

Review of Class 2 and Class 3 Powered Wheelchairs and Powered Scooters (Invalid Carriages)



Reference PPAD 9/72/89

Final Report on Stage 1

Prepared for

Department for
Transport

By

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Transport & Travel Research Ltd

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CONTENTS

EXECUTIVE SUMMARY

1. INTRODUCTION	1
2. REVIEW OF LEGISLATION	2
2.1 Responsibility for issuing wheelchairs.....	2
2.2 Regulations of the use of Powered Wheelchairs and Scooters	2
2.3 Technical and Performance Requirements.....	4
2.3.1 Construction and Use.....	4
2.3.2 Test Procedures	6
2.4 Regulations for licencing and taxation	8
2.5 Medical Devices Regulations	9
2.6 The Legislative Situation elsewhere in Europe	10
2.6.1 The Role of the European Commission	10
2.6.2 Comparison of Legislation in selected European Countries	10
3. ESTIMATING THE NUMBER OF POWERED WHEELCHAIRS AND POWERED SCOOTERS IN USE IN THE UK	15
3.1 National Statistics.....	15
3.2 Industry Figures	18
3.3 Conclusions on the numbers of Powered Wheelchairs and Scooters in use in the UK	23
3.4 Anecdotal evidence for Future Trends	24
4. THE USE OF POWERED WHEELCHAIRS AND POWERED SCOOTERS IN THE UK	26
4.1 Method	26
4.2 Response Rate	27
4.3 Results	28
4.4 Summary of Findings	34
5. ESTIMATING THE NUMBER OF INCIDENTS INVOLVING POWERED WHEELCHAIRS AND POWERED SCOOTERS IN THE UK	40
5.1 National Statistics	41
5.2 Data from Local Sources.....	45
5.3 Data from Insurance Companies	50
5.4 Data from Shopping Centres	51
5.5 Data from Shopmobility	53
5.6 Data from Supermarket Chains	56
5.7 Data from Public Transport	57
5.8 Data from Breakdown Services	57
5.9 Searches of Databases for individual reports of incidents	58
5.9.1 Database of Court Proceedings	58
5.9.2 Searches of press cuttings and other Internet Sources	59
5.10 Conclusion on the Number of Incidents involving Powered Wheelchairs and Scooters	61

6. QUALITATIVE FINDINGS ON ATTITUDES AND PERCEPTIONS.....	62
6.1 Perceptions of accident and liability	62
6.2 The Issue of Third Party Insurance and Regulatory Matters	62
6.3 Issues connected with testing and training	65
7. SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS	66
7.1 Summary of Findings	66
7.2 Conclusions and Recommendations	67

APPENDICES:

APPENDIX A:	SUMMARY OF MEDICAL DEVICES – AGENCY SAFETY NOTICES, 1999-APRIL 2004
APPENDIX B:	LETTER/QUESTIONNAIRE USED FOR SURVEY OF THE LEGISLATIVE SITUATION IN EMCT COUNTRIES
APPENDIX C:	BHTA MEMBERSHIP LIST – MOBILITY VEHICLE MANUFACTURERS AND DISTRIBUTORS
APPENDIX D:	WHEELCHAIR USER SURVEY – QUESTIONNAIRE
APPENDIX E:	FIGURES OBTAINED ON SCOOTERS, WHEELCHAIRS AND SIMILAR VEHICLES, FROM THE HEALTH AND SAFETY EXECUTIVE
APPENDIX F:	LOCAL NEWSPAPERS CONSULTED DURING THE SEARCH OF PRESS CUTTINGS
APPENDIX G:	PARLIAMENTARY DEBATE ON THE ISSUE OF COMPULSORY THIRD PARTY INSURANCE FOR POWERED WHEELCHAIR/SCOOTER USERS

Executive Summary

Transport & Travel Research Ltd has been commissioned by the Mobility & Inclusion Unit of the Department for Transport to carry out a review of Class 2 and Class 3 powered wheelchairs and powered scooters. Stage 1 of the project has included a review of the legislative framework within which Class 2 and Class 3 wheelchairs are used in the UK, a survey of the number of powered mobility aids of each type that are currently in use in the UK and the environments in which they are currently used (particularly how many are currently used on “the highway”), a survey of the number of incidents involving such vehicles in the UK, and an assessment of prevailing attitudes among key stakeholders towards some key issues.

The review of relevant legislation confirmed that there is little in the UK regarding issues such as fitness to drive, insurance obligations and taxation in relation to powered wheelchairs and scooters. Such mobility aids are not considered, by law, to be a motor vehicle, so are exempt from many road traffic regulations. Class 3 vehicles when used on the road, however, are obliged to conform to many of the regulations covering motor vehicles. Generally, there is neither mandatory training for use of a powered mobility aid, nor a tax on use or ownership of such a vehicle. The situation is not very different in many other European countries, where there is little legislation concerning this type of vehicle. In some countries powered wheelchairs and scooters are largely given the status of bicycles, whilst in others powered wheelchair and scooter users are permitted to travel as pedestrians.

It is estimated that there are 70,000 to 100,000 powered wheelchair and scooter users in the UK; this is largely made on the basis of OPCS data on the percentage of disabled people and wheelchair users in the population, and 2001 Census data. It is anticipated that the true figure might be towards the upper end of this range, and that this estimate might still err on the side of being conservative. Evidence from the research suggests that it is mobility scooters, particularly the Class 2 variety, that are leading the current rapid increase in the number of powered mobility aids in use in the UK. Generally, sales of scooters exceed sales of powered wheelchairs on a ratio of 80:20; the market for scooters in the UK is estimated to be 25,000 per year. Responses to the survey on the nature of people’s usage of powered mobility aids revealed that powered wheelchairs and scooters are most commonly used on pavements, and also for crossing the road. There were 18.5% of respondents said that they used a Class 2 vehicle on the road “every day”.

A major conclusion from the review of the frequency of accidents involving powered wheelchair and scooter users is that this type of incident is likely to be heavily under-reported. The number of incidents causing injury in different environments that are not reported, as well as the likely plethora of small bumps and scrapes which will never be reported, remain an intangible and unquantified element. Nevertheless, it has been possible to produce some numerical estimates as to the expected frequency of different types of incident. For example, it is estimated that there will be one reported incident

involving a powered wheelchair or scooter owner in a major shopping centre, for each 15 million visitors to such a facility. Similarly, it is estimated that one insurance claim relating to an injury to an electric vehicle user will be received in connection with a Shopmobility scheme, for each 200,000 users of such a scheme. Both of these estimates reflect very low probabilities of involvement in an incident. Using Police accident statistics in this way provided varied predictions of accident liability, from one injury incident per year for each 88 powered wheelchair or scooter users in Nottinghamshire, to a ratio of one in 617 for users of such vehicles in West Yorkshire.

Preliminary discussions with stakeholders during Stage 1 of the project raised some important issues and trade-offs. One of these trade-offs is the importance of disabled people being granted the freedom to use a powered mobility aid without restriction, regulation or financial disincentive, against the need for other members of the public to be protected from potential injury. A similar dilemma highlighted was that of how to deal with what was perceived by some in the industry to be “rogue” dealers and distributors who allegedly pay little attention to the assessment of their customers’ needs, in that the presence of such an element in the market actually performs a role in providing mobility opportunities for disabled people; opportunities that might be lost if the industry were to become more tightly regulated.

The recommendations from the study are that,

- 1) The research should progress to Stage 2, the stakeholder consultation stage, so that issues around regulatory requirements can be discussed in more detail.
- 2) There should be the opportunity, during Stage 2, for further analysis of some of the data sources reported on in this document; this might include further investigation of data held on the LASS database, and clarification of the integrity of manufacturing, import and export data already used.

1. INTRODUCTION

This document is the Final Report for Stage 1 of the Department for Transport sponsored project “Review of Class 2 and Class 3 Powered Wheelchairs and Powered Scooters (Invalid Carriages)”. To recap, the objectives of this stage of the research, which relates to both powered wheelchairs and scooters, but not to blue trikes, were to ascertain,

- the legislative framework within which Class 2 and Class 3 wheelchairs are used in the UK; this should be contrasted with the legislative situation in the rest of the European Union.
- the number of wheelchairs of each type that are currently in use in the UK; particularly the number that have been sold in the UK over the past five years.
- the environments in which powered wheelchairs and powered scooters are currently used; particularly how many of each type of wheelchair are currently used on “the highway”.
- the number of incidents involving such vehicles in the UK; these data should be categorised by severity of incident
- prevailing attitudes among key stakeholders towards key issues, such as the possibility of compulsory insurance, or training, for users of powered wheelchairs and powered scooters; particular reference was made to the extent to which enforcement agencies take action in the event of such a wheelchair being involved in an accident, or not meeting current standards.

