and welcome your reactions.

Jack Short
Secretary General
ECMT

Hans Rat
Secretary General
UITP

ACKNOWLEDGEMENTS

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Chapter 1

INTRODUCTION

Context for the study

Governments and public transport operators share a common goal to ensure that public transport is accessible to all, and that the pedestrian and traffic environments are designed and managed to enable people to reach and use public transport safely and with confidence. Public transport has a key role to play in improving accessibility for all individuals, thereby minimising social exclusion and enhancing social cohesion. In this pursuit, government and the public transport community must work together to reduce not only physical, but also psychological barriers (cognitive, information, fear, discrimination) to safe and seamless travel in cities.

The importance of improving accessibility to transport systems is clear: at any one time, an average of 25% of the population may have a degree of reduced mobility due to a physical or mental disability, impaired sight or hearing, or through having to carry heavy bags or travel with small children. Further, physical and sensory disabilities are often related to age and, as is well known, the proportion of the elderly population in western countries is growing and will continue to do so well into the 21st century.

The present and future needs of people with reduced mobility cannot be ignored. To do so would be to exacerbate inequality of access to a wide range of facilities and, from the point of view of the transport service providers, to miss out on a substantial sector of the market for public transport. Indeed, benefits from improvements in transport accessibility are accrued not just to the

disabled and ageing communities, but to all clients of the transport system.

Further, providing access for disabled people to public transport is not an isolated endeavour: it is a crucial part of a quality approach to public transport services, which ensures that all passengers are provided with a high standard of public transport.

Much progress has been made toward meeting the goal of better accessibility in local areas. However, implementation of policies to improve accessibility for all clients of the transport system has proven difficult and slow in many urban regions.

Accessibility in ECMT and UITP

The importance of making all modes of public transport accessible to disabled people has been recognised by member countries of the ECMT and by transport operators who are members of UITP for many years.

In 1999 the ECMT published a guide to good practice entitled, "Improving Transport for People with Mobility Handicaps". This report covered a wide range of topics including the road and pedestrian environment, transport infrastructure and training in disability awareness as well as accessible vehicles and services. It drew on examples of good practice from Europe and North America and was intended to be of help to everyone working in the field of transport for mobility handicapped people, but particularly to those working in places where much still remains to be done.

In May 2001 the ECMT Council of Ministers adopted a Consolidated Resolution (no.2001/3) on accessible transport. The resolution is comprehensive and includes recommendations that:

- Bus services should continue to facilitate and stimulate the positive trend towards the introduction of fully accessible buses.

- Rail, light rail and tram systems should make renewed efforts to stimulate improved accessibility, including ensuring that all new systems should be fully accessible from the outset.

In the period 2000-2002, the UITP revised its position on accessibility issues to a significant extent. An official presentation was adopted at the Policy Board meeting of spring 2000, and in summer 2002 the Metro Committee issued a Core Brief on Accessibility to underground infrastructure. A paper is also being prepared on accessibility to waterborne transport (ferries and vessels) and its infrastructure.

The UITP Position Paper (June 2001) sets out the organisation's official policy on Access to Public Transport. The paper fully supports the views of the European Bus Directive that all Class 1 road vehicles (urban buses) shall be accessible to people with reduced mobility including wheelchair users. It also supports improvements in accessibility of other vehicles, such as coaches and rural buses, and emphasises the need for improvements in infrastructure to match accessible vehicles and rolling stock.

In 2002 the UITP carried out a survey of 19 transport authorities or companies in major cities to find out their progress towards achieving accessible public transport. The respondents represent a fleet of nearly 30 000 buses out of which 10 700 to 14 500 are currently low floor.

The overall results of this survey are found in Annex 1 to this report. Specific findings from the survey are referenced in relevant sections of this report.

The ECMT-UITP Task Force

To better ascertain the difficulties involved in improving accessibility to public transport, the ECMT and the UITP together established in 2001 a joint Task Force on Improving Access to Public Transport. The broad mandate for this Task Force, which was comprised of representatives of national and local

Governments as well as transport operators, was to examine how urban public transport vehicles, systems and associated infrastructure can be further improved so that they provide better access to people with mobility difficulties.

Specifically, the three main objectives given to the Task Force were to:

- Define a framework for, and examples of partnerships between public authorities (at different levels) and transport operators which can improve access for all and deliver other advantages for local public transport services (increased patronage, reduced congestion);

- Draw up guidance on good practice for training transport personnel to understand and respond to the needs of passengers with mobility difficulties;[1]

- Propose solutions to particular problems that occur in improving access, including liability in case of accident, specific technical solutions for boarding aids and the integration of accessible vehicles in the urban environment.

Drawing from *inter alia* the ECMT's 1999 guide to good practice, "Improving Transport for People with Mobility Handicaps", and the 2001 ECMT Consolidated Resolution (no.2001/3) on accessible transport, as well as UITP's revised position on accessibility issues, adopted in 2000, the Task Force examined accessibility initiatives in the transport systems of four cities: Grenoble, Prague, Göteborg and Liverpool, all of which are making progress towards achieving fully accessible public transport. Task force members met with local and transport authorities as well as the public transport operators in these cities to better understand how policies to improve accessibility are made and implemented. Much of the detail contained in this report has been drawn from these visits. When appropriate, the lessons drawn from the four case studies were taken into account in conclusions of this report. Other sources used in preparing the report include papers dealing with policies and planning of

accessible public transport from France, Sweden, the UK, Belgium and Denmark.

The report is organised as follows: Section 2 provides information on the context for improving public transport accessibility in the four cities examined during the study. Section 3 describes specific issues and factors that are important in this endeavour and how they have shaped accessibility in the transport systems of the four cities; and Section 4 closes the report with a concluding discussion.

Note

1.   This forthcoming ECMT-UITP training manual will be published as a separate brochure.

Chapter 2

CONTEXT FOR ACCESSIBILITY IN THE FOUR CITIES EXAMINED

As mentioned above, the four cities were chosen by the Task Force as good examples of where a substantial proportion of public transport services and associated infrastructure have been made accessible to disabled people. They also represent the spectrum of ways in which public transport is provided - from a wholly publicly owned system as in Prague to services that are very largely operated on an entirely commercial basis, as in Liverpool. The following sections briefly describe each of the four cities.

2.1.   Grenoble

Grenoble has a population of approximately 400,000 and contains 23 communes (district authorities). The public transport network comprises two major tramlines and 21 bus lines. There is one major public transport interchange in the city centre (Grand Place) and another at the railway station. There are also three bus stations, two in the south of the city, one in the Northwest.

The Syndicat Mixte des Transports en Commun de l'Agglomération Grenobloise (SMTC) is responsible for the planning and future development of public transport services in the city. The actual operation of the bus and tram services is delegated by SMTC to the Société d'Economie Mixte des Transports de l'Agglomération Grenobloise (SEMITAG). The annual budget of SMTC (2001) amounts to €214 million, which covers both operational and investment costs. Financing for SMTC comes from a tax (le versement transport) levied on commercial organisations in France with more than nine employees, grants

paid by the metropolitan authority and by the departmental authority (l'Isere) and by other smaller payments made from various sources including school services. The operation of SEMITAG has an annual deficit of €33.3 million, which is covered by payment from SMTC. In 2001, ticket sales covered 34% of the SEMITAG operational budget; 55% being covered by operational subsidies and a further 5.7% by contractual agreement with SMTC to cover concessionary schemes.

2.2. Prague

Prague has a population of just over 1.2 million. The public transport network consists of three metro lines, over 20 tram routes and over 200 urban and regional bus routes. The services are planned and operated by Prague Public Transit Co. Inc. (PPTO) which is wholly owned by the city authority. Financial support for the services is paid by the Czech central government to the city authority (which has no power to raise revenue itself); the transport operator submits a bid for funding to the city authority. Currently fare revenue covers about 27% of total costs with a further three per cent revenue from other activities, the balance of 70% being the subsidy from government.

2.3. Gothenburg

Gothenburg has a population of 450,000. The Greater Gothenburg sub-region of Västra Götaland has bus, train, tram and ferry operations, with 549 buses, 18 trains, 204 trams and 26 ferries respectively. The Traffic and Public Transport Authority has overall responsibility for co-ordinating public transport and other traffic as well as maintenance of roads, streets and tracks. Västtrafik, with which the Traffic and Public Transport Authority works in collaboration, is the main authority for the region's public transport including public transport planning in Gothenburg. Västtrafik is responsible for putting contracts out to tender for the operation of public transport services. Principal contractors (operators) include Göteborgs Spårvagar (trams), Linjebuss and Swebus (buses). Some of the trains are owned by the national rail company, some by Västtrafik. The trams are owned by the city

authority, while the buses are owned by the operating companies, most of which are private sector companies.

Farebox revenue covers approximately 57% of costs in the city; a substantial increase in recent years, since the tendering of services began; ten years ago less than 30% was covered by fares revenue.

2.4.   Merseyside

Liverpool (Merseyside) in the Northwest of England, has a population of 1.42 million. Merseytravel (the Merseyside Passenger Transport Executive MPTE) has overall responsibility for the planning, development and procurement of public transport services. In common with the rest of Great Britain (with the partial exception of London) bus services are privatised and deregulated: 85% of the network is privately operated as commercial services, the remaining 15% – services that are not provided commercially but which are considered socially necessary – are tendered out to private operators. Merseyside also has a local rail service (Merseyrail), which again in common with the rest of the country, is privatised with its operations put out to tender -- formerly by the Strategic Rail Authority but in the future by Merseytravel, which will give the PTE greater control over the standards of Merseyrail. Merseytravel also owns and operates the Mersey ferries. Although Merseytravel does not operate trains or buses, it is responsible for the provision of bus stops and stations and rail stations including the improvements necessary to improve access for disabled people.

As is clear from the description above, the characteristics of the four cities' public transport systems are very different. Broadly there are three types of public transport systems in Europe: public monopoly, where the service is provided by a publicly owned organisation; a tendering regime, where companies (private or public) are awarded the right to operate services following an open call for tenders in which stipulated levels of service are given; and deregulation, where private companies compete directly on the road. In the deregulated (or "privatised") regime there is normally

scope for the public transport authority or local authority to subsidise services that it considers socially necessary, and that would not otherwise be provided by the commercial operators. Where this is done (in the UK for example), the public authority tenders the service(s) and sets out the levels of service needed; this can include a requirement to operate low-floor accessible vehicles.

In Prague, provision of all public transport services rests with the public transport company. That company is responsible for planning and developing the network and services, in consultation with the Prague City Authority through which it receives its subsidies from central government. Thus it is an example of the first mentioned category of public transport systems.

In Grenoble, the public transport authority (SMTC, which is approximately equivalent to a PTE in the UK) awards the right to operate services following an open call for tenders. The operator (SEMITAG) is a public-private partnership (64.8% public) but elsewhere in France there are some places where the services are provided by wholly private commercial companies.

