



DEFINITION  
BULLETIN

*Guidance on the  
Safe Use of  
Wheelchairs and  
Vehicle-mounted  
Passenger Lifts*

*MDA DB2003(03)  
March 2003*

## Note

### **Medicines and Healthcare products Regulatory Agency (MHRA)**

The Medical Devices Agency (MDA) and the Medicines Control Agency (MCA) will merge to form the Medicines and Healthcare products Regulatory Agency (MHRA) in April 2003.



The Medical Devices Agency helps safeguard public health by working with users, manufacturers and lawmakers to ensure that medical devices meet appropriate standards of safety, quality and performance and that they comply with the relevant Directives of the European Union.

Our primary responsibility is to ensure that medical devices achieve their fullest potential to help healthcare professionals give patients and other users the high standard of care they have a right to expect.

*The Medical Devices Agency is an Executive Agency of the Department of Health*

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## 1. EXECUTIVE SUMMARY

This document replaces the earlier MDA publication DB9606 'Wheelchair & Vehicle Passenger Lifts: Safe Working Practices'. Since 1996 the number of wheelchair users and vehicles fitted with lifts for wheelchair access has increased. MDA has received a small number of reports of incidents involving injury or death of wheelchair users whilst entering or exiting vehicles via a passenger lift. To reflect this, DB9606 has been reviewed and revised with input from users, carers, healthcare professionals, manufacturers, vehicle converters, Department for Transport (DfT) and service providers. It is intended to supplement the MDA guidance on the safe transportation of wheelchairs issued in DB2001(03).

This new document includes guidance on the use of lifts and wheelchairs, including:

- risk assessment and management;
- safety guards and handrails;
- warning signs and labels;
- training;
- siting of the vehicle;
- lift operation;
- wheelchairs;
- maintenance;
- health and safety;
- adverse incident reporting.

### 1.1 Who this document is for

This document is intended to provide guidance to service providers, users and healthcare professionals involved in the provision and use of wheelchairs or transport services. This includes the wheelchair users themselves when operating a lift without an attendant and when an attendant/driver is operating a lift.

### 1.2 Objectives

This guidance identifies areas for which policies and procedures for safe practices should be established and maintained.

This guidance builds on the information already available in the following documents:

- BS 6109: 1989 (amended 1996) – Part 2 Code of Practice for Passenger Lifts and Ramps which gives design and safety recommendations, operating procedures, installation and inspection recommendations for lifts.

- BS 8300: 2001 Design of buildings and their approaches to meet the needs of disabled people – code of practice.
- The Public Service Vehicles Accessibility Regulations 2000 SI 2000 No 1970 which includes a section on boarding lifts for some larger regulated public service vehicles.
- NHS Controls Assurance Standard for Fleet and Transport Management.
- MDA guidance on the safe transportation of wheelchairs DB2001(03).

### 1.3 Introduction

Many wheelchair users travel regularly in vehicles that are fitted with lifts to assist entry and exit. The lifts can be operated by the users themselves or by an attendant or driver. A small number of reports have been received by the Agency concerning accidents with vehicle-mounted passenger lifts. Wheelchair users and attendants/drivers have been injured and there have also been user fatalities when wheelchairs have fallen from raised platforms. In one case a wheelchair rolled off a raised lift when the brakes and the guards had not been effective. In another, a lift operator was injured when he fell from a raised lift whilst manoeuvring a wheelchair onto the lift. Also in one incident the wheelchair user sustained a fatal head injury as the wheelchair tipped backwards when the vehicle set off and his head hit the raised tail lift inside the vehicle. Some reports have involved an element of lack of adequate maintenance, either to the wheelchair or the passenger lift.

Vehicle passenger lifts and platforms come in a number of styles and designs to suit different applications and types of vehicles. Those used to lift passengers and wheelchairs are mainly of the hinged drop-down platform 'tail lift' variety, located at the rear of the vehicle. Similar lifts are also mounted on the side of some vehicles. Other types incorporate different mounting features to minimise the space taken up by the lift when not in use e.g. pivoted under floor storage or cassette.