The report’s structure is based closely on this list of objectives: Section 2, which follows, reports on the review of relevant legislation both in the UK and elsewhere in Europe; Section 3 describes the evaluation of data sources in order to estimate the number of powered wheelchairs and scooters that are currently in circulation in the UK; Section 4 presents the results of a questionnaire survey to investigate the nature of the use made of powered wheelchairs and scooters; Section 5 describes the investigation of the number of incidents relating to injuries and damage to property involving powered mobility vehicles in the UK; Section 6 reports on some of the more anecdotal, qualitative information that was received from interested parties during the course of the research. Finally, Section 7 provides a summary of findings, and conclusions and recommendations from the project.

2. REVIEW OF LEGISLATION

2.1. Responsibility for issuing wheelchairs

The **National Health Service (General Medical Services) Regulations 1992**, Schedule 2, Paragraph 43, sets out general practitioners' duties to prescribe items, including wheelchairs for permanent use. Section 29 of the **National Health Service Act 1997 (NHS Act)** places a duty on all Health Authorities to make arrangements with appropriate practitioners to provide medical services for people in their catchment areas. This became the responsibility of Primary Care Trusts as a result of Section 2 of the **Health Act 1999**.

In practice, it is the 151 NHS Wheelchair Services which actually arrange for the provision of wheelchairs in England.

2.2. Regulations on the use of powered wheelchairs and scooters

Class 2 vehicles can be divided into sub-sections:

Indoor use only; these,

- have a small turning circle;
- could be used on a level patio area or in a small, level garden;
- have a short distance range.

Indoor and outdoor use; these,

- are for indoor use;
- can be for outdoor use over standard terrain;
- can be for use over low kerbs;
- have a short to medium distance range.

Outdoor use only; these,

- are intended for limited indoor use;
- can be for outdoor use, including uneven ground;
- can be used for kerb climbing, up to 10cm;
- have a medium to long distance range.

Owners of Class 3 vehicles, which tend to be larger than Class 2 vehicles, do not have to hold a current driving licence. Drivers must be disabled and aged 14 or over. Class 3 vehicles are not allowed on motorways, cycle lanes or bus lanes.

Standard features of Class 3 wheelchairs are:

- four wheels, fitted with chunkier tyres;
- capacity for kerb climbing, 10cm or more;
- longer distance range;
- two-speed settings: slow (4mph) for pavement use, and fast (8mph) for road use, usually changed by the flick of a switch;

- lights, indicators, horn, rear-view mirror and rear reflectors (all required by law).

The basis of legislation affecting Class 2 and 3 vehicles is the **Chronically Sick and Disabled Persons Act 1970**. This Act defined an “invalid carriage” as: “a vehicle, whether mechanically propelled or not, constructed or adapted for use for the carriage of one person, being a person suffering from some physical defect or disability”. The 1970 Act restricts these vehicles to single occupancy. There is an issue as to whether a parent and child should be permitted to use a vehicle, which also raises questions of vehicle design, safety and defining an appropriate age limit for the child. (The question of multi-occupancy of powered wheelchairs and scooters will be examined during Stage 2 of the project). The Act prescribes compliance requirements, as follows:

- (a) no statutory provision prohibiting or restricting the use of footways shall prohibit or restrict the use of that vehicle on a footway
- (b) if the vehicle is mechanically propelled, it shall be treated for the purposes of the **Road Traffic Act 1960**, the **Road Traffic Act 1962**, the **Road Traffic Regulation Act 1967** and Part I of the **Road Safety Act 1967** as not being a motor vehicle; and
- (c) whether or not the vehicle is mechanically propelled, it shall be exempted from the requirements of the **Road Transport Lighting Act 1957**

Section 20 of the Act enables invalid carriages to be used on the footway. “Footway” is defined in accordance with the **Highways Act 1959**, and is: “a portion of a carriageway that is set aside for use only by pedestrians”. Where the invalid carriage is motorised, it will not be classed as a motor vehicle for the purposes of the **Road Traffic Regulation Act 1984** and **Road Traffic Act 1988**. Some sections of the Road Traffic Act which apply to both motor vehicles and mechanically propelled vehicles do not apply to mechanically propelled invalid carriages. These include the sections on dangerous driving and death by dangerous driving, careless driving and driving under the influence of drink or drugs; the relevant sections are specified in the Chronically Sick and Disabled Persons Act 1970. The Road Traffic Act 1988 did, however, substitute the words “mechanically propelled vehicle” for the words “motor vehicle”, in relation to the power of Police to stop vehicles.

Schedule 4 of the **Road Traffic Act 1991** details amendments to a number of existing Acts, but none of these appears to be of direct relevance to the use of powered wheelchairs and scooters.

The **Use of Invalid Carriages on Highways Regulation 1970** applies to invalid carriages manufactured before 30th January 1989. The 1970 regulations made provisions for what are entitled Class 1 and Class 2 invalid carriages, where Class 1 describes a manual device such as wheelchair, and Class 2 describes a powered invalid carriage capable of 4mph. The regulations stipulate that the invalid carriage must be used by a disabled person and must not weigh more than 250lbs; if motorised it must not be

capable of exceeding 4 mph, and meet set lighting criteria if on the road in the dark. The **Use of Invalid Carriages on Highways Regulation 1988** makes provision for the Class 3 invalid carriage and applies to all invalid carriages manufactured after 30th January 1989. The Class 3 invalid carriage is constructed or adapted so it is capable of exceeding 4mph but not exceed 8mph; Class 3 vehicles are not permitted to exceed 4 mph on footways, and must not be used unless an operating speed indicator is fitted. The 1970 regulations stipulate that any class of invalid carriage must only be used by,

- a person falling within a class of persons for whose use it was constructed or adapted, being a person suffering from some physical defect or physical disability;
- by some other person responsible for carrying out maintenance work to the vehicle(s) concerned;
- by a manufacturer for the purposes of testing or demonstrating an invalid carriage;
- by a person offering to sell the invalid carriage for the purpose only of demonstrating it;
- by a person giving practical training in the use of the invalid carriage for that purpose only.

The Road Vehicles (Construction and Use) (Amendment) (No.4) Regulation 2003, which deals with the use of mobile telephones when driving, makes no specific reference to powered wheelchair and scooter users.

The vehicles featured in this study should be registered, and display a tax exemption certificate, but in practice this is rarely done.

There are no regulations that govern the use of powered wheelchairs and scooters off the highway.

At the time that this report was compiled, the revised European standard for powered wheelchairs (**PR EN 12184**) was about to be released by the British Standards Institute's Wheelchairs Committee, for public consultation.

2.3. Technical and performance requirements

2.3.1. Construction and Use

The Road Traffic Act 1988 requires all vehicles used on the road to comply with the **Road Vehicles (Construction and Use) Regulations 1986** and the **Road Vehicles Lighting Regulations 1989**. The 1986 Regulations encompass all road vehicles, and cover elements such as brakes, steering, protective systems, vision, instruments and equipment, including equipment and devices for controlling emissions. The manufacturers of wheelchairs must adhere to the Essential Requirements of the **Medical Devices Regulations 2002**. Most manufacturers test their products in line with the **British Standard BS EN 12184 "Electrically powered wheelchairs, scooters and their chargers: requirements and test methods" 1999**.

Vehicle lighting is very important, and both Class 2 and Class 3 wheelchairs have to conform to certain regulations that apply to other road users. The Use of Invalid Carriages on Highways Regulation 1988 states that both types of vehicle shall comply with the requirements specified in the **Road Vehicles Lighting Regulation 1984** as if it were a motor vehicle within the meaning of the **Road Traffic Act 1972**. However, an invalid carriage having a maximum speed not exceeding 4mph is required by these Regulations to be fitted with lamps and reflectors only when it is used on the carriageway of a road between sunset and sunrise, otherwise than for the sole purpose of crossing it.

Powered wheelchairs and scooters are categorised with solo and combination motorcycles, and a trailer drawn by a motorcycle, in requiring just one obligatory stop lamp. They are also, according to the **Road Vehicle Lighting Regulations 1989**, exempt from restrictions prohibiting the fitting or fixture of lamps showing red lights at or towards the front of the vehicles, but only in the case where it is retro reflective material or a retro reflector designed to reflect light sideways from the vehicle. Similarly, invalid carriages are allowed to be capable of showing light to the rear (over and above red light), to allow reflective light of any colour from retro reflective material, or a retro reflector designed primarily to reflect light to one or both sides of the vehicle, incorporated into the tyre or wheel. These 1989 Regulations also introduced the requirement for an invalid carriage which can exceed 4 mph to be fitted with direction indicators and a hazard warning signal device.

The **Road Vehicles Lighting (Amendment) Regulations 1987** state that a four-wheeled Class 3 vehicle, or any other vehicle having a maximum speed not exceeding 25 mph, when being driven on a dual-carriageway road, must have at least one amber flashing beacon, unless the vehicle is on the road for the sole purpose of crossing it. This warning beacon must be kept lit for the duration of the vehicle's time on the road. For the purpose of this regulation, "dual-carriageway road" is as defined in Schedule 6 of the **Road Traffic Regulation Act 1984**.