In Gothenburg, responsibility for the overall planning and development also rests with a public (city) authority, with groups of services tendered out mainly to private companies in the case of buses, but with trams and trains still in public ownership. Through the tendering process, the public authorities can determine the conditions and service levels of the transport operations to a greater extent than is possible in Merseyside. There, although there is a comparable public authority responsible for policies, planning and development (Merseytravel) the majority of the bus services are provided commercially and make their own decisions about service levels, vehicle types etc. The tendering process for the minority of bus services and for the local rail services means that Merseytravel has greater control over these elements, though in both cases the operators are in the private sector.

The following sections examine the key factors involved in improving access and mobility for disabled people.

Chapter 3

KEY FACTORS IN IMPROVING ACCESSIBILITY TO PUBLIC TRANSPORT

3.1.   Co-operation between local authorities and public transport operators

The simplest form of co-operation between local authorities and public transport operators is that of Prague. The public transport company develops medium- and long-term projects and policies that are initially considered by the Board of Directors and Supervisory Board of the company, which include representatives from the city authority. If the proposals are accepted by the Boards, they are then presented to the city authority for approval. Once that approval is given, the proposals are incorporated in the city development plans to be implemented as financing permits. Since 1995 there has been very good co-operation between the public transport company and the city authority in Prague, including, as one of the priorities, improvements to accessibility for disabled people.

In Grenoble SMTC and SEMITAG have a working contract for the development of tram and other public transport services. Frequent meetings (weekly) are held to discuss all aspects of all projects including development of accessible services. This arrangement works well, as is evidenced by the progress in accessibility of both trams and buses. There can, however, sometimes be problems with the local authorities in greater Grenoble. Representatives from these authorities are invited to attend meetings, where plans and projects are discussed prior to a final decision. There are 23 of these local authorities (communes) and they provide just under 20% of the funding for the operation of

SMTC. The board of directors (Comité syndical) of the SMTC is composed of 16 members, eight from the local authorities and eight from the Departmental authority. Thus ultimate control rests with the local and Departmental authorities, though it would appear that having this degree of control does not obviate some disagreements among the communes.

In Gothenburg, the Traffic and Public Transport Authority, which has overall responsibility for co-ordinating public transport, is a public city authority. It is led by the Traffic and Public Transport Committee, its members are appointed by the local council and its composition is governed by the results of local elections. Västtrafik, a public organisation, is owned partly by the Region (Västra Götland) and partly by 49 municipalities. This organisation in effect acts as the agent for the Authority in tendering public transport services. The Authority has a department that is responsible for project planning and construction of new traffic infrastructure for both roads and the tramway system. In this area of work, the Traffic and Public Transport Authority collaborates with the City Planning Administration and the Swedish National Road Administration (SNRA).

There are a number of collaborative groups dealing with more specific aspects of public transport services. On trams there is a Working Group comprising the Traffic and Public Transport Authority, Västtrafik, the tram operator and consultants who advise on such matters as the design of tram stops and of the vehicles themselves. There is also a Special Working Group on improving integration between regular public transport and the Special Transport Services (STS) for disabled people. This group includes the Authority, Västtrafik, STS, the City Planning Office, SNRA and a tram and bus operator (Göteborgs Spårvägar).

Västtrafik has established guidelines that are used when operators buy new buses: they are functional descriptions not technical solutions (it is up to the bus manufacturers to do this). Subsequently the National Public Transport Association (composed of municipal and regional local authorities) has made

national functional standards that must be adhered to. These include requirements relating to getting on and off buses, spaces for wheelchairs, width of doors, exterior signs and displays and internal information. In part this has been done to ensure that buses can be moved from one area to another; for example, if an operator loses a contract in one place, he will be able to deploy the buses elsewhere.

In Merseyside, as mentioned earlier, Merseytravel has overall responsibility for planning and development of public transport, for tendering bus services not provided commercially and for tendering the local rail services. In effect, it combines the functions of Västtrafik and the Traffic and Public Transport Authority in Gothenburg so far as public transport services are concerned. The political control over the policies of Merseytravel is the responsibility of the Passenger Transport Authority, which is composed of elected representatives from the local authorities that make up to Merseyside conurbation.

However, because of the large element of commercially provided bus services, the degree of direct control is rather less than in Gothenburg – and very much less than in the other two cities. Co-operative agreements between operators and local authorities (Passenger Transport Executives in the British conurbations, county, district of unitary authorities elsewhere) generally take the form of Bus Quality Partnerships which specify what the operator is required to do (e.g. provide low-floor wheelchair accessible buses) and what the local authority should provide (e.g. improved bus stops). The Transport Act 2000 (Section 114 on) provides for quality partnership schemes which are on a statutory basis and which can therefore be enforced once the authorities concerned, i.e. the Passenger Transport Executive, bus operator, local highway authority and the police, have signed the agreement.

In the wider survey made by UITP, only one out of the 19 cities had no explicit policy in favour of improving accessibility for disabled people. In most cases it appears that it is the local authority that has initiated this policy; operators have, at least in

the past, been more reactive than proactive, though this is not universally the case. In four of the cities surveyed, associations of disabled people were seen to be the driving force.

3.1.1. Commentary

Although structures of local government differ in the four cities, ultimate control of public transport services in terms of policies and future development rests in all four cases with elected representatives. The only partial exception arises in Merseyside, where the combination of deregulation and privatisation of bus and rail services means that these operations are partly outside the control of locally elected representatives.

In three of the cities (Prague, Grenoble and Gothenburg) this control runs with a significant element of financial control. In Prague, apart from fare receipts, which cover 27% of operating costs, financial support for public transport capital and operational expenditures comes largely from the city authority, though there are subventions from central government towards the costs of renewing the bus fleet.

In Grenoble, the SMTC, with its control exercised by representatives of the municipal local authorities and the Departmental authority, finances the operational deficit and capital investment costs.

In Gothenburg it appears that, although control on overall planning and development policies rests with the city authority, there is greater direct involvement of both regional and national government organisations.

In all cities there is evidence of close co-operation between local authorities and public transport operators. In Prague and Grenoble that co-operation is straightforward in the sense that there are essentially only two parties involved: the local authority, which through its elected members answers to the public, and the public transport company that operates the services.

The situation in Gothenburg and Merseyside differs in that there are three parties directly involved: the local authority; a public authority that has duties in terms of planning and, in part, operating public transport services (for example the ferries in Merseyside); and the operators of bus, tram and rail services. The process of tendering bus services in Gothenburg, in use for the past ten years, gives the public transport authority (Västtrafik) considerable control over the vehicles used and the service levels provided. The same applies to tram services, where the vehicles are owned by the city authority though not operated by them.

Merseytravel has a comparable level of control over the bus services that it contracts out (the socially necessary services) but these only represent 15% of the total. In these services the PTE can, for example, require that they be operated only with low-floor buses. The remaining 85% are commercially provided by independent companies and are not under the control of Merseyside.

In this situation, co-operation between public transport authority and the operating companies becomes at once more difficult and more important. Merseytravel has sometimes found it difficult to persuade the operators to progress towards fully accessible services at the speed and in the way in which the PTE would wish to see. In these circumstances, the possibilities of formal, contractual and enforceable agreements between the two parties becomes important. There are numerous examples of less formal agreements, usually called Bus Quality Partnerships or Agreements in Great Britain, which have led to significant improvements in the quality and accessibility of bus services in defined areas or corridors. However, the experience of Merseytravel suggests that, in some circumstances, the adoption of a more formal, enforceable agreement as envisaged under the Transport Act 2000 will be needed to achieve substantial progress.

3.2. Co-operation with disabled people: Defining and implementing accessibility

It is widely accepted that the process of developing public transport services that are accessible to disabled people needs the direct involvement of disabled people themselves and their organisations. The planning of the first tramway in Grenoble provides a good example of this approach. The tramway was the first to be entirely accessible to disabled people including wheelchair users. It was opened in 1987, but the policy of creating a system fully accessible for disabled people dates back to the 1970's, when the decision was taken that public transport vehicles should become accessible to all. The inauguration of the first tramway was preceded by several years of detailed discussions with organisations of disabled people, of which there are 25 in Grenoble.

In turn, the successful outcome of this process in creating a fully accessible tramway, then led to the same policies being applied since 1994 to the development of the city's bus services. The approach by SEMITAG and SMTC is a two-stage process. Stage 1 involves preparation of a multidisciplinary study to define the concept of accessibility and develop appropriate technological specifications for vehicles and stops. Once a specification has been developed, a prototype vehicle is purchased and operated to validate the specification. This Stage 1 activity involves working with a wide range of organisations including INRETS-LESCO (for ergonomic studies), bus manufacturers, the technical departments of the communes and associations of disabled people. Fifteen out of the 25 disabled associations in Grenoble worked very closely with SEMITAG on the design issues. Once the concepts of accessibility – the technical specifications for vehicles and infrastructure – have been validated and agreed, Stage 2, implementation of the new service begins.

In Gothenburg one of the stated aims of Västtrafik is "to increase accessibility for people with disabilities". The Regional Council of Vastra Götaland (part owner of Västtrafik) has a Committee for Mental and Physical Disabilities with special

responsibility for people with disabilities. This committee has to identify any barriers to the use of public transport by disabled people and to suggest ways in which these barriers may be removed. The Committee co-operates with representatives of different disability groups and user organisations in the Region's Council for the Disabled. Västtrafik works in close partnership with the Committee for Mental and Physical Disabilities in preparing action plans to improve access to vehicles and in the transport infrastructure.

The regional planning group of Västra Götaland's Regional Development Committee has also established a thematic group for the adaptation of public transport to meet the needs of disabled people. The Secretariat of the Committee for Mental and Physical Disabilities co-ordinates work between the different sectors of public transport and creates guidelines and standards for disabled people's accessibility to public transport. The thematic group includes representatives from the national organisations for road, rail, maritime and air services and from the County Administration Board.

One interesting outcome of the development of comprehensive guidelines by the thematic group for all modes of public transport is the production of a categorised list that states the level of accessibility for disabled people to each mode and its associated infrastructure. Annex 2 shows an example of this for urban buses and for entrances to public buildings: green representing the approved level of accessibility for all disabled people, yellow – accessibility for some but not all and red, accessibility not approved. Annex 2 also describes in more detail what each of these categories represents in terms of accessibility.

In Merseyside the overall planning of transport (all modes including private car hire and freight as well as public transport) is the responsibility of Merseytravel and the five local authorities that cover the Merseyside area. The Local Transport Plan (LTP) prepared by these organisations covers a five-year period and includes consultation with disabled groups as part of the on-going planning process. One of the aims of the LTP is to develop a fully

accessible transport network, to which end Merseytravel has developed a Public Transport Access Strategy. It has also commissioned a number of fully accessible bus stations and has planned the building of some new accessible rail stations.

