

REPORT ON IMPROVED ACCESS TO TRAINS

Introduction and Background

ECMT has been working actively on improving transport for people with mobility handicaps for several years. Ministers of Transport have strongly supported this work and many countries have made major efforts to improve access and services for people with mobility problems. Ministers have accepted that the issue is an important transport question and concerns a large and growing number of people. Data from several countries show that over 10 per cent of the population have difficulties with transport in varying degrees. Wheelchair users make up only a small part of this percentage.

As part of this work, a technical seminar on access to trains was held in March 1990 and brought together experts from many Member countries. The conclusions of the Seminar were developed by the ECMT Ad Hoc Group on Transport for People with Mobility Handicaps into a Resolution which Ministers adopted in November 1990.

Among the recommendations in the Resolution was the following:

"that, for national and international railways, guidelines be drawn up urgently to cover common standards both for specialised equipment, such as lifts (including acceptable wheelchair dimensions, lift platform size, lifting capacity and other safety and operational features) and for access to toilets and other facilities within the train. Such guidelines, which should be drawn up in conjunction with the UIC, should also include an international action programme for implementation; "

The European railways and their representative organisation UIC have been concerned for many years with improving services for people with mobility handicaps, particularly with the most difficult problem of transporting people in wheelchairs. Significant progress has been made by many networks in recent years. Much work is underway in the overall context of transport for disabled people, especially as regards commercial aspects, production, rolling stock and fixed installations.

Following an exchange of letters between the Secretary General of ECMT and the Secretary General of UIC, an Expert Working Group with representation from UIC and ECMT was set up to begin to implement this recommendation.

The principal objective of this work is to ensure that people with mobility handicaps (including those in wheelchairs) can travel by rail throughout Europe in comfort and dignity, confident that the means used to provide access are compatible between different countries. The purpose of this report is to set out the means by which a disabled person, including one confined to a wheelchair, can board or alight from all Intercity national and EuroCity international trains at all stations throughout Member countries.

This report focuses on implementing the recommendation above. It is however recognised that improving access to railway systems requires action in several areas, including improving railway stations, better information provision and staff training and appropriate ticketing and fare systems. This report does not deal with these aspects of railway services which will need separate action. It is also recognised that action is required to coordinate access between transport modes throughout the transport chain. The ECMT is pursuing this issue in separate initiatives.

The report is divided into two main parts:

Part I. examines mainly the issues in achieving wheelchair access to Intercity national and EuroCity international trains. Other trains, such as rapid or express regional or suburban trains, are not specifically included at this stage, though many of the recommendations are equally relevant to them.

Sleeper trains are not treated. Operational considerations such as the carriage of essential medical equipment, e.g. oxygen cylinders, respirators, portable dialysis machines are not treated in this report but will be the subject of separate work. While this part treats mainly access to trains for passengers in wheelchairs, it should be noted that all other passengers, including many who do not have disabilities but who are, for example, travelling with luggage, small children, etc. may benefit from the improvements proposed. It should also be noted that the proposals apply to mainline staffed stations.

Part II. examines access and other improvements for ambulant and other disabled people and for people with sensory impairments.

I. Facilities for passengers in wheelchairs

Access to trains

UIC is about to agree on standard station platform heights of 550 mm and 760 mm for international traffic. To implement these standards will take many years. Therefore it is necessary to establish common standards for access to rolling stock which take account of the differing platform heights existing in different countries and in some cases in different regions of the same country.

There are technical (e.g. standardised European coupling and buffer heights) and other difficulties in applying to mainline trains the low floor technology that is appearing for trams, buses and suburban trains. This is partly due to the problem with platform heights but also includes problems relating to introducing smaller wheel sizes (e.g. extra maintenance, braking problems) and operations (cornering). Research in this area should nevertheless be continued in order to solve these problems.

The limits specified in this document are based on the following parameters for wheelchairs

a) Dimensions

The ISO standard 7193 issued in 1985 defines maximum dimensions for unoccupied wheelchairs (electric or manual) as follows:

width 700 mm
height 1 090 mm
length 1 200 mm

These dimensions have been adopted for the purposes of this document as the maximum

b) Weight

Although there are no standards yet, experience shows that a lift with design capacity of 250 kg gross meets practically all requirements. This limit includes either a heavy electrical wheelchair with occupant or a manual wheelchair with occupant and attendant.

c) Safety

Wheelchairs powered by liquid or vapour fuel may be excluded on safety grounds.

To permit a wheelchair user to enter the tram, doorway widths of at least 800 mm of clear space must be provided in all new rolling stock. In this context clear space means the minimum dimension after allowing for all mechanisms such as door hinges or lifts. The ISO Standard ISO 7193 points out

"For operational purposes account must be taken of the fact that a wheelchair plus occupant may exceed the dimensions stated above. The user's feet add approximately 50 mm to the overall length. To propel a wheelchair manually by operating the rims of the main wheels, a clearance of not less than 50 mm and preferably 100 mm is needed on both sides."

As a minimum, one door on each side of the accessible carriage in every train set must be equipped to these standards. The accessible carriages should be clearly marked both inside and out with the international access symbol (pictogram). Those using the accessible carriage need to be informed of the correct point on the platform at which to wait.