The **Use of Invalid Carriages on Highways Regulation 1970** stipulates that Class 3 invalid carriages must not exceed 0.85 metres in width. A class 3 invalid carriage must be fitted with a horn, and should be constructed so that the user of the invalid carriage can at all times have a full view of the road and traffic ahead when controlling the vehicle. If a windscreen or window is fitted to a Class 2 or 3 invalid carriage, it must be made of safety glass and must be maintained in such condition that it does not obscure the vision of the user while the vehicle is being driven. A Class 3 vehicle should be fitted either internally or externally with a rear view mirror.

The Use of Invalid Carriages on Highways Regulation 1988 states that a Class 1 or Class 2 vehicle should not have an unladen weight in excess of 113.4 kg, and that the unladen weight of a Class 3 vehicle should not exceed 150kg. In relation to Class 3 vehicles, the 1988 Regulation stipulates that,

- Any horn fitted to the vehicle must be restricted in its use in the same way as a horn fitted to any motor vehicle. This equipment should not be two-tone in nature, and should be fitted even if the vehicle already has a reversing alarm.
- The vehicle should be fitted with both a device, which can be put into operation by the user, that is capable of limiting the vehicle's maximum speed to 4 mph, on the level under its own power, and a speed indicator. This speed indicator should be free of any obstruction that might prevent the user from easily seeing it, and shall be maintained in good working order.
- When undergoing tests for noise output, the vehicle's sound pressure level must not exceed 65 dB(A), or 75 dB(A), depending on the particular type class of the wheelchair.

The 1988 Regulation also specifies the following requirement for both Class 2 and Class 3 vehicles,

- The vehicle shall be constructed and maintained so that it can be brought to rest in all conditions of use with reasonable directional stability, and within a reasonable distance. When the vehicle is stationary with the user, or left unattended, it should be capable of holding stationary for an indefinite period of time on a gradient of at least 1 in 5. (These "Means of stopping" requirements apply equally to Class 2 powered vehicles).
- Vehicles should be capable of climbing at a minimum speed of 2 km/h. A wheelchair will pass a safety test (the ability to climb a maximum safe slope) if it achieves or exceeds a speed of 2 km/h after travelling 5 metres up the specified maximum slope.

Whilst ISO Standards have no legal force in UK law, **ISO 7176-5:1997** contains standards for overall dimensions, mass and turning space. Standards of heights for different types of wheelchair are reproduced in Table 2.1.

Table 2.1. Wheelchair height stipulations for manual and powered wheelchairs (ISO 7176-5)

Occupied heights (mm)	Manual	Class A	Class B	Class C
Typical	1500	1500	1530	1590
Maximum	1600	1600	1600	1600

The three classes of powered wheelchair appearing in Table 2.1 are defined, by British Standard **BS EN 12184**, as follows,

- Class A: compact, manoeuvrable wheelchairs not necessarily capable of negotiating outdoor obstacles.

- Class B: wheelchairs sufficiently compact and manoeuvrable for some indoor environments, and capable of negotiating some outdoor obstacles.
- Class C: wheelchairs, usually large in size, not necessarily intended for use indoors, but capable of travelling over longer distances, and of negotiating outdoor obstacles.

ISO 7176-14:1997 outlines electrical requirements for powered wheelchairs and scooters. Wheelchairs which include battery chargers that cannot be removed without the use of tools and/or are permanently connected to the wheelchair battery should conform to the electrical requirements of **IEC 60601-1** and the requirements of ISO 7176-14:1997. Provision shall be made for the user to switch the controller on and off. The wheelchair shall be fitted with a device to indicate to the user when power is turned on so that the vehicle is ready to drive. This indication shall conform to the requirements of **IEC 60073**. It should not be possible to drive the wheelchair with its own motor system if the automatic brakes are disengaged.

Circuits connected to batteries in the wheelchair must be protected against excessive current. The following functions of the wheelchair shall not be affected by the operation of the means of protection of any other circuit,

- driving, braking and steering;
- lighting, direction indicators and hazard warning flashers.

Intermediate connections to batteries connected in series shall not be used to supply power. Connections to battery terminals shall be insulated when batteries are enclosed in a battery container.

2.3.2. Test procedures

An electrical systems test procedure is given in **ISO 7176-14:1997**¹. A comprehensive set of test procedures is performed on the wheelchair, which are pass / fail in all cases; these include,

- The wheelchair must have a battery connection diagram
- Wiring connected to the positive output terminal of the battery shall be red or brown
- The frame of the wheelchair shall not be electrically grounded
- It shall not be possible to touch electrically live leads or terminals when changing fuses
- It shall not be possible to connect wiring in an incorrect manner
- Connectors shall not easily pull apart
- Wiring shall not protrude from the wheelchair
- It shall not be possible to touch non-insulated electrical parts
- Primary circuit protection shall be provided next to the battery pack

¹ Wheelchairs – Part 14: Power and control systems for electric wheelchairs – Requirements and test methods. (ISO 7176-14:1997).

- It shall not be possible to drive the wheelchairs when charging the batteries
- If the connections to the battery are reversed there should be no damage to the controller
- The control system shall not fail if the battery voltage rises by 25%
- A command signal processing failure shall not result in uncontrolled movement of the wheelchair
- Failure of any output device shall not result in uncontrolled movement of the wheelchair
- When the wheelchair is stalled, circuit protection shall prevent damage to the wheelchair for a minimum of five minutes with a maximum speed command signal applied
- The temperature of all external surfaces accessible to the wheelchair user shall not exceed 50°C (122°F)
- When the power supply is interrupted, the wheelchair shall stop on its own accord or as soon as it is steered in another direction or put in the stop position.
- Armrest downward - The armrest can still be removed and adjusted after a push-up
- Footrest downward - The footrest returns to its original condition and can still be flipped up, swung away, or removed and reinstalled after a person extends or does a weight lift
- Tipping levers downward - The tipping lever will not be deformed when a person steps on the lever to tilt the wheelchair backward
- Hand grip - The handgrips will not slip off when a person pulls the user and the wheelchair up or down steps
- Armrest upward - If the wheelchair is lifted by the armrests, the armrests will either lift out of the socket before the chair is lifted off the ground or the armrests will be able to support the weight of the wheelchair and occupant, allowing him or her to be lifted up or down safely
- Footrest supports upward – If the wheelchair is lifted by the footrests, the footrests will either lift out of the socket before the chair lifts off the ground or the footrests will support the weight of the wheelchair and occupant, allowing him or her to be lifted up or down safely
- Push handle upward – The push handles support the weight of the wheelchair and occupant and can be used to safely lift both off the ground

If the wheelchair passes all the static load tests, it will probably not fail under the conditions listed for the impact load tests, and the wheelchair components will still be adjustable and removable.

The European Standard **EN 12184:1999** has the status of a British Standard, and specifies requirements and test methods for electrically powered wheelchairs and scooters (and their chargers) with a maximum speed not exceeding 15 kph (9.315 mph), and intended to carry one person whose mass does not exceed 100kg. This standard includes the following classifications from **EN ISO 9999:1998**:

- Powered attendant-controlled wheelchairs
- Electric motor-driven wheelchairs with manual steering
- Electric motor-driven wheelchairs with powered steering

2.4. Regulations for licensing and taxation

Under the terms of Schedule 2 of the **Vehicle Excise and Registration Act 1994**, powered wheelchairs and scooters, along with other electrically propelled vehicles, are exempt from excise duty, but should display a valid “exempt from taxation” vehicle excise licence. Such vehicles should be registered, but this requirement is not currently enforced in any way, and is rarely adhered to.

2.5. Medical Devices Regulations

Regulations covering medical devices are based on a European Directive, the **Medical Devices Directive 93/42/EEC**, which came into force in June 1998; this is designed to create a single market in medical devices by harmonising the essential safety requirements for these products. **The Medical Device Regulations 2002 (SI 2002 No.619)** bring the requirements of this Directive into force in the UK. The regulations have replaced the UK’s voluntary manufacturer registration scheme and product approvals for ophthalmic appliances, instruments and equipment. The “CE mark” is the symbol used by manufacturers to show that a medical device meets the Essential Requirements of the Regulations and that it is fit for its intended purpose.

The Medicines and Healthcare products Regulatory Agency (MHRA) is designated as the Competent Authority in the UK for ensuring that the Directives are followed by manufacturers, assessing clinical trial notifications from manufacturers and maintaining a register of manufacturers of certain types of device. The MHRA has the power to take action against manufacturers through the Courts.² The MHRA presides over a vigilance and notification system, and monitors the extent to which devices, including powered wheelchairs and powered scooters, continue to be appropriate and safe for use. The Agency distributes a Vigilance Bulletin which sets out, for manufacturers and users of medical devices, the aim of the vigilance system (which is sometimes known as the “adverse incident reporting system”), and also how the system operates alongside existing voluntary operating arrangements. Manufacturers are required to make reports to the Competent Authority; where there are safety issues with devices, a Safety Note is issued. This mechanism helps to shape the legislative framework surrounding powered mobility aids, in much the same way as Case Law creates law. Information entering the vigilance and notification system feeds back into British Standards, and these, in turn, can influence European and International Standards.