As part of this process, each of the five local authorities, in conjunction with Merseytravel, consults their local access groups and disabled people's organisations on a regular basis. Merseytravel also hosts a Transport Access Panel whose co-opted members are drawn from disabled people's organisations across Merseyside.

Merseyside has a full-time officer responsible for evaluating and advising on improvements to current levels of accessibility in the public transport system and for producing a guide to public transport facilities for disabled people in Merseyside. Prague also has full-time staff responsible for the development of accessible public transport service.

Concern with the need to meet the requirements of disabled people is a comparatively recent development in Prague and the Czech Republic; prior to 1990 the national government paid little attention to the needs of disabled people. Since the early 1990's, however, considerable progress has been made, particularly in the provision of features to help blind and partially sighted people use buses, trams and in the metro. These developments appear to have happened, in part, because there is a good relationship between the Public Transit Company and associations for blind people.

In the UITP survey, as noted Section 3.1, there were several cities where associations for disabled people had taken the lead in promoting the importance of accessible services. Three cities also mentioned explicitly that the local authorities acted as facilitators between disability associations and transport operators, formalising the co-operation in "advisory committees".

An analysis made of some 80 Local Transport Plans in the UK in 2001 showed that the majority of local authorities were consulting with organisations representing disabled people when

preparing their plans. However, even though the guidelines prepared by the Government stress the importance of this type of involvement, there were 12 local authorities where there was little or no apparent consultation. It is apparent from the experiences of the four study cities that continuing discussion with and involvement of disabled people is essential in developing genuinely accessible transport.

Recently the Danish Road Standards Committee has set up a working group called "Accessibility for All" which is developing methods for accessibility audits of projects for streets and pedestrian areas. Further information on this is given in Section 3.5 (Transport infrastructure) but it is noted that among the lessons learned during the development of the methodology is, "It takes time to reach compromises and achieve consensus between road administrators and organisations for people with disabilities. The informed settings of a small working group is a good forum for reaching agreements."

3.2.1. Commentary

Although the local/regional government structures are different in the four study cities, their experience and the evidence from the UITP survey all emphasise the importance of involving organisations for disabled people in the planning and development of accessible public transport services.

The methods adopted by Grenoble show a very comprehensive approach to this issue, with disabled people's organisations involved from the start of the planning and design progress. The close association between the Prague Public Transit Company and organisations of blind people has led to some innovative developments in enabling blind and partially sighted people to use services more easily and safely.

Equally it is apparent from the review of UK Local Transport Plans that this type of consultation and co-operation is not universal. Absence of consultation does seem to reflect directly on the quality of the planning and development of accessible services and associated infrastructure. The UK review found that the quality

of planning and policies on accessible transport was generally poorer in those authorities where there was little consultation with disabled people than it was where there was extensive consultation.

It is important, in setting up the consultation process, to remember that there is a broad range of disabilities. There is perhaps an understandable tendency to concentrate on the needs of wheelchair users and blind and partially sighted people if for no other reason than that they – and their needs – are very apparent. But there are large numbers of people who are deaf or hard of hearing – a form of hidden disability – and people with cognitive impairments. Involvement with disabled people should take account of the full range of disabilities.

It is also important to recognise that this involvement is not a "one-off" event but should be part of a continuing process, including monitoring once an accessible service has been put into operation.

Technical developments and improvements in transport-related infrastructure are discussed in the next section.

3.3.   Technical issues

3.3.1.   *Vehicle design*

There has been a substantial amount of research on the design of accessible buses in many European countries, and the principles of step-free, flat low-floor design with space for wheelchair users are generally accepted -- if sometimes reluctantly -- by some bus operators. The provision of a ramp on the bus perhaps remains as the most contentious issue, including whether it should be power or manually operated. Grenoble has adopted a policy of having powered ramps, 65 cm long with a maximum gradient when deployed of 15% (1 in 6). Ramps of this kind have the advantage of deploying quickly, being quite short (which implies an appropriate height of the bus stop boarding area) and not requiring the bus driver to leave his cab to operate the ramp.

Some operators, notably in Great Britain and also in the Netherlands, are reluctant to provide ramps, arguing that deploying ramps will have a negative effect on scheduling and timekeeping, coupled in the case of some Dutch operators, with a belief that unsecured wheelchairs on board a bus are unsafe. This aspect of safety is generally not considered to be a problem, in France or Britain, though a safety belt is provided at the wheelchair spaces on low-floor buses in Prague. In parenthesis it is noted that although Annex VII to the EC Bus Directive specifies a restraint system for wheelchairs carried on vehicles where passenger seats are not required to be fitted with an occupant restraint system, it does provide for an alternative where the wheelchair faces rearwards. This alternative specifies a backrest, side support, handrails etc to ensure that the wheelchair is in a stable condition.

The UITP survey found that nearly all the 19 cities purchase low-floor buses, the only exceptions were two cities in Central Europe. The types of boarding aid used varied, the most common (11 out of 19) being a combination of kneeling the bus and using a manual ramp. Eight cities had kneeling with an automatic ramp and five just used kneeling. Only two cities had high-floor buses fitted with lifts; generally this type of device is only used in long-distance services that use high-floor coaches.

Ramps will normally be operated by the driver/conductor, though in three cases manual ramps were operated by a fellow passenger because the driver is not permitted to leave his "workplace" due to concern over the security of his fares cash. Where the driver has to operate the ramp, the procedures on leaving his cabin are not always formalised, but usually the handbrake must be applied, the engine turned off, the cash box closed and the cabin door closed.

Most ramp systems have a safety device linked to the vehicle brakes. Several have warning lights and/or sounds; nine have obstacle sensors and some have, as an extra safety provision, an interlock or sensor to detect that the ramp has been fully closed.

As already mentioned, Grenoble has led the way with fully accessible trams which like the Grenoble buses have powered ramps though in this case only 30 cm long. For both buses and trams the achievement of full access is as much dependant on the physical structure of the stop as it is of the vehicle. This issue is discussed in a later section (3.5).

Gothenburg is also moving towards achieving a fleet of low-floor wheelchair accessible trams. In 1998/99 an 8.66-m long low-floor middle section, manufactured by Mittenwalder Gerätebau (MGB) was added to a standard (M21) tram. There are now approximately 55 vehicles of this type operating in the city. Subsequently (June 2001) the city decided to buy 40 new Sirio low-floor vehicles, at a cost of approximately 65M € financed 75% by central government, 25% by the city. These are due to be delivered in 2004 and will be fully low-floor 29m in length.

While the physical design of vehicles to give easy access for wheelchair users and other people with walking difficulties is essential, provision also needs to be made for people with sensory impairments, particularly those who are blind or partially sighted.

In Prague the APEX company in association with the Czech association for the blind has developed a "command set" for visually impaired people. The basic components of the set are a pocket transmitter and receiver, which among other facilities can inform the user of the route number and direction of travel of a bus or tram. The system can also be used to activate a voice system that will give the user the same information as that displayed on a real-time bus information display, e.g. service number, final destination and departure time.

The command set can also be used to activate an acoustic orientation signal, which serves to locate a specific place thus helping the individual to navigate through railway stations, bus stations etc. The use of the command set to find out the route number and direction of travel of a bus or tram also has the advantage that it can alert the driver that there is a visually impaired person who wants to board the vehicle. The costs of the

transmitter and receiver are approximately € 300, but users have the cost reimbursed by the Czech Department of Social Affairs. The other costs are for a control unit fitted to the bus, tram or train (€ 965) and € 388 for a sound beacon with a voice announcement attached to the real-time bus (or tram) information display.

3.3.2. Commentary

The principles of physical vehicle design to achieve good access for all users including wheelchair passengers – step-free access, flat low-floor, space for wheelchairs etc – are well known. These design standards for both buses and trams are increasingly becoming the norm. The importance of providing appropriate colour contrast to assist partially sighted passengers, adequate handholds, on-board visual and audible information etc. is also generally accepted.

Apart from the issue of the vertical gap, there is also that of the horizontal gap. Trams are guided and always dock in the same way so the horizontal gap can be minimised, but buses are more difficult. Simple construction solutions exist, but at the end of an eight-hour shift, any driver - even the best ones - are tired and the boarding/alighting quality and convenience may decrease. Guidance systems are currently being tested which should obviate this problem. However, unless action is taken to stop illegal parking at bus stops, there will always be occasions when proper docking is difficult or impossible.

Future issues or matters of contention seem to be more likely to concern the operational use of some of the design features, particularly the wheelchair ramp (and, at least in Great Britain, the regular use of the kneeling mechanism). Whether or not a wheelchair passenger should be strapped in is also an issue in some places. As mentioned earlier, the new EC Directive does not require a full restraint system in some circumstances on urban buses. The other questions that arise relate more to the infrastructure within which the vehicle operates and to driver and staff training in disability awareness; both of these issues are dealt with later in this report.

In parenthesis, new boarding aids such as a ramp, may raise questions about liability in the case of an accident. Were such an accident to happen, it seems likely that the operator would be held liable but there is little evidence of any such incidents or their outcomes.

Although many of the physical aspects of vehicles and rolling stock have been settled, there is still much to be done in actually implementing them and there is still room for further innovation. The APEX system in Prague is a good example of innovative thinking that can provide effective assistance for some disabled passengers.

3.4. Specialised services

While as a matter of principle, the general policy in all the cities visited is to achieve full accessibility of their services, it is recognised that for some people, some of the time, a service more closely tailored to their needs is required. Even in Grenoble it is estimated that fully accessible bus and tram services will meet the needs of about 90% of the disabled population, but the remaining ten per cent will need more specialised services. Ten of the 19 cities in the UITP survey said that they had specially dedicated services for disabled people.

Public transport services designed to meet the needs of disabled people started some 25 years ago at a time when mainstream public transport could not be easily used by many disabled people and could not be accessed at all by wheelchair users. All of the cities in this study have services dedicated to meet the needs of disabled people.

Prague Public Transport operates two special bus routes connecting apartments designed for disabled people with the city centre. These routes are operated by four modified buses equipped with lifts for wheelchair users. The buses have a reduced number of seats (18) and extended space for wheelchairs (seven in total). Operation of these buses is provided by two-member crews consisting of a driver and a ramp assistant. The services operate on a timetable basis (approximately hourly

frequency) and are only used by disabled people plus anyone accompanying them. Timetabling of the services is frequently modified on the basis of discussions with organisations of disabled people.

Both Merseyside and Grenoble also have services designed specifically for disabled people. The Merseyside Service (Merseylink) is a long-established dial-a-ride demand-responsive bus service of which there are many examples in Great Britain. Merseytravel has also facilitated the development of Merseyside Community Transport (MCT) as a company limited by guarantee and with a remit to develop locally based transport solutions at a community level. MCT builds on existing community transport services, which traditionally (as elsewhere in Great Britain) have concentrated on providing local transport for elderly and disabled people. However, MCT intends to broaden the activities of these services to deal with problems affecting a wider spectrum of the community including the unemployed and younger people.