## **2. RISK ASSESSMENT AND MANAGEMENT**

Movement of a wheelchair from ground level up into a vehicle and then returning it to ground level at the end of a journey requires careful assessment and management of the risks involved that cover each individual case.

The vehicle operator should undertake a comprehensive risk analysis to establish any limitations that may need to be placed on the use of a lift. This risk analysis should take into account the wheelchair user's requirements, the type and weight of the wheelchair and the type and capacity of the lift and vehicle. Liaison with users and wheelchair service providers, before journeys are undertaken, should provide the required details of combined weight for a wheelchair and user. A risk management plan should then be compiled to minimise and manage risks for all concerned.

The content of this guidance should be incorporated within the risk assessment and management process. The use of generic risk analysis based on recorded experience should provide a core risk management procedure which minimises risk and accommodates the majority of wheelchair users. This can also be used as a base to compile appropriate specifications for any new equipment purchase in the future.

The Department of Health's Controls Assurance Standard for Risk Management, The Management of Health and Safety at Work Regulations and BS EN ISO 14971 Risk Management Standard provides base information on this subject (see section 11).

The Health and Safety Executive also provides advice and carries out reviews of risk assessments (see section 9).

### **2.1 Warning signs and labels**

Any warning signs that are needed as a part of the risk management process must be positioned prominently in the vehicle, close to or on the lift, to instruct or remind users and attendants of important procedures to safeguard the persons using the lift. Instructions regarding the positioning of guards and the need to use the wheelchair brakes should be particularly prominent. The warning should also state the need for adequate training before using the lift (see sections 3 & 4).

### 3. SAFETY GUARDS AND HANDRAILS

Vehicle passenger lifts should have adequate guards and handrails both for the wheelchair user and for any attendant/operator involved.

- The platform should have sufficiently high guards, a minimum 100mm above platform level, to restrict a wheelchair from rolling off as the platform lifts.

**Note:** 100mm guards attached to the platform are appropriate for most wheelchairs, but some larger wheels and powered wheelchairs may require guards or barriers higher than 100mm (see section 7).

- Where manually operated guards or handrails are fitted users and attendants must be trained to use them correctly and informed that they must **always** be used (see section 4).
- The guards should be regularly maintained along with the other parts of the lift (see section 8).
- Handrails should be provided to aid attendant and passenger stability and security.
- Where automatic guards or handrails are fitted they should be maintained as specified by the manufacturer. In addition wheelchair users (or where appropriate operators/attendants) should be trained to regularly check their operation.

### 4. OPERATOR/ATTENDANT TRAINING

A number of the reported incidents involved inadequate training of operators in the correct use of a lift and the handling of wheelchairs onto or on the platforms. The following points should be covered by training before operating lifts:

- Users and attendants must be fully trained in all aspects of the correct procedures for the safe use of vehicle lifts (sections 3, 5, 6, 7 & 8).
- Training for evacuating passengers when the lift has ceased to operate correctly due to damage or parts/system/power failure.
- Training on entry and exit procedures during normal operation and also in emergency situations.
- Training on reporting adverse incidents (see section 10).

Training should also include the need to:

- Respect each passenger as an individual and ask them what assistance they require (if any).
- Be aware of the specific needs of passengers who have vision or hearing impairments and/or difficulties with communication.
- Be patient, allow people to move at their own pace.
- Not forget people on the vehicle when helping others on the lift. Particularly in winter, keep the doors closed when the lift is not in operation.

In addition written instructions stating clearly the required procedures should be available and be regularly reviewed and updated when necessary.

#### 4.1 Assisting entry and exit of vehicle

In addition to the points raised above, an attendant should be adequately trained in the following:

- Explaining to the wheelchair user the sequence of movements that will occur.
- The attendant should accompany the passenger on the lift if possible, but do not overload the lift.
- **Never** leave passengers unattended on the lift at any time.
- **Never** leave the lift unattended at ground level if passengers are in the vehicle.