² <http://www.medical-devices.gov.uk/mda/>

Table 2.2. shows the number of Safety Notices that have been collected on behalf of the project, by year, and indicates how many of these were related to powered wheelchairs and scooters - details of these 18 Safety Notices are contained in Appendix A.

Table 2.2. Medical Devices Safety Notices, 1999 – 2004.

	1999	2000	2001	2002	2003	2004 ³	Total
Total Safety Notices	41	28	35	35	46	14	199
Related to pwr'd wheelchairs / scooters	6	5	2	2	3	0	18

2.6. The Legislative Situation Elsewhere in Europe

2.6.1. The role of the European Commission

Powered wheelchairs and scooters are considered by the European commission to be a Class 1 medical device, and so come under the auspices of the Medical Devices Directorate, which has its own Committee of Experts on the subject. Each European Union Member State has implemented the Medical Devices Directive, and has a designated Competent Authority to oversee compliance and enforcement, (in much the same way as the MHRA does in the UK). The Commission recognizes that medical devices have become an increasingly important health care area in relation to their impact on health and health care expenditure; the sector covers some 8,000 types of product, ranging from simple bandages and spectacles, through life maintaining implantable devices, equipment to screen and diagnose disease and health conditions, to the most sophisticated diagnostic imaging and minimal invasive surgery equipment. The European Commission's involvement concerns mainly the regulatory framework for market access, international trade relations and regulatory convergence, and the competitiveness of the industry.

A document of relevance is the European Directive **93/42/CEE**, which deals with medical devices, including wheelchairs.

2.6.2. Comparison of legislation in selected European countries

In early October 2003, a questionnaire and covering letter were sent to the European Conference of Ministers of Transport (ECMT) seeking information on Class 2 and 3 vehicles in the ECMT member countries. The ECMT Secretariat kindly forwarded the letter and questionnaire to members of the Working Group on Access and Inclusion (Appendix B contains a copy of the letter / questionnaire).

³ Includes data to the end of April.

Replies were received from seven countries: France, Ireland, Italy, The Netherlands, Norway, Sweden and Switzerland, and information has been received on Germany, through a separate channel. Also, from discussions at the ECMT Meeting in December 2003, it is understood that in Portugal and Greece there are no specific regulations that affect Class 2 and 3 type vehicles. A summary of responses to the letter / questionnaire are set out in the following paragraphs.

- Regulations or legislation

There is variation between the countries. In Norway the Ministry of Transport has defined powered mobility aids in terms of dimensions and requirements for lighting when they are used outdoors. France has regulations on construction, lighting, weight, dimensions and turning space which are based on International Standards **ISO 7176-5 (1986)**. They also use **ISO 7176-2 (2001)** for the determination of the dynamic stability of electric wheelchairs.

The Netherlands has implemented the European directive on medical aids; wheelchairs can only be put on the market with a CE-stamp. However, quality and safety requirements are described as “minimal” and there are no specific construction or safety requirements. In Sweden electric powered wheelchairs and scooters are classified as bicycles, while Ireland has no specific regulations; they are regarded as mechanically propelled vehicles under Irish Road Traffic legislation, and consequent issues are, “dealt with very pragmatically”.

In Germany there are some mentions in the STVZO (Straßenverkehrs-Zulassungs-Ordnung) regarding regulations for vehicles for disabled people:

- The design has to fulfill the special needs of disabled people.
- The vehicle has to have an electric drive.
- The vehicle has to have only one seat.
- Maximum unladen weight is 300 kg.
- Maximum gross weight is 500 kg.
- The maximum speed of the vehicle is 15 kph (9.315 mph).
- The width of the vehicle must not exceed 1,100 mm.
- The vehicle has to be equipped with a plate according to **ECE-R 69**.

For all other dimensions and standards, the regulations for standard street vehicles (cars etc.) apply. A working group is currently engaged in Germany in the definition of all aspects of the design of vehicles for disabled people which are included within STZVO regulations.

In Denmark powered wheelchairs and scooters have to comply with the technical requirements for bicycles with regard to construction and equipment (i.e. in this respect Denmark is similar to Sweden).

In Switzerland, powered wheelchairs and scooters are included in the definition “Motorfahrräder” (a special kind of scooter). There are regulations, with recent changes (July 2002).

In Italy there are no relevant obligations, beyond the need for a CE Mark to indicate that the product is made in Europe and follows the national legislation of the country in which it was manufactured.

- Classification (by maximum speed, etc)

Powered wheelchairs and scooters are categorised in Denmark as motor vehicles, and the maximum design speed cannot exceed 15 kph, or 9.315 mph, (which is rather higher than the maximum speeds that apply in some other European countries).

Neither the Netherlands nor Ireland has any classification by reference to speed. In Italy the only distinction is whether the vehicle is for indoor or outdoor use, while in Switzerland powered wheelchairs and scooters are only classified if they have a top speed of 10km/h. In Sweden wheelchairs are classified in accordance with **EN 12184 (1999)** (the CEN Norme Européene)⁴, as they are in France. The CEN Norme distinguishes between three classes of powered vehicle:

- A Indoor wheelchairs, which do not have to be able to clear obstacles in the outside environment.
- B Chairs primarily for indoor use, but capable of limited outside use.
- C Chairs capable of being used for longer journeys outside.

France refers to **ISO 7176**, which consists of over 20 parts, each of which constitutes a separate report. Part 6 is of relevance to the current project, since it deals with maximum speed, acceleration, and deceleration of powered mobility aids. Part 10 deals with their ability to mount obstacles, and Part 14 looks at power and control systems. France also distinguishes between two classes of powered vehicle by reference to maximum speed. Those that have a top speed of 6 kph (3.726 mph) are allowed to be used on the pavement and also on the right-hand side of the road. For wheelchairs with a top speed above 6 kph (3.726 mph) to a maximum of 45 kph (27.945 mph), the regulations applied are those that relate to motorcycles and scooters.

In Norway there is a change in classification at a maximum speed of 9.9 kph; similar classification applies in Switzerland if the vehicle has a top speed over 10 kph (6.21 mph).

- Regulations affecting use

The use of powered wheelchairs and scooters in Denmark follows that for bicycles; however, they can be used on pavements “if the speed is adapted to the surroundings”. There is no minimum age specified for these vehicles to be insured, but, according to the Danish Road Safety and Transport Agency, in practice these vehicles do not usually carry any insurance.

⁴ Classification of Electrically-powered Wheelchairs, Scooters and their Chargers – Requirements and Test Methods. (EN 12184, August 1999).

In Sweden a powered wheelchair or scooter can be driven everywhere that a pedestrian can walk, provided that it is limited to walking speed (4 to 5 kph, or 2.484 to 3.105 mph). If it is driven faster than this it has to abide by the regulations governing bicycle use, which include a maximum speed of 15 kph (9.315 mph) in areas shared by pedestrians.

French regulations concerning use were mentioned above, and like the Swedish regulations limit use on pavements to (approximate) walking speed. Similar requirements are understood to apply in Norway.

In the Netherlands, powered wheelchairs and scooters can use the pavement, cycle paths or the road as appropriate. The only direct regulation is that the minimum age of the user must be 16. One comment from a Dutch organisation made the point that, while traffic and common laws and regulations deal with most aspects of the use of these vehicles, some issues are not covered. This leads to personal interpretations, which can result in uncertain situations when, for example, an accident occurs.

In Ireland there are no specific regulations affecting use.

- Insurance requirements

In general, powered wheelchair users and scooters are expected to, or are required to, have insurance. In the Netherlands the minimum requirement is for third party liability: a yellow insurance plate must be attached to the back of the vehicle, which makes it easy to check. In Norway new wheelchairs have a two-year guarantee and, as the government is the buyer, they have a “self-insuring system”. Insurance is required for the higher speed vehicles (6 km/h and over) in France, but not for the lower speed vehicles, while in Sweden users are strongly recommended to have insurance for fire, theft, rescue and legal protection. This recommendation is made by the technical aid centres which prescribe the wheelchairs.

In Ireland, as they are regarded as mechanically propelled vehicles, their use in public places is required to be covered by third party insurance with unlimited liability cover.

- Training programmes

The general position appears to be that there are no mandatory training programmes, but most respondent countries have some voluntary training schemes. In Sweden, the technical aid centres that prescribe wheelchairs are responsible for training, while in Norway, occupational therapists (at the municipal level) have this responsibility.

There are some training programmes in France, based at hospitals and medical centres, and in the Netherlands voluntary training is sometimes offered by the municipality that supplies the wheelchair. The Dutch organisation for Quality and Usability Assessment on Assistive Technology

(KBOH) has recently (Summer 2003) launched a “test instrument” to test the ability to drive a powered wheelchair or scooter safely.