As the Local Transport Plan points out, despite a substantial public transport network throughout Merseyside, particular shortcomings in the needs it can meet have been identified. The groups affected by these shortcomings are generally some of the most vulnerable people in society; without solutions to these transport gaps being developed these individuals will miss out on opportunities to improve their financial position (because of lack of transport to employment), their health and their quality of life.

Grenoble has six specially adapted buses, which provide both a regular and an on-demand service for disabled people. The service is operated on an experimental basis in conjunction with taxis to provide a good level of service for users, mainly blind and partially sighted people. In 2001 the service carried over 27 000 passengers.

In Gothenburg, in common with other parts of Sweden, there is a Special Transport Service (STS) for disabled people. To use the services, a person must have a doctor's certificate stating that they are disabled. At present approximately five per cent of the

city's population are authorised to use STS. Some 7 000 applications are made to join STS each year of which only eight to ten per cent is refused.

The Gothenburg STS has a call centre which handles between six and seven thousand calls a day and provides for about 6000 trips a day (2 million per year). Unusual for on-demand services, there is no book-ahead requirement: people can call for an immediate service – and approximately one-third do so.

The service is provided by a mixture of small buses and taxis. STS does not run any vehicles itself, but buys in services at a cost of € 28-29 million per annum. STS is working with Renault to develop a wheelchair-accessible taxi that is acceptable to all users.

One of the difficulties facing STS, which is mainly funded by a combination of local and national government payments, is the cost of the service. The two million trips provided in a year cost a total of €35 million, approximately € 17.5 per trip.

Gothenburg is developing a way to meet the travel needs of disabled people a reduced cost.. Called "Flexline", this service is designed to replace the older "service" routes with a minibus service that combines a fixed departure time from at least one end point with a demand-responsive, many-to-many service between pre-booked stops, other trip attractors and specific addresses within a defined service area. The ideal structure for one of these services is to operate with flexibility between two end points at major destinations (e.g. a shopping centre).

The service is booked in advance and incorporates a callback feature: the customer is called 15 minutes before the bus is due to pick them up. The services generally operate on a 30-minute headway from the timed end point, with a maximum of 55 minutes for end-to-end journeys. The vehicles used are 12 to 15 seat low floor buses, fitted with a manual ramp. The services already in operation have taken around 60-65% of former STS taxi trips at an average passenger journey cost of about €4.3: well below the average cost of STS travel. The Flexline Service is tendered by Västtrafik, but is managed by the STS.

At present Flexline carries about 200,000 passengers per annum, but it is intended to eventually cover the whole of Gothenburg, including replacing all the old service routes. Over the next five years it is planned to triple the number of Flexline services.

3.4.1. Commentary

In many ways services designed specifically with disabled people in mind are – and should continue – to undergo significant changes particularly in their relationship to mainstream conventional public transport. The increasing provision of accessible bus and rail services will mean that many disabled people previously unable to use ordinary services will be able to do so now or at least in the foreseeable future.

In this context, it is worth noting that work done by Gothenburg estimates that about 1.5% to 2% of the population will never manage without a special transport service and that a further 12% will occasionally need to use STS. The fact that there will always be a need for this more specialised provision argues strongly for greater integration between these services and mainstream transport. Merseyside has adopted this approach in its Local Transport Policy, seeking to develop the role of community transport from a service largely limited to transporting elderly and disabled people to one which encompasses a wider range of social objectives: filling in gaps in conventional services and meeting the needs of other disadvantaged groups.

The other area where further development is required was also highlighted by Gothenburg: the requirement for a wheelchair-accessible taxi that is acceptable to all users including non-disabled people. This requirement, and some of the difficulties associated with it, was the subject of an earlier ECMT study[1], but in this context the development of this type of vehicle would undoubtedly assist in the process of integrating more specialised services with mainstream public transport.

3.5. Transport Infrastructure

Much of the value of accessible vehicles is lost if the related infrastructure is inaccessible or inappropriately designed. Grenoble has carried out extensive research and development work to design accessible tram and bus stops, starting some 20 years ago. The principle adopted by Grenoble was that the bus services should be made as accessible as the tram.

The design standards found to be most effective for accessible bus stops were:

Overall length of bus boarding platform	14m (standard bus) 20m (articulated bus)
Overall breadth of boarding platform	2.1m (minimum) 2.6m if a shelter is provided
Gradient of access ramp at end of platform	3% (1 in 33)
Height of boarding area	21 cm
Safety Line	60 cm back from front edge of boarding area
Clear space between front end of bus shelter and front edge of boarding area	1.1m (minimum) 1.3m (preferred)

The safety line, which is colour contrasted with the surrounding surface, helps partially sighted people to keep clear of the bus rear view mirror, which overrides the edge of the platform. A tactile paving surface is provided where the forward door of the bus is positioned; ramped access for wheelchair users is at the centre door.

Experience has shown that a 21cm high boarding area is the best compromise between minimising the height of the step up to the bus and reducing the likelihood of damage to the vehicle as it

approaches the stop. Painted lines on the road surface help guide the driver to position the bus correctly, the bus should stop with its front level with the forward edge of the bus shelter.

It has been found that an angle of 65° to the vertical is best for the front face of the kerb with, if necessary, a drainage channel at the foot of the kerb of no more than 10 cm width. A width greater than this causes the bus to tilt. In effect the gutter can act as a positioning guide for the bus driver. The type of kerbstone used is Kassel, which has been found satisfactory, and has become well known under this nickname in the public transport community. Earlier kerbs suffered from some damage problems. It was also found that the road surface tended to rut because of the continued use of the same part of the road surface (especially when braking and accelerating). Strengthening of this part of the road has reduced this problem. In parenthesis, it is noted that driver training in correctly approaching and stopping at the boarding area is important, as is involving drivers in the design and development of the stops.

Apart from the specific design of the bus stops themselves, Grenoble is not in favour of the use of bus bays. The same view applies in Merseyside, where the PTE has produced a comprehensive and detailed code of practice on access and mobility, which includes guidance on the design of bus stops. This guidance notes that where a bus cape (a boarding area that juts out into the roadway) is provided, the height of the boarding area can be increased up to 24 cm as the bus approaches parallel to the boarder. At this height a low-floor bus with a kneeling mechanism can provide virtually level boarding. Placing a bus stop on a boarder (or a cape which juts out into the carriageway) has further advantage in that cars have to wait behind and the lane is free for the bus to move on to the next stop in a relatively congestion-free environment. If a bus has to stop in a bay, it can take time before it can pull out into the traffic stream. Bus boarders have a further advantage, as they effectively prevent illegal parking at the stop.

In most towns and cities, buses and trams provide the means of public transport, but in some larger cities, heavy rail (metro) systems are important.

Achieving access on older rail (metro) systems is more difficult. In Prague all new stations designed after 1990 have been designed to be accessible. Older stations are gradually being made more accessible, with the provision of passenger lifts (or modified freight lifts), access ramps, acoustic guidance systems for blind passengers and tactile guidance surfaces. In Liverpool, the height difference between the Merseyrail rolling stock and the platforms is approximately 22 cm, so at present, ramps are used to give wheelchair access. However, from 2010 new rolling stock will provide level access. In parenthesis, the new Grenoble tramway was designed with platforms 25 cm high and with trams that could be lowered to 35 cm allowing wheelchair access via a short ramp. In Gothenburg it was noted that some stops are shared by trams and buses. Where this is the case, the boarding area is 17 cm high to accommodate buses, versus the preferred height for tram only stops of 24 cm.

Improvements in access to the local rail stations in Merseyside have been made, as in Prague, with the provision of lifts, ramps, assistive measures for blind and deaf passengers, but because of the age of the infrastructure this process is necessarily fairly slow. All the bus stations in Merseyside, which are operated by Merseytravel are fully accessible.

The Bus Quality Partnerships in Merseyside referred to earlier, include the provision of accessible bus stops provided by Merseytravel. The Merseyside Bus Strategy sets out the improvements that need to be made to bus stops:

- New high quality bus shelters
- Improved footway surfacing within the vicinity of the bus stop
- Improved passenger access using dropped tactile crossings

- Provision of improved passenger information, including real-time information
- Enhanced lighting and better seating
- Improved bus bay carriageway lining involving the use of colour surface finishing
- Introduction of measures to achieve level boarding

Developing and implementing a programme of this kind requires, *inter alia* an audit of the accessibility of stops and their environment. The Danish Road Standards Committee has recently established a working group for the purpose of developing a method for accessibility audits of streets and pedestrian areas. The working group, know as "Accessibility for All" includes members from organisations of disabled people as well as engineers and representatives from local, regional and national road administrations. The group is producing a handbook with guidelines and checklists, which cover the whole project cycle from initial feasibility/planning through design to completion and maintenance. The guidance stresses the importance of involving user organisations, which include disabled people, the elderly and children.

The development of the accessible bus line 33 in Grenoble also involved an audit of all the bus stops conducted by SEMITAG with representatives from disability organisations. They classified the stops into four categories:

1. Stops that were already accessible with 21cm high boarding area
2. Stops not accessible, but which could be made accessible with minor changes and which would not need the bus to kneel.
3. Stops not accessible, but which could be made accessible with minor changes but where the bus would have to kneel to be accessible
4. Stops not accessible and which could only be made accessible by major works.

These approaches are systematic and consistent and should provide the basis for effective (and where necessary prioritised) improvement of the transport infrastructure.

It is worth emphasising the importance of enforcing parking restrictions at bus stops. In the UITP survey ten of the 19 cities said that there was a problem with illegally parked cars. In Germany a strict tow-away policy is being considered, while in London, Transport for London pays for a special police unit to enforce parking restrictions at stops.

3.5.1. Commentary

Although standards and policies of the kind described in this section can, and have been developed by the transport authorities, implementing them is not always straightforward. Where other local authorities are involved in creating an accessible environment difficulties can arise. In Grenoble, where there are 23 local authorities, different priorities may make achieving access difficult, even though these authorities can obtain 50% of the costs of accessibility improvements from the metropolitan authority. Merseytravel has also sometimes found it difficult to secure the co-operation of the local authorities (highway authorities) in implementing accessibility improvements.