## **5. SITING OF THE VEHICLE**

- Ensure that the vehicle is parked on firm, level ground with parking brake applied.
- If the ground close to the wheelchair user's pickup point is not firm or level then a suitable site nearby should be sought.
- If there is no suitable alternative nearby and a lift has to be used whilst the vehicle is parked on a gentle gradient, ensure that the platform slopes towards the vehicle interior.
- Ensure that there is sufficient clear space to allow the lift to fully deploy including adequate access space for wheelchair movement to and from the platform at ground level.
- Do not use a lift platform that is tilted at an angle of more than 5° from the horizontal in any direction.
- Protect platform surfaces and vehicle doorways from rain if possible and take extra care when the lift platform and vehicle floors are damp, wet or slippery.

## **6. OPERATING THE LIFT**

Procedures and written instructions should be available for entering and exiting a vehicle, covering the following as a minimum:

- Observe the manufacturer's instructions for use at all times.
- Ensure that vehicle doors are secured in the open position before raising the lift if there is insufficient space to open them safely when the platform is raised.
- Do not exceed the lift manufacturer's recommended safe working load (SWL) and load distribution guidance.
- Ensure that the lift platform and area around the lift are free from obstruction.
- Ensure that the operator of the lift has a clear view of the platform before the wheelchair moves onto it.
- Ensure that the lift platform is in the correct position for use before moving the wheelchair onto it.

- Ensure that the platform guards and handrails are in the correct position before using the lift.
- Where space is restricted and there is an attendant and it is difficult for a powered wheelchair user to manoeuvre the wheelchair safely under its own power, put powered wheelchairs into free wheel mode to allow the attendant to manoeuvre it onto or off the platform (see section 7).
- Ensure that the wheelchair brakes are applied and/or appropriate blocking of the wheels is in position before and during the lift operation (see section 7.2).
- Ensure that control systems on powered wheelchairs are turned off before the lift is operated.
- Ensure that any person on or near the lift is clear of all moving parts.
- Ensure that any person or equipment on the lift does not overhang the platform.
- Ensure that any other passengers in the vehicle are safe before leaving them unattended or leaving the doors open.
- Do not operate the lift without first warning all concerned that you are about to do so.
- Ensure suitable external lighting is available if the lift is to be used in low light conditions.
- When the lift is not in use ensure that the lift controls are deactivated. If the controls are a remote unit ensure that the unit and any trailing leads are stowed correctly.
- Once the wheelchair user is moved from the lift into the vehicle the guidance given in MDA DB2001(03) should be followed.
- Do not move the vehicle unless the vehicle occupants are safely positioned, the doors are closed and the lift is properly stowed and locked in position.

## 7. WHEELCHAIR TYPES

Operators and attendants may encounter a number of types of wheelchair. Some of these will include:

- manual wheelchairs – either propelled by the user or pushed by an attendant;
- powered wheelchairs – either controlled by the user or by an attendant;
- powered scooters – user-controlled with manual steering;
- buggies for the disabled;
- wheelchairs (manual or powered) with supportive seating units.

The following design features of wheelchairs could affect the way in which the lift is used and should be included in the risk assessment and management process (see section 2):

- kerb climbing capability on powered wheelchairs;
- large wheels, front or rear;
- manual or power steering;
- accessories and attachments;
- weight and weight distribution;
- free wheel capabilities on powered wheelchairs;
- parking brake operation.

### 7.1 Powered wheelchairs

Incorrectly used powered wheelchairs pose a significant risk of injury to the user when on a raised platform and it is important that the risks are removed or minimised to an acceptable level to reduce the likelihood of accidents occurring.

Some risks that have been identified are as follows:

- Difficulty in easily manoeuvring some wheelchairs in the confined space of some platforms.