In Ireland there are no known training programmes.

- Road tax

None of the countries in the survey levy road tax on powered wheelchairs or scooters.

- Number of powered wheelchairs and scooters in use

Data on numbers of powered wheelchairs and scooters in use are scarce. In Sweden, which has a population of some 8.8 million, it is estimated that 20,000 people have a powered wheelchair or scooter, which is a ratio of one to every 440 people, but this is the only country where such an estimate can be given. Some countries can provide figures for annual sales:

Netherlands	In 2001, 23,800 scooters and 47,000 manual and electric wheelchairs were supplied.
Norway	3,614 electric wheelchairs were bought by the government for distribution in 2002.
France	Approximately 60,000 wheelchairs and 7,000 electric wheelchairs are sold per annum.
Sweden	Over 12 months (2001/2) 3,197 powered vehicles were sold: 306 Class A, 1800 Class B, 595 Class C, 496 Class D (attendant controlled powered wheelchairs). Swedish data suggests an average life for powered wheelchairs / scooters of approximately seven years

There are no figures available for Switzerland, Italy or Ireland.

- Number of accidents

None of the countries that responded to the survey had any statistics on accidents, apart from the Netherlands. There, over the period 1998-2001, each year some 1,400 people were treated in the emergency wards of hospitals for wheelchair-related accidents. Approximately 8% of those were the result of traffic accidents, and about 1% concerned special transport services.

A recent report for the Dutch Ministry of Transport, entitled Vulnerable Road Users estimates that improving the skills of wheelchair users would reduce accident risk by 2% to 10%, and would reduce the number of accidents by at least 10%. In the conclusions of the report it says,

“...electric scooters and the four-wheel moped will increase in number. That is probably not good news for road safety”.

The report states that there are about 250,000 wheelchair users in the Netherlands, and 1,580,000 disabled people in total, but does not break down this number further.

3. Estimating the Number of Powered Wheelchairs and Powered Scooters in Use in the UK

There is no official register of the number of powered wheelchairs and scooters in use in the UK. The task of the current project was to estimate the number currently in circulation, disaggregated by type (i.e. Class 2, Class 3, scooter etc.), if possible, and to examine trends in sales and ownership of such vehicles over the past five years. This was against a backdrop of a general perception that powered wheelchairs and scooters have become increasingly common in the UK in recent years. Estimates will be made, in this section, on the basis of demographic figures from the 2001 Census, manufacturing sales figures, official import / export data, and other figures from both Government and independent surveys. Inevitably, different sources provide different estimates, so the basis of each calculation is given in each case.

3.1. National statistics

The availability of 2001 Census data makes it possible for estimates to be based on up-to-date demographic figures, which quote the UK population in 2001 to have been approximately 58.8 million – 49.1 million of these resided in England (83.6% of all UK residents), 5.1 million in Scotland (8.6%), 2.9 million in Wales (4.9%) and 1.7 million in Northern Ireland (2.9%)⁵. There were 11.9 million UK residents aged under 16⁶, so the adult population can be estimated as being some 46.9 million.

A survey of disability in Great Britain, carried out by the Office of Population Censuses and Surveys (now the Office of National Statistics) in 1989, stated that 13.5% of the adult population of the UK had a disability of some kind, and that, of these, 69% had a “locomotion problem” – these percentages can be converted to the absolute figures of 6,331,500 and 4,368,735, respectively. The same source also estimated that 7% of disabled adults, and 10% of adults with a “locomotion problem”, used a wheelchair, and that 10% of these wheelchairs were powered⁷. On the assumption that these percentages would not be very different today, the following numbers can be estimated for 2004,

Number of adult wheelchair users	454,271
Number of wheelchair using adults with “locomotion problems”	447,781
Number of adult powered wheelchair / scooter users	44,778

These figures have been converted to 2004 figures on the premise that the UK population increased by approximately 2.92% between 1991 and 2001,

⁵ Population Summary (Series VS No.28, PPI No.24) (Office of National Statistics, 2001).

⁶ Whilst, as has already been pointed out, a disabled person is permitted to use a Class 3 wheelchair from the age of 14, it is assumed, for the purposes of calculation, that people using powered wheelchairs independently in public places will be adults aged 16 and over.

⁷ Disabled adults: services, transport and employment. (OPCS surveys of disability in Great Britain, Report 4, HMSO, 1989).

which is an equivalent annual increase of 1.0029%; it has been assumed that the population will have risen at the same annual rate since 2001. Given that it is likely that the percentages of disabled people and wheelchair users will have increased since 1989, and assuming the perception that the use of powered wheelchairs and scooters increased substantially in the past few years, the above estimate of usage in the UK might be expected to be a fairly conservative estimate.

Contact was also made with the person who was involved in the administration of the Automobile Association's Roadside Rescue service (which is no longer offered by the AA) for powered wheelchair and scooter users. The information received was that there were approximately 6,000 clients registered for this service when it was available, and this was thought by the AA to have represented some 2% of an estimated market of three million powered wheelchair and scooter users, but the balance of evidence suggests that this is a considerable over-estimate.

An Audit Commission report from 2000⁸ stated that there were at least 640,000 "long-term" wheelchair users in the UK, about 70% of whom were over the age of 60. This estimate was based on data from the Royal College of Physicians, and probably did not include scooters / invalid carriages. The most recent Audit Commission figures report an estimate of 1.2 million users of NHS wheelchairs⁹.

Other standard national sources of information have been less useful for estimating wheelchair numbers. According to the Office of National Statistics, there were 2.32 million people receiving Disability Living Allowance (DLA) in February 2002, representing a 5.1% increase on the previous year. Of these, some 567,000 received just the mobility component, whilst 1.45 million received both the mobility component and the care component. An important piece of information from this source is the way in which the percentage of people receiving the DLA varied geographically, from 2.5% in the South East, to 6.4% in Wales.

The General Household Survey (2002) quotes no figures relating to wheelchair use. Data on disability are confined to the incidence of hearing difficulties and the use of hearing aids. There are also figures on hospital visits and visits to the doctor, and there is a detailed review of "Activities of Daily Living", but these relate to walking, dressing and the use of public transport.

There is some mention of the use of various types of wheelchair in the most recent National Travel Survey (NTS), but this exercise was carried out on too small a sample for it to be useful for making estimates on a national scale. Of a total sample of 21,868 respondents, only 1,030 responded to a question aimed at "people with mobility problems", aged 16 or over, who went out "on foot", or were capable of doing so – of these, 18 (1.7%) used a "powered pavement vehicle", whilst 53 (5.1%) used a vehicle categorised as a

⁸ Fully Equipped: The provision of equipment to older or disabled people by the NHS and social services in England and Wales. (Audit Commission, March 2000).

⁹ Audit Commission Annual Report (2002).

“wheelchair (or powered pavement vehicle pre-1995)”. Altogether, 146 (6.7%) of the total sample of 21,868 people used a wheelchair of some description, a figure that is not dissimilar to the 1989 OPCS figure of 7%.

A data source that would have been useful to the current project is that which was previously maintained by the Department of Health’s Hospital Activity Team, which was last reported in the publication “Wheelchairs and Artificial Limbs, England – KO73”; data for this publication ceased to be collected in 1997. Information on the most recent figures from this source is still awaited.

In terms of the number of wheelchairs of different types currently in use in the UK, a report commissioned by the Department for Transport in 2001¹⁰ estimated that there were approximately 25,000 electric powered indoor / outdoor ‘chairs in use (known as EPIOCs), with sales of some 4,000 each year. National figures for this type of wheelchair, for England only, are shown in Table 3.1.

Table 3.1. Number of electrically powered indoor / outdoor wheelchairs issued by the NHS in England each year

1997-1998	4,464
1998-1999	4,033
1999-2000	3,388
2000-2001	3,279

When these figures are factored up as UK estimates, using the 2001 Census data quoted above, the numbers issued in 1997-1998 to 2000-2001 become, respectively, 5,340, 4,824, 4,053 and 3,922.

3.2. Industry figures

Estimates have been obtained from the NHS’s Purchasing and Supply Agency (PASA). Based on the equipment profiles of 15 NHS wheelchair services, it has been estimated that electrically powered wheelchairs / scooters are issued to 4.4% of what PASA describes as the “client population”; with a population of some 900,000 people, this equates to approximately 39,600 electric wheelchairs in use. PASA disaggregates this figure further, as follows,

20,250 Indoor electric wheelchairs	(2.25% of client population)
7,290 Outdoor electric wheelchairs (including power packs)	(0.81%)
12,150 Indoor / outdoor wheelchairs	(1.35%)

All of these wheelchairs are categorised as Class 2 vehicles.

¹⁰ PR Oxley Review of Departmental Responsibilities for the Provision of Outdoor Mobility Services (for the Mobility & Inclusion Unit, Department for Transport, July 2001).

The most recent estimate made by the Medical Devices Agency (MDA), in 2000, was 1,150,000, which includes all funded wheelchairs (i.e. manual and electric, for both indoor and outdoor use).