In the case of Merseytravel there is a further problem arising because so much of the bus network is commercially operated by independent companies. It is obviously logical to concentrate resources – both accessible vehicles and infrastructure – on specified routes rather than scattering them around the network. Grenoble has a policy of making successive bus routes fully accessible and no route is advertised as fully accessible until all the bus stops have been adapted and all the buses are low floor (currently two bus lines are fully accessible). While sensible to ensure true accessibility, this approach may be difficult to implement since politicians (and companies) like to show their achievement without waiting for a long-term strategy to be fully deployed. Where a route is partially but not completely accessible, it is essential that information be given in timetables and on maps

of the route (including on the bus or tram) on which stops are or are not fully accessible. Prague also has a policy of only showing those bus routes as wheelchair accessible when they can guarantee that it will be fully adapted by low floor buses. At present about one quarter of the bus routes qualify for the wheelchair symbol on their bus timetable.

There are two other issues that must be taken into account. Illegal parking at bus stops happens all too often and negates the value of easy access to and from the bus. There must be effective and consistent control by the local authorities to prevent this. Secondly, it should be remembered that unless the wider pedestrian environment is improved and made more accessible, then some of the benefits of our accessible transport system will be lost.

In conclusion, it is essential that bus services should be seen as a complete system, not just as vehicles, as is still often the case. The bus system can be divided into the following components:

- Service offer: determining demand, planning services, arranging the route network and service schedule.

- Passenger services: marketing, customer support, corporate design, advertising, PR, passenger information, fare collection.

- Stops: types of stops, specifications, equipment, positioning, interchanges.

- Right-of-way: bus speed-up measures, bus lanes, busways, prioritisation at traffic lights etc.

- Operations: operational planning, operational control, system supervision, quality safeguarding, data system linkage etc.

- Vehicles: technical issues, types, accessibility, on-board information, driver cabin etc.

An attractive bus system requires more than operating new buses and erecting shelters. Actual requirements are:

- To incorporate all the above-mentioned elements, and,

- To co-ordinate the exploitation and further development of the individual subsystems in order to produce the largest possible combined effect and added value.

If this is not done, the efforts towards better accessibility will always be sub-optimal and disappointing for passengers.

3.6.   Information

There are two aspects to this topic: information about services and information while using a service. As mentioned above, both Prague and Grenoble indicate on timetables which public transport services are fully accessible by use of the international wheelchair symbol. Grenoble has a brochure "*Accessibilité pour tous*" (Accessibility for All) which describes the two accessible tram lines and the two fully accessible bus lines, together with a summary of their development and future plans to 2005.

Prague also has a brochure describing how accessible metro, tram and bus services are being developed and also a single sheet that shows the timetable for the operation of the special wheelchair accessible bus services plus a map identifying accessible metro stations.

On a broader basis, Merseytravel has an Access Guide to public transport facilities for disabled people in Merseyside. The guide includes advice on planning a journey, information on "Easy Access" bus services, concessionary travel, details of access at bus and rail stations etc. An example from this guide is given in Annex 3. Information of this kind, provided it is kept up-to-date, is invaluable for both residents and disabled visitors.

Since 2000 there has been a joint project in Gothenburg involving the national transport administrations, disability organisations and local transport authorities to improve access to

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public transport, which includes public transport service information on accessibility of stations, terminals and interchanges.

Information during a journey is important and can be widely different, ranging from information at bus stops and stations to dynamic information on the vehicle itself. Merseyside introduced dynamic information (service number, destination, expected time of arrival) at some bus stops, starting with its SMART bus system. On-vehicle audible announcements are now commonplace, but there is still scope for further development of in-vehicle visual information of the "next stop is…" type. In Grenoble the plan of the bus route inside the bus shows those stops that are not accessible, and there are plans for the synthesised audible announcements of the next stop to include this information. The innovative information system for blind and partially sighted passengers in Prague (APEX) has already been mentioned in Section 3.3.1 and should have applications in other cities, particularly where there are complex public transport systems. Prague Public Transport has also provided Braille timetable information at 40 bus stops.

The aim of transport information should be to provide relevant information throughout the journey, in effect from door to door.

3.7.   Driver training

The training of drivers and other transport and local authority staff in disability awareness is important. Without it some of the advantages gained by improved vehicles and infrastructure will be lost. Training should also encompass training drivers to make correct use of any new facilities such as the guidance and docking systems that are currently being developed for buses.

Training manuals and guides have been produced by a number of operators and transport agencies. These will form the basis of a supplementary report on "Good Practice for Staff Training" which is currently under preparation by the ECMT-UITP Task Force.

3.8. Costs and benefits

The general issue of the costs and benefits of improving accessibility has been examined in earlier ECMT studies[2]. When the first modifications to make buses more accessible were introduced, estimates were made of the additional costs incurred, but this type of calculation has become less and less relevant as the access "modifications" become incorporated in standard vehicles.

Similarly alterations made to transport infrastructure to improve access for disabled people are seldom separately identified. STIF and the Region Ile de France have issued a reference methodology, which includes improvements to the accessibility of bus stops, of which there are over 25 000 in the region. The average cost for a bus stop improvement is € 7 740. In Grenoble, the overall cost of a complete fully accessible bus boarder is around € 35 000.

A recent research project for the Department for Transport in the UK has included costs of improvements to bus and coach stops on a route between Bath and London. The building of a simple bus stop with a 24 square metre paved area (but not raised), new edging kerbs, a two-bay shelter, stop edge markings on the paved area plus a wheelchair symbol and on-road markings costs approximately € 8 250 of which the bus shelter accounts for some € 5 500.

In London, which has a total of approximately 17 000 bus stops, cost of making stops accessible are estimated as:

Full width bus boarder   15-18K €
Half width bus boarder   12-15K €
Raised kerbs (Kassel)   15-23K €

These costs include civil engineering costs, reasonable highway drainage costs, bus stop highway markings and footway regrading necessary when raised kerbs are used, but not exceptional items such as changing street lighting or moving a shelter.

However, it is difficult to separate out the proportion of costs associated with the "accessible" features and to do this would be suspect, if only because defining exactly what is an accessible feature needed by disabled users is often difficult.

Much that is done to meet the requirements of disabled people is of benefit to all passengers. It can be argued that since the ability of disabled people to use public transport is now (largely) accepted as a right, attempting to apportion costs to them would be as irrelevant as attempting to apportion costs between, say, male and female transport users.

There is an argument, however, for looking at the extent to which disabled people use public transport and whether that is changing as a result of improvements in the services. Data on this seem to be rather limited. Grenoble has recorded an increase of 23.4% in the number of wheelchair passengers using Bus Line 11 over the period 1999-2001. The numbers of wheelchair passengers using the tram services have also increased, though no specific figures are available. More than 300 wheelchair passengers use Grenoble's buses and trams each day equating to about 86 000 journeys a year. In parenthesis, general usage of the bus services has increased by 35% and travel time has been reduced by 20% through a combination of improved access (e.g. quicker boarding) and bus priority measures. It was also noted that the improvements had led to a reduction in boarding and alighting accidents, which is another clear benefit.

In Prague some very limited statistics for 1998 showed that over a period of one week the two bus services with guaranteed low floor vehicles and three other services with some low floor buses carried nine wheelchair passengers. In 2001, 342 wheelchair passengers were carried over a period of three weeks on 39 000 bus service journeys. The special transport services in Gothenburg (and elsewhere) do maintain records of ridership, but reliable data on the use of mainstream public transport -- especially over time -- seems to be lacking.

The increase in ridership found in Grenoble is mirrored in the experience of the majority of the companies in the UITP survey. Two-thirds of the companies that had introduced low-floor accessible vehicles said that this increase in comfort and ease of use has led to higher ridership, even by non-mobility-impaired people. Attempts to quantify this increase have proved to be methodologically difficult, but a number of the cities reported increases of 20 to 25%. This is undoubtedly an argument in favour of speeding up the pace of introduction and deployment of accessible services.

On a broader basis than just measuring the number of wheelchair users, there are monitoring surveys that provide information on progress in the development of accessible transport. Merseyside has Bus Tracking Surveys, which measure customer satisfaction levels and progress in meeting targets set in the conurbations Bus Plan. The Bus Tracking Survey includes questions on ease of boarding and easy to read destination screen; features that are of particular importance to disabled people though of relevance to all users. This type of survey, which has been running since 1993 in Merseyside, could usefully be extended to incorporate some more features of direct relevance to disabled people.

The survey monitoring the progress towards meeting the aims of the Bus Plan, includes numbers of accessible/low floor buses, numbers of new shelters installed at bus stops, improvements to bus stations. Again this type of survey could be extended to include features of particular importance to disabled travellers.

3.9.   Future planning

All of the cities have future plans that deal with, *inter alia*, further improvements in accessibility. In Grenoble, by the end of 2002, 280 stops have been upgraded to be fully accessible, i.e. 31% of the total. Forward plans by SMTC in Grenoble include 450 accessible bus stops (approximately 50% of the total) by the end of 2005 and the introduction of accessible trolleys in 2003. By 2005, 640 bus stops and 130 tram stops will be accessible; the

figure for tram stops includes the new third (c) line, on which construction is planned to start in 2003 with completion in 2005.

Prague City Transport has a planned programme to 2010, the same year as that used by the City of Prague authority in its planning work. The plan moves forward on a rolling basis and includes, *inter alia*, the introduction of low floor trams in 2004, a continuing programme to bring more low floor buses into service (currently 225 are low floor out of a fleet of 1 300) and further accessibility improvements to metro stations.

Sweden has a national plan to make all public transport accessible by 2010 by which time it is expected that 90% of disabled people will be able to use the mainstream services. There is a "door-to-door" collaborative project, which started in 2000 with the national rail, road, maritime and civil aviation authorities, the Swedish Disability Federation and the Public Transport Agency. The overarching aim of the project is to build on the knowledge gained during the 1990s of the mobility needs of disabled people and to use this to determine how best to achieve accessibility for disabled travellers. Västtrafik is preparing an action plan for Gothenburg, which will improve accessibility at terminals, larger transport centres and vehicles.

Merseytravel has prepared a Local Transport Plan which covers a five-year period in considerable detail (2001/2 to 2005/6) and which is set in the context of a longer (ten year) strategic plan. This includes the development of a fully accessible transport network, extension and integration of community transport services (as mentioned in Section 3.4), improving the accessibility of public transport infrastructure and working with the independent transport operators that provide the bulk of local transport services to secure increased numbers of low-floor accessible vehicles.

It is clear from the examples of the cities studied and also from other sources, for example that of the Syndicat des Transports d'Ile-de-France (STIF), that it is important to plan for improvements in access across all the modes of public transport available -- buses, light rail, heavy rail, and special services. The

objective should be to achieve a consistent, integrated public transport system.

Notes

1. "Economic Aspects of Taxi Accessibility" OECD Publications Service, Paris 2001.