- Uncoupling drive systems to put the wheelchair into free wheel mode allows attendants to manoeuvre a powered wheelchair more easily in confined spaces, but in some cases it can leave wheelchairs without an effective parking brake (see MDA SN1999(15) Electrically Powered Wheelchairs and Scooters – Freewheel Devices).
- If power is not turned off when the wheelchair is positioned correctly there is a risk of operating the drive control inadvertently.
- Kerb climbing devices or the power of the wheelchair could assist the wheelchair to climb over low guards during manoeuvring under power.
- Risk of overloading the platform due to the combined weight of a large wheelchair, occupant and attendant or the wheelchair being incorrectly positioned on the lift.

## 7.2 Wheelchair parking brakes

Parking brakes should always be applied in line with the wheelchair manufacturer's instructions to keep the wheelchair stationary when it is on the lift platform. However, some wheelchairs are not fitted with brakes and therefore other measures need to be provided, such as blocks for the wheels.

**Note:** Incorrect adjustment or inflation of tyres can affect the performance of some wheelchair braking systems (see section 8).

## 8. MAINTENANCE

### 8.1 Vehicle lifts

In some of the incidents investigated, the cause was found to be directly linked to a lack of appropriate mounting of the platform unit to the vehicle, or adequate maintenance. For example, an operator suffered crush injuries to his legs when a worn locking catch failed on a single pillar lift, allowing the lift platform to slew around and trap the person between the lift and the vehicle. In another case a lift-top mounting to the vehicle became detached due to inadequate strength in the mounting point.

It is essential that lifts are correctly maintained in accordance with the manufacturer's recommendations and timescales if the safety of the user and the operator is to be ensured. An independent, thorough and certificated examination of the mounting and operation of the lift and its guards should be carried out at suitable intervals (see section 9).

### 8.2 Wheelchairs

Regular maintenance of the wheelchair, seating and accessories is important for the safety of the user, in particular maintenance of the brakes is of obvious importance as inadequate braking could result in the wheelchair rolling off a raised platform. Many wheelchair brakes act directly on the tyres, therefore correct inflation is essential to retain performance. For wheelchair users who cannot easily maintain the pressure required in pneumatic tyres, the use of puncture-proof systems would allow the braking performance to be maintained. Modern puncture-proof systems can provide good comparable ride properties for many users, although the soft cushioned ride of a pneumatic tyre may be essential for some users.

Wheelchairs are covered by the guidance given in MDA DB2000(02) 'Medical Devices and Equipment Management: Repair and Maintenance Provision' and also in the NHS Controls Assurance Standard for Medical Device Management. They both give detailed guidance on the management of medical equipment and devices including elements such as regular maintenance. The MDA Safety Warning SN1999(33) also gives particular advice on the need for inspection and maintenance of wheelchairs, seating and accessories.

## **9. HEALTH & SAFETY, LEGAL ASPECTS**

Everybody is responsible for the health, safety and welfare of themselves and others and should take all necessary measures to meet their responsibilities.

In particular, employers, employees and self-employed persons are bound by legislation which imposes upon them, duties to provide safe working environments which do not endanger people at work or others as a result of that work.

In England the following publications are particularly relevant to the areas of concern covered by this bulletin:

- a) The Health and Safety at Work etc. Act 1974.
- b) The Health and Safety (Miscellaneous Amendments) Regulations 2002.
- c) The Management of Health and Safety at Work Regulations 1999.
- d) The Provision and Use of Work Equipment Regulations 1998 Maintenance and Safe Operation.
- e) Lifting Operations and Lifting Equipment Regulations (LOLER) 1998.

It should be noted that persons who act in a voluntary capacity (as non-employees) are not subject to the duties of many regulations in the way employees are, but are still responsible under their duty of care to others as a minimum.

## 10. ADVERSE INCIDENTS

In addition to local reporting procedures adverse incidents concerning wheelchair users should be reported to the Medical Devices Agency. If a public service vehicle is involved, and the incident may have a bearing on passenger safety, the Department for Transport (DfT) must also be informed. This is a statutory requirement under the Public Passenger Vehicles Act 1981 (Section 20). The MDA and DfT collaborate on reports and investigate accordingly.