Personal communication with Motability has produced an estimate of 70,000 to 100,000 powered mobility vehicles, of which it is estimated that the ratio of powered scooters to powered wheelchairs is approximately 80:20.

The above figures can be contrasted with estimates received from manufacturers and distributors. For example, Invacare, a company that manufactures both scooters and electric wheelchairs, has provided estimates of the current size of the electric scooter market both in the UK and in selected countries elsewhere in Europe – these are shown in Table 3.2.

Table 3.2. Estimated size of powered scooter market in selected European countries (2003)

Country	Small	Medium	Large	Extra Large	Total
UK	3,750	13,750	6,250	1,250	25,000
Netherlands	500	1,000	6,500	2,000	10,000
Germany	400	2,800	3,600	1,200	8,000
Denmark	70	700	420	210	1,400
Norway	12	120	588	480	1,200
Sweden	55	220	605	220	1,100
Finland	5	15	40	40	100
Others	640	1,760	640	160	3,200
Total	5,432	20,365	18,643	5,560	50,000

Invacare also kindly provided details of their sales of both powered scooters and powered wheelchairs over a three-year period – whilst it should be pointed out that this particular company did not enter the powered scooter market until 2001, these data illustrate the growing importance of scooters as a means of powered mobility (see Table 3.3.).

Table 3.3. Sales of powered wheelchairs and powered scooters for Invacare, 2001-2003

Year:	2001	2002	2003
Class 2 wheelchairs	4,398	4,461	4,743
Class 3 wheelchairs	253	395	358
Class 2 scooters	0	793	465
Class 3 scooters	154	1,019	1,396

An important source of information on the powered mobility aid industry in the UK was the British Healthcare Trades Association (BHTA), to which member companies, both manufacturers and distributors of wheelchairs, submit monthly returns. Within the BHTA membership, there are two sections: mobility vehicle distributors and mobility vehicle manufacturers. Membership in the mobility vehicle section currently stands at 103 mobility vehicle

distributors and 26 mobility vehicle manufacturers (see Appendix C). In terms of the manufacturers, BHTA membership accounts for almost all the main manufacturers of powered wheelchairs and scooters; however, for the distributors, BHTA membership is less comprehensive, with an estimated total of 500-600 dealers in powered wheelchairs and scooters operating in the UK, of which only around 15-20% are BHTA members.

The BHTA provided an annual sales figure of £60 million for mobility products manufacturers for the year 2002, and details of how this figure is broken down by the number of wheelchairs of different types sold is provided in Table 3.4. On the grounds that a large proportion of manufacturers are represented by the BHTA's membership, these figures can be taken as being a good approximation of sales by UK-based manufacturers.

A request was made to the BHTA for data on sales disaggregated over time, in order to assess the way in which sales of different categories of mobility aid have changed over time. Unfortunately, it was not possible to obtain such data over an extended time period, but half-yearly figures were provided for the years 2001 and 2002. These are shown in Table 3.5., and appear to be fairly inconclusive, in that a steady rise in sales over the first three half-yearly periods was followed by a general fall in sales during July-December 2002, and there appears to be no explanation for this. Sales of all electric vehicles rose by approximately a third from January-June 2001 to January-June 2002 – due largely to an increase in Class 2 electric scooters of just over 50%. Both sales of manual wheelchairs and of the total number of units specified in Table 3.5. fell over these three time periods as sales of electric vehicles rose, but all of these trends were reversed by the July-December 2002 figures.

Table 3.4. Units sold by all BHTA manufacturers in 2002 (BHTA)

Type of wheelchair	Number sold
Manual Wheelchair (private)	26,249
Electric Wheelchair (private) (Class 2)	5,603
Scooter, 4mph, 3 wheels (Class 2)	5,401
Scooter, 4mph, 4 wheels (Class 2)	13,082
Scooter, 8mph (Class 3)	3,607
Total Class 2	24,086 (87%)
Total Class 3	3,607 (13%)
Total Electric wheelchairs	5,603 (20%)
Total Scooters	22,090 (80%)
Micro-scooters	2,753 (6 months' figures)
NHS Manual Wheelchairs	24,995
NHS Electric Wheelchairs	2,564

Table 3.5. Half-yearly sales figures for all BHTA manufacturers in 2001 and 2002 (BHTA)

	Jan.-Jun. 2001	Jul.-Dec. 2001	Jan.-Jun. 2002	Jul.-Dec. 2002
Electric Wheelchair (pte) (Class 2)	2,231	2,328	2,407	3,196
Scooter, 4mph, 3 wheels (Class 2)	2,662	3,117	4,035	1,366
Scooter, 4mph, 4 wheels (Class 2)	5,259	7,745	7,893	5,189
Scooter, 8mph (Class 3)	2,301	2,013	2,226	1,381
Total Pte Electric Wheelchairs	12,453	15,203	16,561	12,519
Manual Wheelchair (private)	15,917	9,938	10,492	15,757
NHS Manual Wheelchairs	20,826	20,516	11,996	12,999
NHS Electric Wheelchairs	1,912	1,504	1,199	1,365
Total Units	51,108	47,161	40,248	42,640

All of the above figures from the BHTA exclude vehicles that were manufactured in the UK and exported. A wider perspective can be gained by looking at "PRODCOM" figures published by the Office of National Statistics, which provide information both on "UK Manufacturer sales" (i.e. sales of products manufactured in the UK and sold either in the UK or elsewhere), and on import and export data supplied by Customs & Excise¹¹. It has been

¹¹ www.statistics.gov.uk (Report PRA354335430).

possible to obtain figures for what is described as the “Invalid Carriages Industry”, which covers both manual and powered wheelchairs / scooters.

In terms of total value, this sector appears to have declined in recent years; Total UK Manufacturer Sales of Individual Products in this industry are quoted as follows,

1999	£122.7 million
2000	£116.1 million
2001	£119.5 million
2002	£111.1 million

Sales figures, along with import and export data, for manual wheelchairs are shown in Table 3.6.. Because there was some doubt as to the integrity of the data for exports of motorised or mechanically propelled vehicles to other EC countries in 2001 and 2002, the figures obtained from this source for powered wheelchairs and scooters have been omitted from this report. This is because export figures (supplied by Customs & Excise) far exceeded the number of units manufactured in the UK (compiled by the ONS) for these two years. These apparent anomalies have been raised with the ONS; the ONS has undertaken to inform the project if any further clarifications come to light.

Table 3.6. Sales, imports and exports of invalid carriages not mechanically propelled (units)

	Manufacturer Sales, UK¹²	EC Exports	Non-EC Exports	EC Imports	Non-EC Imports	UK Net Supply¹³
1999	139,056	80,912	2,111	1,384	95,606	153,023
2000	123,374	17,632	10,220	3,278	94,074	192,874
2001	111,153	46,443	913	7,345	133,800	204,942
2002	106,669	92,723	4,685	19,896	246,259	275,416

Table 3.6. nevertheless provides some interesting statistics. The data show steadily declining UK manufacturer sales, but a rapidly increasing UK net supply (i.e. the total number of additional units in circulation in the UK), for manual wheelchairs. The UK net supply of manual wheelchairs increased by 80% from 1999 to 2002, and, whilst the figures for net supply of powered vehicles have been omitted, it is anticipated that there might have been a rapid increase in the number of this type of wheelchairs in use in the UK, (but this can not currently be confirmed). The main reason for this expected increase is the rise in imported wheelchairs from outside of the EC, principally from the USA.

One aspect of the data gathered that has displayed some consistency is the percentage share of the market accounted for by powered scooters, as opposed to powered wheelchairs. Whilst the BHTA returns shown in Table

¹² Manufacturer Sales, UK = all units manufactured in the UK and sold either in the UK or elsewhere.

¹³ UK Net Supply = Units manufactured and sold in the UK + total imports.

3.4. suggest a 80:20 split (with an 87:13 ratio of Class 2 vehicles to Class 3 vehicles), Motability estimates that approximately 75% of the 2,500 powered wheelchairs supplied by the organisation in 2001 were scooters. Figures supplied by an individual supplier of powered wheelchairs and scooters, Invacare (see Table 3.3.), show the percentage of the company's Class 2 vehicle sales to have been between 92% and 95% of total powered wheelchair sales; Invacare's ratio of scooter sales to powered wheelchair sales is only 27:73, but the company is still relatively new to the scooter market.

A similar ratio of sales was found during the project's survey of individual manufacturers and distributors. Whilst few companies contacted were prepared to disclose annual sales figures, because of the commercial sensitivity of this information, there was an 80:20 ratio of Class 2 to Class 3 wheelchairs reported by the 18% of distributors contacted who responded with data, and a 77:23 ratio reported by the 30% of manufacturers who provided information. Some distributors merely reported the ratio of powered scooter sales to powered wheelchair sales, and overall this was one of 77:23.