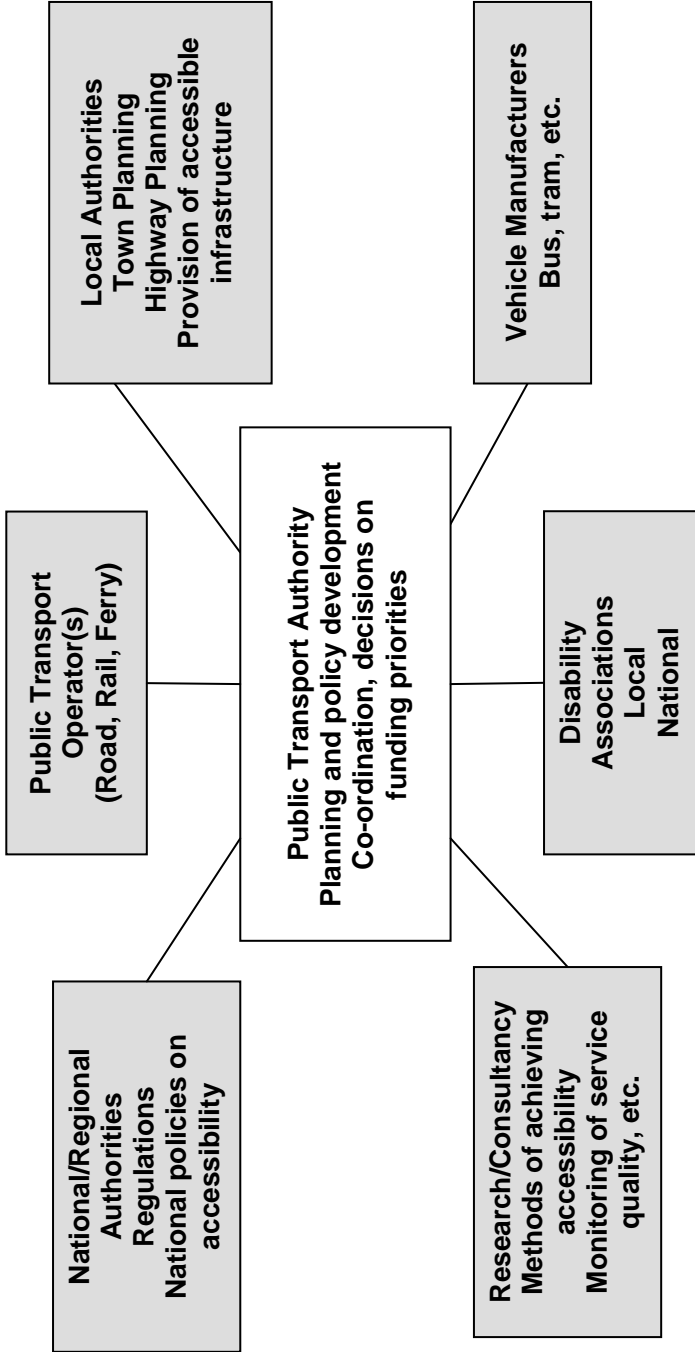2. "The Benefits of Accessible Transport", OECD, Paris, 1989.

Chapter 4

CONCLUDING DISCUSSION

In some respects, the four cities that form the basis for much of this study are very different one from another, particularly in their local government structure and the relationship between local authorities and local transport operators. In other ways there are strong similarities, especially in the stated intention to achieve a fully accessible public transport service and to do so within a defined period (e.g. 2010 in the case of Merseyside and Gothenburg).

The structure of local government is a given so far as this report is concerned but it can be said that whatever that structure is, there needs to be a clear relationship between the various elements, not just the local (city) authority and the transport operator(s) but also disability associations, research organisations and authorities responsible for transport infrastructure. The figure below, which is adapted from the organisational structure in Grenoble, summarises the kind of structure that is needed to create a coherent integrated and accessible public transport network.

In the context of accessibility, it is essential that both public transport authorities and operating companies should work closely with disability associations. The authority responsible for forward planning should have a section with specific responsibility for disability-related issues, as in for example, Merseyside and Prague. That section can act as the point of liaison with local and national disability organisations and should also, in addition to providing input to the transport planning process, be responsible for preparing information on accessible services.

Figure 1. **Organisational Structure**

Local Authorities
Town Planning
Highway Planning
Provision of accessible
infrastructure

Vehicle Manufacturers
Bus, tram, etc.

Public Transport
Operator(s)
(Road, Rail, Ferry)

Public Transport Authority
Planning and policy development
Co-ordination, decisions on
funding priorities

Disability
Associations
Local
National

National/Regional
Authorities
Regulations
National policies on
accessibility

Research/Consultancy
Methods of achieving
accessibility
Monitoring of service
quality, etc.

Similarly, units with responsibility for disability issues should be incorporated in the customer (or marketing) departments of passenger transport operating companies. Being part of a general "customer oriented" department would reflect the philosophy and expectations of disability associations that they should be regarded as ordinary public transport users rather than people who are treated as different or "special".

The establishment of an organisational structure like that shown in the figure should not be difficult where the public transport services are owned and operated by public bodies or where, through the process of tendering services to private operators, the public authority can still exercise control over vehicle design and service levels. Where much of the actual operation of services is outside the control of the public authority, as in Merseyside, agreements that are enforceable between the authority and operators are needed if effective, planned progress in improving access is to be assured.

In this context, national regulations on the provision of accessible public transport perhaps assume greater importance, since they can require the use in service of accessible vehicles by a given date even if operators are reluctant to do this. In some places, financial incentives may also help to speed up the introduction of accessible services and infrastructure. For example, in France outside Paris, authorities grant incentives of up to 30% of the cost when combined with accessible buses, accessible bus stops and an effective policy to fight illegal parking at bus stops.

It was noted that in Merseyside problems have arisen because, although low-floor accessible buses are being brought into service in increasing numbers, they (the operators) are not concentrating these vehicles on a route-by-route basis but are spreading them across the network. It is much better, as in Grenoble and Prague, to concentrate on making whole routes accessible (vehicles and infrastructure). Disabled users can then be guaranteed an accessible service on that route.

The importance of matching accessible vehicles with accessible transport infrastructure is obvious, but this process should go hand-in-hand with the wider development of accessible urban structures, which is one reason why the organisational structure (Figure 1) should include the local urban planning authority.

The cities involved in this study have quite detailed plans for the next five to ten years to implement accessible services. Having a forward plan of this kind, with specific targets identified is important. It is also important to monitor progress towards these targets. Some of that monitoring is easy: the number of accessible low floor vehicles in service, the number of routes fully accessible etc., but there does seem to be a lack of monitoring changes in use made by disabled people of transport services.

While it may be argued that full access for disabled people is a right, and as such does not require specific measurement of use by them, providing access is still a relatively recent development. Careful monitoring can show how effective particular improvements in accessibility are and may help in identifying where there are missing links in the accessibility chain. It is also essential to ensure that monitoring covers all disabilities, not just the more obvious ones like wheelchair passengers. Design of accessible vehicles has been extensively researched and, in general, is well understood and applied in practice by manufacturers.

Remaining problems appear to be more concerned with the use of some of the accessibility features particularly the use of ramps on buses and the securing of wheelchair passengers on vehicles. As mentioned earlier, driver training will be the subject of a separate report by the Task Force.

As has the UITP, both Gothenburg and Grenoble have estimated that even when the whole mainstream public transport system is accessible there will still be a minority of disabled people who will need more specialised services. Gothenburg, as in Sweden as a whole, has a comprehensive special transport

service (STS). While offering a good service STS is expensive, as are many comparable services in other countries. The development of the Flexline Service in Gothenburg offers a more economical alternative for a substantial proportion of current STS users and is a system that could be considered by other transport authorities.

The Merseyside approach to this issue is also an interesting one, seeking to use these more specialised services both to fill in gaps in mainstream transport services and to broaden their use to meet other societal objectives.

Just as the design of buses and trams to provide full accessibility is now widely known and used in cities similar to those in this study, so too is the design of accessible transport infrastructure. The design of accessible bus stops done by Grenoble in co-operation with disability organisations and bus drivers (see Section 3.5) can be regarded as setting a standard for other authorities to achieve.

It is recognised that the development of integrated, fully accessible public transport services takes a long time, particularly the adaptations needed to the infrastructure. Even with a consistent and strong commitment to achieving full accessibility it has taken Grenoble twenty years to equip two fully accessible tram lines and two bus lines. The scale of time and money required to develop fully accessible services argues strongly for long-term planning, a careful selection of priorities and a degree of control by the organisation responsible for overall planning to ensure that as accessible services are introduced, so too are improvements to the infrastructure.

Chapter 5

CONCLUSIONS AND RECOMMENDATIONS

Whilst the organisational structure of public transport and local authorities varied in the four cities examined, a number of key conclusions can be drawn from their experience in improving the accessibility of their transport systems.

Role of national governments in improving accessibility of local public transport

- National legislation requiring the provision of fully accessible public transport over a period of time provides a framework within which local authorities and transport operators can work together to achieve accessibility. The existence of such legislation is important in all circumstances and is essential when public transport services are provided solely or largely on a commercial basis.

- Although implementation of measures to improve the accessibility of public transport is mainly a matter for local authorities and operators, national government has an important role in setting the legal framework, providing incentives and producing guidance on standards of good practice.

Co-operation between local authorities and public transport operators

- Close, continuing and frequent co-operation between local authorities, local transport authorities and transport operators is essential. Where these are all public authorities, or where there is control over private operators,

there is no evidence to suggest that formal, contractual agreements are essential.

- Where operators are independent, authorities should stipulate clearly the accessibility level required in agreements that are contractually enforceable between the public transport authority and the operators.

Planning for accessibility

- Forward planning, with a time horizon of approximately ten years, is necessary. More detailed plans should cover a period of five years, and should be updated on an annual basis.

- There should be regular monitoring of progress towards achieving forward plan objectives. Monitoring should cover improvements to public transport infrastructure, introduction of fully accessible vehicles (buses, trams, trains) and use made of accessible services by disabled people and others with reduced mobility.

Co-operation with disabled people in defining and developing better accessibility to transport

- Collaboration and consultation with disability associations on all aspects of accessible transport is essential. This should cover vehicles, infrastructure and information. The public transport authority should have a focal point specifically charged with dealing with all disability issues. Care should be taken to ensure that consultation covers the whole range of disabilities: physical, sensory and cognitive.

Ensuring full accessibility: vehicles, infrastructure, and stops

- In urban areas, gapless and stepless boarding should become the norm. This requires action by both local authorities and operators. Infrastructure modifications should be undertaken to allow such boarding, either by

making existing high platforms accessible or by arranging street-level infrastructure to maximise the benefit of low-floor vehicles. The authorities responsible for the transport infrastructure should conduct accessibility audits of bus and tram stops as well as related infrastructure using consistent standards. The objective should be to match the introduction of accessible vehicles with appropriate infrastructure. If this is not done, much of the value of accessible vehicles will be lost.

- While the development of accessible bus and tram stops is essential, it is also important to ensure that the surrounding pedestrian environment is also accessible. This responsibility rests primarily with the local authority.