Incidents should be reported in the following circumstances:

- wheelchair users or their carers have been injured or killed whilst using a vehicle mounted lift;
- no injury has occurred, but injury is likely if the situation recurs;
- safety-related equipment has inadequate user information or labelling.

The Medical Devices Agency provides guidance on which incidents should be reported and the process. Details are available from:

- MDA website <http://www.medical-devices.gov.uk>
- MDA Adverse Incident Centre, tel: 020 7972 8080.

**Note:**

The Medical Devices Agency (MDA) and the Medicines Control Agency (MCA) will merge to form the Medicines and Healthcare products Regulatory Agency (MHRA) in April 2003.

## 11. REFERENCES

### 11.1 Legislation

Acts published since 1988 and Statutory Instruments published since 1987 are also available online at <http://www.hmso.gov.uk> [Last checked 5 February 2003].

Health and Safety at Work Act 1974. London: HMSO, 1974.

The Health and Safety (Miscellaneous Amendments) Regulations 2002. SI 2002 No 2174. London: HMSO, 2002.

The Lifting Operations and Lifting Equipment Regulations 1998. SI 1998 No. 2307. London: HMSO, 1998. ISBN 0110795989

Public Passenger Vehicles Act 1981. London: HMSO, 1981.

The Management of Health and Safety at Work Regulations 1999. SI 1999 No. 3242. London: HMSO, 1999. ISBN 0110856252

The Provision and Use of Work Equipment Regulations 1998 SI 1998 No 2306 Maintenance and Safe Operation. London: HMSO, 1998.

The Public Service Vehicles Accessibility Regulations 2000. SI 2000 No. 1970. London: HMSO, 2000. ISBN 0110996003.

### 11.2 Standards

British Standards Institution. Design of Buildings and their Approaches to meet the Needs of Disabled People - Code of Practice. BS 8300, 2001.

British Standards Institution. Medical Devices - Application of Risk Management to Medical Devices. BS EN ISO 14971, 2001.

British Standards Institution. Tail Lifts, Mobile Lifts and Ramps associated with Vehicles - Code of Practice for Passenger Lifts and Ramps. BS 6109, 1989, amended 1996.

Department of Health (Controls Assurance Support Unit). Controls Assurance Standards. Available online: <http://www.casu.org.uk/standards/index.php> [Last checked 4 February 2003].

### 11.3 MDA publications

Device Bulletin DB2000(02) Medical Devices and Equipment Management: Repairs and Maintenance Provision.

Device Bulletin DB2001(03) Guidance on the Safe Transportation of Wheelchairs.

Safety Notice SN1999(15) Electrically Powered Wheelchairs & Scooters – Freewheel.

Safety Notice SN1999(33) Wheelchairs, Seating and Accessories; Inspection, Maintenance and Repair Procedures.

## 12. FURTHER READING

### 12.1 Legislation

Disability Discrimination Act 1995. London: HMSO, 1995. ISBN 0105450952.

The Medical Devices Regulations 2002. SI 2002 No. 618. London: HMSO, 2002. ISBN 0110423178.

The Manual Handling Operations Regulations 1992. SI 1992 No. 2793. London: HMSO, 1992. ISBN 0110259203.

The Public Service Vehicles (Conditions of Fitness, Equipment, Use and Certification) Regulations 1981. SI 1981 No. 257. London: HMSO, 1981.

The Public Service Vehicles (Conduct of Drivers, Inspectors, Conductors and Passengers) (Amendment) Regulations 2002 Statutory Instrument 2002 No. 1724. London: HMSO, 2002.

The Road Vehicles (Construction and Use) Regulations 1986. SI 1986 No. 1078. London: HMSO, 1986.