Given that the balance of evidence seems to suggest that Class 2 scooters represent the fastest-growing sector of the powered vehicle market, it is likely that the ratios quoted above will continue to increase in the future.

It is also probable that the total number of powered mobility vehicles will be increased by some less usual types of motorised vehicle which do not get included in official figures. For example, anecdotal evidence has suggested that some vehicles capable of speed of up to 17mph (which is not strictly legal) are imported from the USA; it is not clear whether these have been included in import data quoted in this section.

There was a hypothesis at the beginning of the project that a substantial and increasing number of powered wheelchairs and scooters might be purchased direct over the internet, and that these might also escape official figures. In reality, however, it was found that, although a number of websites exist relating to powered wheelchair and scooters, online sales facilities are rare; most websites encourage potential buyers to come into the associated retail outlet to discuss their requirements and try out the various chairs. Anecdotal evidence also suggested that direct internet sales are comparatively small, so it is unlikely that direct sales by this means have a substantial impact on the estimates contained in this section. Similarly, no evidence was found of substantial buying and selling activity among private individuals (through "small ads" in newspapers etc.), although such activity is likely to mainly transfer second-hand powered wheelchairs and scooters from one person to another, so having little effect on the overall number of wheelchairs in use.

3.3. Conclusions on the number of powered wheelchairs and scooters in use in the UK

A number of different sources were consulted for this part of the research, resulting in a wide range of estimates of the number of powered wheelchairs

and scooters in the UK being found. The most difficult estimate to make is that of the actual number of wheelchairs of various types in circulation – this is because recorded figures are likely to be under-estimates, given the number of unused powered wheelchairs and scooters there are likely to be which are stored in a shed, for example, and, similarly, the number of wheelchairs that are owned and just used occasionally (for occasional off-road uses, for travelling in another vehicle etc.). There is evidence of multiple ownership, as people have different wheelchairs for different purposes.

Also, the confidence with which estimates of numbers can be made on the basis of official figures concerning the manufacture, import and export of powered wheelchairs and scooters, is compromised by current uncertainty over the validity of data published from official sources. Nevertheless, there is sufficient evidence from these figures to suggest that the general perception, and balance of anecdotal evidence, of a recent “boom” in the supply of motorised mobility aids is not unfounded. It would appear that it is imports, particularly from non-EC countries, that are leading the increase in the number of powered wheelchairs and scooters in use in the UK.

Aside from the debate about numbers, the most important issue to this part of the research is the number of users of electrically powered vehicles, particularly regular users, as opposed to those who might own a powered wheelchair or scooter but make very infrequent use of it. It is regular users of such vehicles in public places that are of most direct relevance to the project, since these are the people who are most likely to run the risk of being involved in a road traffic accident, to potentially come into contact with other pedestrians and to consider the issue of whether they might require insurance.

The initial calculation of 44,778 powered wheelchair and scooter users, made on the basis of fairly crude OPCS data on the percentage of disabled people and wheelchair users in the population, will be used for calculations when estimating accidents rates etc later on in this report – this is because, unlike some of the estimates used in this section, it refers to a generic population, and not to a particular type or class of wheelchair. Also, an estimate of 45,000 to 50,000 powered vehicle users rather ties in with PASA’s estimate of 39,600 Class 2 NHS-supplied units. If anything, this is expected to be a rather conservative estimate, so that Motability’s estimate that numbers are actually in the range of 70,000 to 100,000 might be nearer the true figure.

It has been useful to have had estimates of numbers broken down by type of vehicle. For example, it appears that it is mobility scooters, particularly the Class 2 variety, that are leading the overall increase in powered vehicle numbers. There is a consensus, from figures provided, that sales of scooters currently outstrip sales of powered wheelchairs on a ratio of 80:20. The market for scooters in the UK is estimated to be 25,000 per year.

What is very clear is that the number of powered wheelchairs and scooters in use in the UK is expected to increase substantially in the near future. This is partly due to continuing trends of an ageing population and the increasing

centralisation of retail facilities in fewer, bigger – but accessible – outlets, but there is plenty of anecdotal evidence that powered mobility aids are beginning to open up new markets, as is discussed in the following sub-section.

3.4 Anecdotal evidence for future trends

Generally, evidence from discussions with BHTA members suggest that the powered wheelchair and scooter market is booming and that sales, particularly of scooters, are likely to continue to increase over the coming years. There was one correspondent who suggested that there might be a future increase in sales of lightweight portable versions (micro scooters) that can easily be transported within vehicles. One reason for the likely increasing popularity of the scooter as an aid to mobility, which emerged quite strongly from the current research, is the appeal of this type of vehicle to new sectors of the population. Whilst scooters are ideal for travelling within shopping precincts and other level-access, pedestrianised areas, they are, unlike powered wheelchairs, not considered to be stigmatising to the user. This trend is being encouraged by efforts within the industry to design vehicles with a more attractive design, whose appearance is designed to be “non-stigmatising”, and also by the appearance on the market of vehicles with extended range and improved performance.

There is increasingly a market for such vehicles among people who have difficulty with walking, or standing, for long periods, but who would not consider themselves to be disabled. In many cases, a scooter for, say going shopping, is reportedly seen as being a convenient alternative to public transport, which is still considered by many to be inaccessible, or a replacement for the private car, for shorter distances, when the user no longer feels confident enough to drive. There is a growing realisation in the powered mobility aid industry that the market for scooters is developing among older people and, in a more recent development, among people who are obese. Evidence was received from a company which specialises in the manufacture and supply of bariatric¹⁴ equipment, the rise in importance of which is associated with the current growing concern with the problem of obesity in Western societies, particularly in the USA and the UK. The need for specialist products stems from the requirements that heavier people have for larger vehicles, stronger tie-down equipment, stronger chassis to vehicles etc.. The company in question, Aldersley Battery Chairs Limited, supplies approximately 100 units per annum for the weight range of 30 to 50 stone; whilst this number has been fairly static for the past five years, Aldersley expects sales to increase substantially in the future.

The broadening of the market for powered mobility aids will reduce the dominant role that the NHS currently has in this market; an increase in the proportion of privately-purchased powered wheelchairs and scooters has already begun, particularly among older buyers.

¹⁴ “Bariatric” is the new clinical adjective to describe people who are large, heavy or obese.

4. The Use of Powered Wheelchairs and Powered Scooters in the UK

4.1. Method

To establish the number of wheelchairs of each type currently being used on the highway, and in similar environments, a questionnaire was developed that aimed to investigate the types of wheelchair owned, the amount and type of any training received on purchase, and where and how often disabled people use their powered wheelchairs and scooters (see Appendix D). BHTA manufacturers and distributors were identified as a useful avenue for questionnaire distribution through their records of clients who had purchased powered wheelchairs or scooters from them. Therefore, during the investigation of numbers of wheelchairs being sold, the BHTA manufacturers and distributors were also asked whether they would be prepared to assist with the distribution of questionnaires to wheelchair users.

In order to reach wheelchair users in this way, while ensuring that their contact details remained confidential, the survey was planned so that those manufacturers and distributors willing to help would receive packs of stamped envelopes each containing a letter of introduction, a copy of the questionnaire and a pre-paid return envelope to send directly back to TTR. The pre-paid envelopes would be coded with a two-letter identifier in red ink in order to follow the return rates from particular BHTA organisations and other distribution sources. The manufacturers / distributors would be asked to add their clients' names and addresses before mailing. Once the questionnaire had been finalised and approved, those BHTA members who had initially shown willingness in this respect were contacted again to discuss how many questionnaires they would be prepared to send out to clients. To date, 15 distributors and 6 manufacturers have volunteered to assist with questionnaire distribution, with a total of 916 questionnaires being sent out to wheelchair users in this way. The numbers sent out by the various members ranged from as few as 6 to as many as 200, with an average of 44 questionnaires being sent by each organisation

Other sources included Peter Kemp, Chairman of the National Wheelchair Users Forum, who distributed 200 questionnaires on behalf of the project, the Disabled Drivers Association, which sent out 1,500 questionnaires with its magazine, *Magic Carpet*, and Motability, which distributed 500 to clients on its database. Driving Assessment and Mobility Centres known to provide a sizeable general mobility service were also approached; in some cases there was a reluctance among these Centres to allow their database to be used in this way, but eventually 400 questionnaires were distributed to people currently on file, with the Mobility Service of the Disabled Living Centre (West of England) agreeing to offer a questionnaire to new clients. A total of 139 questionnaires were distributed to powered wheelchair and scooter users in shopping precincts around the country.

4.2. Response Rate

A full summary of organisations who sent questionnaires, so far totalling 3690, on the project's behalf, with response rates to date, appears in Table 4.1.