- The effective enforcement of parking restrictions at and around bus stops is absolutely necessary, otherwise the benefit of low-floor, step-free access is lost. This requires stringent, consistent and enforced policy at the local authority level.

- In order to make construction provisions more effective, affordable and easier to design, it is desirable for local authorities, operators and vehicle manufacturers to rely on some degree of standardisation in wheelchair dimensions and restraint devices for transport purposes. Wheelchair manufacturers should adopt existing ISO standards, and associations of wheelchair users should make their constituencies aware of the standards on which public transport vehicle manufacturers are basing their designs for wheelchair accessibility.

Specialised services

- Specialised services will continue to be needed by some of the most severely disabled people, as well as to provide connecting services for those people otherwise unable to reach public transport. It should not, however, be regarded as an acceptable substitute for accessible public transport, but rather as a complement to it.

Training

- Ensuring that drivers and other public transport staff have disability awareness training is essential to the effective delivery of accessible services.

Information

- As services become fully accessible, operators should ensure that accurate up-to-date information and publicity are made available in appropriate (audio/visual) formats for disabled people. Good, comprehensive information is essential if disabled people are to be encouraged to use accessible services. Information should cover the whole transport chain: pre-journey and during the trip.

- Some operators believe there are problems associated with particular features of accessible vehicles, notably buses. Use of a ramp and securing of wheelchair passengers are examples. Continued exchange of information and good practice on these aspects of operation between authorities and operators would be helpful.

Costs and benefits

- Clearly there are costs associated with creating a fully accessible public transport system, but it should be remembered that there are financial benefits to be had from increased use of the public transport services.

- Additional investment and financing costs should be incorporated into long-term transport development plans to the extent possible, and discussed and shared based on responsibility and jurisdiction.

- Opportunities should be sought for cost-effective improvements to accessibility based on better enforcement of existing traffic laws (e.g. fines for illegal parking in and around bus stops).

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UITP SURVEY OF TRANSPORT COMPANIES AND AUTHORITIES

UITP survey on better accessibility to buses

In 2002, as part of the work of the joint UITP-ECMT Task Force on Improving Access to Public Transport, the UITP carried out a survey of 19 transport authorities and companies in major cities to find out their progress towards achieving accessible public transport.

Following are the overall findings of the survey, which provide a "snapshot" of progress in improving accessibility within a sample of UITP member companies at that time.

1.   Respondents to the survey

Transport companies or transport authorities in the following cities responded to the survey:

- Amsterdam
- Barcelona
- Budapest
- Cologne
- Copenhagen
- Düsseldorf
- Geneva

- Hong Kong
- London
- Montreal
- Paris
- Prague
- Rome
- Stockholm

- Stuttgart
- The Hague
- Toronto
- Vienna
- Wallonia

These 19 cities cover a wide range of size profiles, as shown in Table A.1.

Table A.1. **Population of urban area**

<500 000	500 000-1 Mio	1-2 Mio	2-4 Mio	> 4 Mio
Geneva The Hague	Amsterdam Cologne Düsseldorf Stuttgart	Barcelona Budapest Vienna Prague Copenhagen Stockholm	Montreal Rome Toronto (Wallonia)	Hong Kong Paris London

This group of cities represents an overall fleet of nearly 30 000 buses, ranging from 200 buses in Cologne to 6 400 buses in London, and an average of 1 580 buses per fleet. Currently 10 700 to 14 500 of the overall 30 000 are low-floor.

Figure A.1 shows the size of the bus fleet and the proportion of buses that are low-floor.

Figure A.1. **Number of low-floor buses in fleet (2001)**
(absolute numbers)
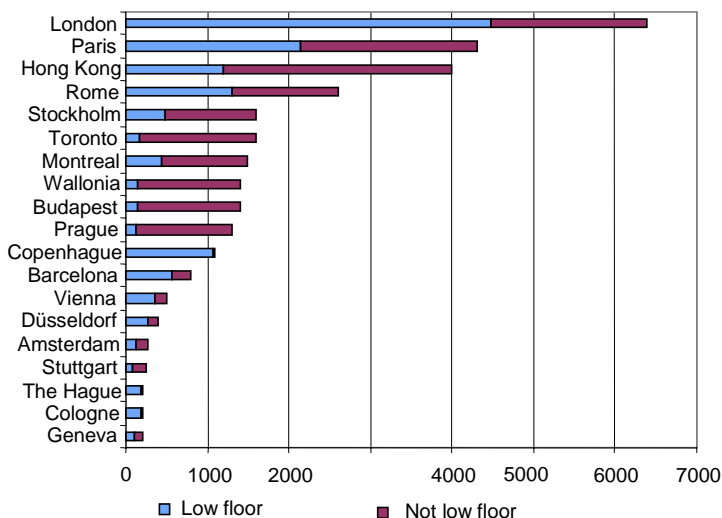
2.   General information

2.1.   *In what operating environment do your vehicles run?*

Responses varied to this question, but all cities operate buses at least partly in an urban or dense environment. The scope of the study is therefore valid for city buses.

2.2.   *What proportion of low-floor vehicles do you have in your current fleet? (%)*

The number of cities with 0-20%, 20-40%, 40-60%, 60-80% or >80% of their fleets as low-floor is well balanced: 4, 4, 4, 4, 3 respectively for each of the categories.

Figure A.2. **Percentage of low-floor buses in fleet (2001)**

□ Accessible buses ■ Not low-floor
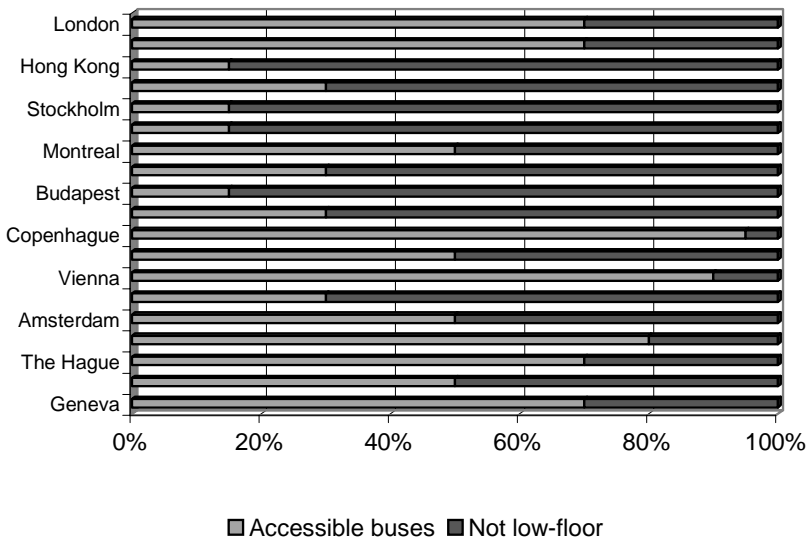
Less affluent cities in Central and Eastern Europe (CEE) appear to be slightly behind in terms of the accessibility of their bus fleets, while in more affluent cities outside the region, the

smaller fleets appear to be further along the road to accessibility than the very large fleets; especially notable is the case of Copenhagen.

2.3. *What proportion of low-floor vehicles do you purchase in new vehicle orders?*

Virtually all cities responding to the survey purchase 80% low-floor buses. One can assume that most cities surveyed buy systematically <u>only</u> low-floor vehicles. The only two exceptions in the sample are cities from CEE.

We can therefore expect bus fleets to be nearly integrally low-floor within 10 to 12 years.

3. Partnerships between public authorities and operators

3.1. *Is there, in your city/region, a clear commitment to improve accessibility to public transport?*

Survey responses showed that only one city noted no explicit policy in favour of transport for persons with reduced mobility (PRM) in public transport.

As shown in Table A.2, survey results show that accessibility improvements are most-often initiated by local authorities (in 12 cases) or in co-operation with local authorities. In 8 cases, the operator was the driving force, and in 4 cases the PRM associations took the initiative.

Analysis of the historic situation and its evolution seems to indicate that there may be a perception bias from respondents/operators. Indeed, operators have often been reactive, whilst associations have been more demanding/proactive at earlier stages. In any case, results here should be considered with some caution.

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Table A.2. **Initiative-taker/Accessibility "Champion"**

	Local Authority	Operator	Associations
Barcelona	■		
Geneva		■	■
Düsseldorf	■	■	
Cologne	■		■
Rome	■		
Stuttgart	■		■
The Hague			
Paris	■	■	
Copenhagen			
Montreal		■	
Prague			
Hong Kong	■	■	
Amsterdam	■	■	■
Budapest	■		
Wallonia		■	■
Stockholm	■		■
Toronto			
London	■		
Vienna	■		

3.2. *Measures to improve accessibility*

Special or dedicated transport services are still mentioned by 11 cities in spite of their high costs, whilst low-floor vehicles are mentioned in all 19 cities. 13 cities invest in accessible infrastructure and 5 have a special fare policy for PRMs. This seems to confirm the "90/10 principle": Accessibility policies can enable 90% of PRMs to use mainstream public transport, whilst 10% will still need specific provisions.

3.3. Comment on the partnership with your local authority to improve accessibility

Survey responses showed that co-operation is considered essential. The local authorities are responsible (at least in part) for infrastructure adaptation. In some cases, the local authorities also grant specific funding if accessible vehicles are purchased.

Three cities explicitly mentioned that the local authorities acted as a facilitator between the PRM associations and operators, and structured the co-operation in "advisory committees".

4. Operational and legal data

4.1. "Accessibility for PRM is an advantage for all passengers" it is often said. In your company, have accessibility improvements led to increases in patronage?

Two-thirds of the sample considered that accessible transport has led to overall increases in patronage. However, methodological questions make quantifying this difficult.

Budapest indicates a 20% increase in PRM patronage and Cologne 25%, but we can consider that the benefit of accessibility (ease of use) has also had a positive increase in patronage overall.

4.2. What kind of obstacles are you faced with to implement better accessibility?

Inadequate infrastructure was the most-often cited obstacle to accessibility (12), followed by inadequate enforcement of parking policy (10), financing issues (9) and poor weather conditions (2). Logically, the latter is only mentioned by cities with particularly severe winter weather (e.g., Copenhagen and Montreal).

Interestingly, no respondent indicated problems with the regulatory framework.

Table A.3. **Barriers to accessibility**

	Inadequate infrastructure	Lack of parking enforcement	Weather conditions	Finance issues	Regulatory issues
Barcelona		■		■	
Geneva	■			■	
Düsseldorf	■	■		■	
Cologne					
Rome	■	■			
Stuttgart	■	■		■	
The Hague				■	
Paris		■			
Copenhagen	■		■		
Montreal	■		■		
Prague					
Hong Kong	■	■			
Amsterdam	■			■	
Budapest					
Wallonia	■	■			
Stockholm		■		■	
Toronto		■		■	
London		■			
Vienna		■			

4.3. *What kind of boarding aid systems do you have?*

In cities surveyed:

Kneeling buses only were cited in 5 cities;
Kneeling buses and manual ramps – most frequently cited -- are in 11 cities;
Kneeling buses and automatic ramps were available in 8 cities;
Ramps were mostly available at the middle door, rarely in front;
Lifts for high-floor buses were cited in 2 cities.