Where the height difference between platform and train is small, (i.e. not more than about 250mm) access may be provided by means of a ramp. The ramp may be stowed either on the train or on the platform. The width of the ramp should match the door widths and may taper towards the top. The ramp must be of solid construction and be capable of sustaining a mass of 250 kg. It must have side lips and a non slip surface. Channel ramps are not acceptable, due to the existence of wheelchairs with three wheels.

Where the height difference between platform and train is greater (i.e. more than about 250 mm) access must be provided by means of a lift either fitted to the train or available on the station platform. In either case the lift must be capable of sustaining a mass of 250 kg. For new designs of rolling stock the train mounted lift must have a minimum platform width of 750 mm, and a minimum platform depth of 1200 mm.

All lifts, whether train mounted or platform based, must be supervised throughout their operation by trained railway staff and must include the following safety items.

- Handrail
- Auxiliary mechanism (i.e. hand pump)*
- Toe protection
- Wheelchair stop
- Overload protection
- Emergency stop button*
- Audible warning of lift deployment*
- Non-slip platform surface

* for powered lifts

Boarding and alighting time must be consistent with operational practices on each railway network. A code of practice on safe working procedures must be drawn up by individual railways and staff trained in its use.

For existing rolling stock, every effort should be made to adopt accessible facilities, particularly where current designs will continue in production over a number of years. It is recognised that in some cases there may be design or operational constraints or significant additional costs. Limited doorway width is likely to be one such constraint. Where facilities fall short of the standards recommended for new design, the limitations must be made clear to disabled people before travelling, through information in timetables and by other appropriate means.

Special attention should be paid to providing an effective information chain so that staff and equipment can be organised for boarding and alighting safely and in good time. Wheelchair passengers must have the assurance that they will be given assistance at destination or interchange stations.

Notification must, in particular, be assured in international traffic, if necessary by a central office on each network each network.

Common standards for access to toilets and other facilities within the train

UIC leaflet 565-3 of 1.1.1987 sets out guidelines for the layout of passenger coaches suitable for carrying people in wheelchairs. The following points supplement those guidelines.

Anchoring of wheelchairs within trains is not considered necessary but wheelchairs must be capable of being immobilised (e.g. by applying brakes on a manual wheelchair or engaging neutral on an electric wheelchair).

In the future Intercity and EuroCity trains must progressively be equipped in such a way that they have at least one coach of new design in which accessible toilet facilities have been installed. This should be located adjacent to the door equipped for wheelchair access and the compartment in which wheelchair access is provided. Similar facilities should be provided where possible on existing rolling stock. Enlarged toilet compartments are also of benefit to other passengers (e.g. foldaway nursery table for people with small children). Space should be provided, at least in the accessible carriage, for storage of a folded wheelchair

For new rolling stock designs, wheelchair users must be able to gain access to the toilet and to the compartment in which they are to travel, without transferring from their own wheelchair. To achieve this, relevant internal doorway widths should be at least 800 mm of clear space. The use of a transfer chair may continue to be necessary on some existing rolling stock designs.

Where catering services are available on the train, access to them must be provided, either by means of a trolley service, special service at the seat or direct wheelchair access to the catering area.

II. Common standards on provision of facilities for people with a sensory impairment and those with walking or other difficulty

To provide easier access to trains for elderly and ambulant disabled people and those who are blind or partially sighted, every single width door should also be equipped with vertical handholds on both sides of the entrance. These should be recessed no more than approximately 100 mm from the outer edge of the carriage and extend from 700 mm to 1 100 mm above platform level. They should be in a clearly contrasting colour with the surrounding area.

There should be a handrail on each side of the flight of steps, parallel to the slope of the steps and 800-850 mm above the noses of the steps. This should extend beyond the nose of the top and bottom steps of the flight, recognising that the handrail should not extend outside the moving train.

Steps into the train must be of non-slip material and individual steps should be no more than 200 mm high and at least 300 mm deep. All steps in a flight of steps should be approximately the same height and depth. Risers should be vertical without overhanging nosings. Step-wells should be provided with adequate levels of lighting, directed into the step-well. Step edges into the train should also be of a clearly contrasting colour.

Door handles and/or door buttons on both the outside and inside of the door must be clearly colour contrasted. Door handles must be of a design that is easy to grip by people with arthritic hands.

Provision must be made throughout the train to enable blind and partially sighted people and those with walking difficulty to move about in confidence and with safety. Transparent or shiny surfaces

should be avoided. Clear colour contrasts should be used to delineate handholds and provide warning of obstacles or potential hazards. A sufficient number of handholds should be provided in the train, in particular in carriages, corridors, platforms and toilet areas to enable people to keep their balance whilst moving through the train. These handholds should be of an ergonomically acceptable design and should be usable by people with arthritic hands. Good lighting levels should be used throughout the train.

Audible announcements of station names and other important information must be made for people who are blind or partially sighted. This also benefits other passengers.

For people who are deaf or hard of hearing, solutions must be provided on an increasing number of carriages of every train to alert them to information provided audibly. This may be done, for example, by means of visual display used in parallel with audible announcements, or as a minimum, by the use of a flashing light to alert their attention to the need to seek advice. The carriages concerned should be clearly indicated.

All these improvements should be incorporated as a matter of course in new rolling stock. In many cases it may also be possible to incorporate them during refurbishment of existing rolling stock.

See also Code UIC 565-3 Indications for the layout of coaches suitable for conveying disabled passengers in their wheelchairs International Union of Railways Reprinted 1 August 1997

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