## 12.2 Standards

International Organization for Standardization. Power-operated lifting platforms for persons with impaired mobility – Rules for safety, dimensions and functional operation – Part 1: Vertical lifting platforms. ISO 9386-1:2000

## 12.3 MDA publications

Medical Device Alert MDA/2003/001 Reporting Adverse Incidents & Disseminating Medical Device Alerts.

Safety Notice SN1999(34) Wheelchair Seating and Wheelchair Accessories – Inappropriate Use.

## 12.4 Other guidance and information

DfT Disability Discrimination Act – Transport Bulletins and Consultation Documents.

VSE 87/1 - The Safety of Passengers in Wheelchairs on Buses – (available from DfT).

\*Minibus Safety – A Code of Practice – CTA/ROSPA ( 2002). (Available from ROSPA website [www.rospa.com](http://www.rospa.com)).

\*Accessible Minibuses – CTA (2000).

\*CTA Midas and PATS Training Material – (available to Midas members from CTA).

\*Available from:  
Community Transport Association, Highbank, Halton Street, Hyde,  
Cheshire SK14 2NY  
Tel: 0161 366 6685 Fax: 0161 351 7221  
Email: [ctauk@communitytransport.com](mailto:ctauk@communitytransport.com)

## **13. CONTACTS**

**Wheelchair-related enquiries and enquiries concerning the content of this Device Bulletin should be addressed to:**

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Tel: 01253 596000  
Fax: 01253 596177  
Email: [mb-md-a-bav@doh.gsi.gov.uk](mailto:mb-md-a-bav@doh.gsi.gov.uk)

**Vehicle-related enquiries should be addressed to:**

Department for Transport  
Mobility & Inclusion Unit  
Great Minster House  
76 Marsham Street  
London  
SW1P 4DR

Tel: 020 7944 4923  
Fax: 020 7944 6102  
Email: [miu@dft.gsi.gov.uk](mailto:miu@dft.gsi.gov.uk)  
Website: <http://www.mobility-unit.dft.gov.uk>

## **Publications**

### **Legislation available from:**

The Stationery Office  
PO Box 29  
Norwich  
NR3 1PD

Tel: 0870 600 5522 Fax: 0870 600 5533

Website: <http://www.ukstate.com>

### **Standards available from:**

British Standards Institute  
Customer Services  
389 Chiswick High Road  
London  
W4 4AL

Tel: 020 8996 9001 Fax: 020 8996 7001

Website: <http://www.bsi-global.com>

### **MDA publications available from:**

<http://www.medial-devices.gov.uk>

or

Medical Devices Agency  
Business Services  
Hannibal House  
Elephant & Castle  
London  
SE1 6TQ

Fax: 020 7972 8124

Tel: 020 7972 8360

## DISTRIBUTION

This Device Bulletin should be brought to the attention of service providers and healthcare professionals involved in the provision and use of wheelchairs or transport services. Wheelchair users would also benefit from reading this Bulletin.

## TECHNICAL ENQUIRIES

Enquiries concerning the content of this Device Bulletin should be addressed to:

Medical Devices Agency (MDA)  
Wheeled Mobility & Seating Centre  
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## HOW TO OBTAIN COPIES

Copies of this Device Bulletin are free to health and social care providers and may be obtained on written request from:

Department of Health  
PO Box 777  
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Fax: 01623 724 524

Email: [doh@prologistics.co.uk](mailto:doh@prologistics.co.uk)

Quoting reference MDA DB2003(03)

Otherwise, copies of the bulletin at a charge of £15 per copy may be obtained from:

Medical Devices Agency  
Business Services  
Hannibal House  
Elephant & Castle  
London  
SE1 6TQ

Fax: 020 7972 8124

Tel: 020 7972 8360

Email: [mb-mda-bs@doh.gsi.gov.uk](mailto:mb-mda-bs@doh.gsi.gov.uk)

Our website lists all current Device Bulletins and safety warnings:  
<http://www.medical-devices.gov.uk>

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