Table A.4. **Boarding aid systems**

	Lift	Kneeling	Manual Ramp	Automatic Ramp
Barcelona		1		1
Geneva			1	
Düsseldorf		1	1	
Cologne		1	1	
Rome		1	1	
Stuttgart		1	1	
The Hague		1		
Paris		1		1
Copenhagen		1	1	1
Montreal		1		1
Prague	1	1	1	
Hong Kong		1	1	
Amsterdam		1		
Budapest		1	1	
Wallonia		1	1	
Stockholm		1		
Toronto	1		1	
London		1		1
Vienna		1	1	

Figure A.3. **Type of ramps**

Ramp type

- Manual Ramp
- Automatic Ramp
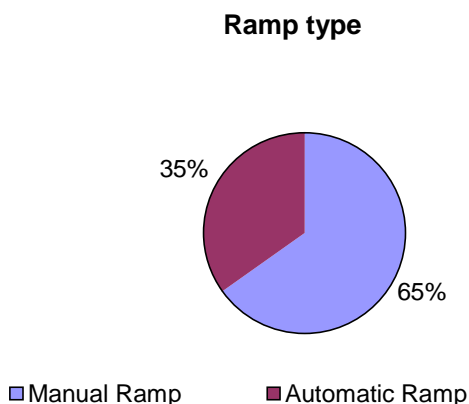
4.4. *How often are these devices requested during bus operations?*

Responses to this question varied greatly. Given that the responses were based on different references (bus/fleet; day/week/year), an attempt was made to extrapolate the results to a common reference: yearly ramp usage per bus (equipped) based on a 6-day week.

On this basis, results ranged from 468 in Barcelona to 1 in Copenhagen. Paris, Cologne, Düsseldorf and Toronto cited an average use of once time per week per vehicle. One might surmise that usage would increase with the number of accessible vehicles (supply encouraging demand). However, no clear correlation could be discerned from the survey.

4.5. *In cases where a manual ramp is available, who operates it?*

Survey responses showed that generally, company staff operates the ramp.

In 4 cases, fellow passengers operate the manual ramp. In all cases, the issue of cashbox security was cited as a reason for the

driver not to leave his/her workplace (in addition to agreements with unions).

4.6. What are the legal conditions / procedures for the driver to leave his work place (brake, engine, cashbox, etc.)? Is the driver's workplace limited to the driving cabin or to the immediate bus environment?

According to cities responding to the survey, when the driver has to operate the ramp, procedures for leaving the cabin are not always formalised. Generally, however, the following measures are often required: putting on the hand-brake, switching off the engine (except in Hong Kong), locking the cash box and the driver's cabin (if possible).

4.7. Which safety systems are provided for operation of the ramp (for ramp users, fellow passengers and third parties such as pedestrians)?

According to the survey, most systems have safety devices linked to the brakes. Only Budapest and Copenhagen are true exceptions to this, as both have manual ramps. The Hague and Amsterdam have kneeling buses without ramps.

Six cities have light signals, seven have sound signals, seven have obstacle sensors (mostly in the case of automatic ramps).

Three cities have all safety devices simultaneously (redundancy). In these cities, there is even an extra safety provision -- an interlock or sensor to detect proper and complete closing of ramps.

The survey does not specify whether these requirements are national or local.

It is interesting to note that Stockholm has only a few buses with ramps, but a high degree of safety redundancy.

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Table A.5. **Safety system**

	Brake	Gearbox	Light	Sound signal	Obstacle sensor
Barcelona	1		1	1	1
Geneva					
Düsseldorf	1				
Cologne	1				
Rome	1				
Stuttgart	1		1		1
The Hague					
Paris	1				
Copenhagen		1			
Montreal	1	1	1	1	1
Prague	1				
Hong Kong	1	1	1	1	1
Amsterdam					
Budapest					
Wallonia	1	1	1	1	1
Stockholm	1	1		1	1
Toronto	1		1	1	
London	1			1	1
Vienna	1				

4.8. *In case of an incident with injuries due to ramp operations, with which civil liability is the transport company faced? Is there any relevant case law precedent?*

This is an extremely complex issue. 11 cities report no such incident has occurred to date. Two other cities do not have ramps. Out of a sample of 19 cities, 5 may have had problems, but do not mention it specifically.

In most cases, the company would be held liable for any damages (civil, not penal). In five cities, the insurance company

would cover such liabilities. However, it is not clear whether they would be covered by the regular vehicle insurance, the company's insurance or under a separate insurance policy.

4.9. In the particular case where manual ramp operations by third parties (typically a fellow passenger) lead to injuries, what are the consequences for the transport company? Is there any relevant case law precedent?

According to the survey, very few systems allow fellow passengers to use the ramp themselves. The lack of information provided probably indicates that no incident of this nature has been registered.

EXCERPTS FROM THE GUIDELINES AND STANDARDS/NORMS FOR PHYSICAL ACCESSIBILITY (GOTHENBURG, SWEDEN)[1]

Methods for defining accessibility

The thematic group has completed the following process:

1. Assembling available knowledge.

2. Evaluating collected knowledge/documentation.

3. Bringing together the knowledge.

4. Defining the accessibility needs of people with different disabilities. This may go beyond legislation. (...)

5. Matching the accessibility needs to the organisation/activity best placed to respond to the needs (e.g. different transport means).

6. Formulating the comprehensive guidelines with a view to creating an understanding of the objectives to be met with support from the standard/norm.

This means that installations will be realised according to:

A. Guidelines

B. The Green standard/norm: this involves bringing together and evaluating different needs in relation to:

- Legal requirements.

- Regulations.

- Recommendations.

- Plausibility.

- Autonomy.

- The activity's know-how in the field.

- Political evaluation.

C. The Yellow standard/norm: this denotes that functional requirements make the facility accessible to some but not to all, that is to say:

- One need has been addressed, but not another.
  (e.g. visual or auditory impairment).

- The measurement requirements have not been met for all, e.g. an electric wheelchair for outdoor use needs more space than an electric wheelchair for restricted outdoor use.

- The legal requirements have been met, but requirements to meet the "green" standard are more extensive and have not been met.

- Deficiencies in accessibility for people with certain needs can be compensated for by personal service.

D. The Red standard/norm denotes that neither defined needs nor legal requirements have been met.

Note

1. This annex is translated from the original Swedish and is in preliminary form. It will be finalised for the published version of this document.

Annex 3

**EXCERPTS OF INFORMATION AVAILABLE FROM THE
MERSEYSIDE ACCESS GUIDE
(MERSEYTRAVEL, UK)**

1. Information provided for a bus station

Birkenhead Bus Station

Birkenhead Bus Station has all the latest facilities and is located on Claughton Road. Conway Park rail station is just four minutes walk away. The bus station is adjacent to the indoor market and major shops.

Bus Station Access

- Tonal colour contrasted directional pathway through the centre of bus station to assist blind and partially sighted people.

- Tactile controlled and uncontrolled crossings with rotating cones to assist blind and partially sighted people.

Ticket Hall/Waiting Area

- Travel Centre with induction loop system.

- Information displays and TV monitors with bus information.

- Coin-operated public pay telephone.

- Security personnel present 24 hours.

- CCTV.

- Seating.

- Coin-operated toilets (not accessible).

Additional Information

- Accessible WC just outside market hall and available 24 hours. RADAR key necessary.

- Accessible WC in the market hall available during shopping hours.

- Accessible "Black cabs" operate from the town centre

2. Example of information provided for a rail station

Hooton – Wirral Line

Location: Hooton Road.

Interchange between lines for Chester and Ellesmere Port.

Station Access

- Major park and ride station (small parking charge). Staffed Monday to Saturday.

- Designated disabled parking spaces within the car park (35p per visit or £1.75 for 6 visits).

- Dropping off and picking up only to the right hand side of the ticket office.

- 15cm kerb on to pavement to ticket hall.

- No dropped kerbs between car park and station entrance.

Ticket Office

- Rain gully at entrance, otherwise level.

- Induction loop facility.

- Shop in foyer.

- 2 phone boxes outside the station entrance (coin and card).

- Bike racks.

- Post box outside station entrance.

Platform Access

- Shelters with seating on platform.

- Timetable information on platform.

- Platform lighting good.

- Clocks.

- Coin/card telephone and Help Points on Platform 1, 2 and 3.

Bus Interchange

- Bus stop outside station for services to Mold, Chester, Neston and Ellesmere Port. For further information, ring the Chester info line on: 01244-602666.

Additional Information

- CCTV.

Annex 4

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Questionnaire on the quality of OECD publications

We would like to ensure that our publications meet your requirements in terms of presentation and editorial content. We would welcome your feedback and any comments you may have for improvement. Please take a few minutes to complete the following questionnaire. Answers should be given on a scale of 1 to 5 (1 = poor, 5 = excellent).

Fax or post your answer before 31 December 2004, and you will automatically be entered into the prize draw to **win a year's subscription to *OECD's Observer magazine*.***

A. Presentation and layout

1. What do you think about the presentation and layout in terms of the following:

	Poor	Adequate		Excellent	
Readability (font, typeface)	1	2	3	4	5
Organisation of the book	1	2	3	4	5
Statistical tables	1	2	3	4	5
Graphs	1	2	3	4	5

B. Printing and binding

2. What do you think about the quality of the printed edition in terms of the following:

Quality of the printing	1	2	3	4	5
Quality of the paper	1	2	3	4	5
Type of binding	1	2	3	4	5
Not relevant, I am using the e-book	❏				

3. Which delivery format do you prefer for publications in general?

Print ❏   CD ❏   E-book (PDF) via Internet ❏   Combination of formats ❏

C. Content

4. How accurate and up to date do you consider the content of this publication to be?

1   2   3   4   5

5. Are the chapter titles, headings and subheadings…

Clear   Yes ❏   No ❏
Meaningful   Yes ❏   No ❏

6. How do you rate the written style of the publication (*e.g.* language, syntax, grammar)?

1   2   3   4   5

D. General

7. Do you have any additional comments you would like to add about the publication?

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....

Tell us who you are:

Name: .... **E-mail:** ....

Fax: ....

Which of the following describes you?

IGO ❏   NGO ❏   Self-employed ❏   Student ❏
Academic ❏   Government official ❏   Politician ❏   Private sector ❏

Thank you for completing the questionnaire. Please fax your answers to:
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* Please note: This offer is not open to OECD staff.