Table 4.1: Responses to users questionnaire

Code	Distributors	Returned	Sent	Rate (%)
AM	Ashdown Mobility Ltd	1	80	1.2
BI	Batricar Independent Mobility Ltd	0	25	-
BM	Boothferry Mobility Ltd	22	50	44.0
CM	Cambridge Mobility	24	75	32.0
CP	Cinque Ports Mobility Limited	3	10	33.3
FW	Folkestone wheelchair user group	1	6	16.7
CO	Cosham Mobility (All Mobility Aids)	0	20	-
TH	The Helpful Hand	0	10	-
HM	Hereford Mobility Centre	0	50	-
HH	Howden Hall Mobility	0	30	-
IY	Independently Yours Ltd	16	75	21.3
IM	Island Mobility	11	20	55.0
KM	Kent Mobility Ltd	83	200	41.5
MC	M & C Mobility	0	25	-
SM	Shepherds Mobility	7	15	46.7
Code	Manufacturers			
BL	Balder (UK) Limited	17	50	34.0
BE	Beamer Limited	0	60	-
BA	Batricar Ltd	8	15	53.3
CY	Cyclone Mobility & Fitness Ltd	1	40	2.5
OB	Otto Bock Healthcare PLC	0	60	-
Code	Mobility Centres			
MC	Cornwall Mobility Centre	65	200	32.5
MQ	Queen Elisabeth Foundation	23	100	23.0
MO	Oxford Centre for Enablement	0	100	-
MB	Mobility Service, Bristol	2	25	8.0
Code	Shopping Malls	Returned	Sent	Rate (%)
label	Metrocentre, Newcastle	0	50	-
label	Meadowhall, Sheffield	0	14	-
label	The Centre, Milton Keynes	0	17	-
label	Midsummer Place, Milton Keynes	0	12	-
label	Merry Hill, Dudley	0	10	-
label	Arndale Centre, Manchester	0	3	-
label	Liverpool City Centre	0	28	-
label	Oxford Street, London	0	3	-
Code	Other			
NW	National wheelchair users forum	0	200	-
I	Buggy Club	0	10	-
None	Motability	161	500	32.2
Green	<i>Magic Carpet</i> , DDA	49	1500	3.3

	Total	494	3690	13.4
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The response rate of 13.4% is a reasonable return for a postal questionnaire – especially since no inducement for returning it was offered – but this bare statistic hides a very patchy response between sources. The fact that no fewer than ten sources have so far yielded no responses, according to Table 4.1, indicates that some of those offering to distribute questionnaires on the project's behalf either decided not to do so after all, or did so later than expected so that responses may yet be received. This is almost certainly the case with the questionnaires distributed in shopping precincts shortly before Christmas. In fact, since the 494 completed questionnaires were coded for analysis, questionnaires have continued to be returned; these include 24 that have recently been received via the Oxford Centre for Enablement, which confirms that more questionnaires might be received in batches.

Where questionnaires have been returned, the response appears to have been enthusiastic, with several sources yielding a response rate of between 30% and 55%, which is far higher than would normally be expected for a postal questionnaire.

4.3. Results

The first question to be asked referred to the type of wheelchair owned by the respondent; this was important, since this was to form the basis of several cross-tabulations later in the analysis. It was expected that respondents would be unaware as to whether their wheelchair was a Class 2 or Class 3 vehicle, so the question actually asked for the make and model of the wheelchair, so that wheelchairs could be categorised afterwards. However, a later question asked about the top speed of the wheelchair. Again, it was anticipated that many respondents would not be aware of the 4 mph and 8 mph categories – and this indeed proved to be the case – but plotting a frequency distribution of these responses did show two distinct peaks at 4 mph and 8 mph. It was therefore decided that responses to this question could be used as a satisfactory proxy variable for whether the respondent's wheelchair was of the Class 2 or Class 3 variety. In order to effect this categorisation, responses were sorted according to whether the top speed quoted were below 6 mph, or 6 mph or more. This categorisation is summarised in Figure 4.1, and shows a remarkably even balance between Class 2 and Class 3 wheelchairs in the sample – it also shows that 17.6% of respondents did not know the top speed of their wheelchair, which might argue for a need for better information and/or training for users. A question was also asked about the number of wheels that wheelchairs had – this was to gain an indication as to how many three-wheeled vehicles might be included in the sample. Figure 4.2 shows that, whilst there were some six-wheeled vehicles owned (these are for off-road purposes), 80% of respondents had a four-wheeled wheelchair.

There were 88% of respondents who had acquired their wheelchair new; 21% of the sample had acquired the wheelchair within the past six months, whilst only 8% had done so more than five years previously (see Figure 4.3). As many as 46% of the sample said that they used to drive, but no longer do so; this is a high percentage, given that the sample represented a full range of

ages, from 5 to 97, with exactly half of the sample aged 65 or younger (see Figure 4.4). There were 52% of respondents who were male.

Figures 4.5 and 4.6 deal with the extent to which training was provided by the supplier when the wheelchair was purchased. The former graph indicates that only just over half of respondents underwent a full assessment, with 7% having no training or advice at all. However, Figure 4.6 shows that the probability of having received such a service increases as the time since acquisition of the wheelchair is reduced (indicating an improvement in standards over time), although there appears to have been an increasing tendency for advice, at the expense of full assessments, over the past year.

Figures 4.7, 4.8 and 4.9 illustrate responses to the question of whether respondents thought their wheelchair were too fast, too slow, or “just about right” in terms of speed. Generally, about three-quarters of the sample were happy with their wheelchair’s speed, whilst most of the remainder thought their wheelchair to be too slow; there was just a small minority that indicated that they considered their vehicle to be “too fast”. This suggests that, if there were a perception among members of the general public that powered wheelchairs and scooters are dangerously fast, then this view is shared by very few owners of such vehicles. As might have been expected, the propensity to think that the wheelchair is too fast generally increases with age (see Figure 4.7), although there were still only 6.1% of respondents aged 80 or older who felt this way. Female respondents were more likely to think their wheelchair is too fast than males, whilst there was a slightly greater tendency for owners of Class 3 vehicles than owners of Class 2 vehicles to show a concern about speed (as indicated by Figures 4.8 and 4.9, respectively).

Figure 4.1: Type of wheelchair used, as defined by top speed

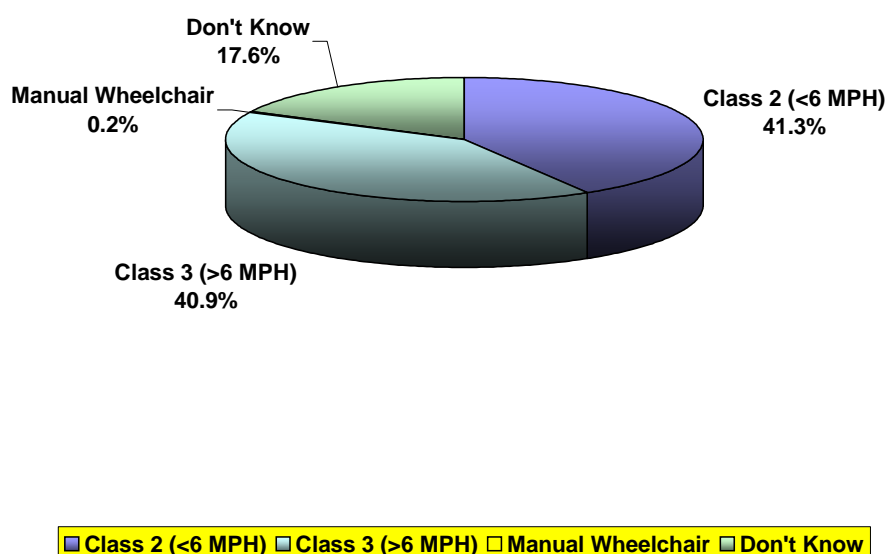


Figure 4.2: Number of wheels on wheelchairs

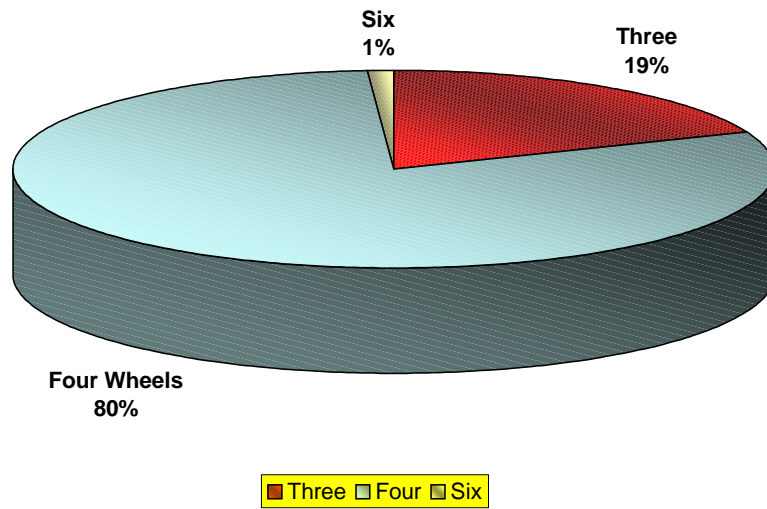


Figure 4.3: Length of time owning wheelchair

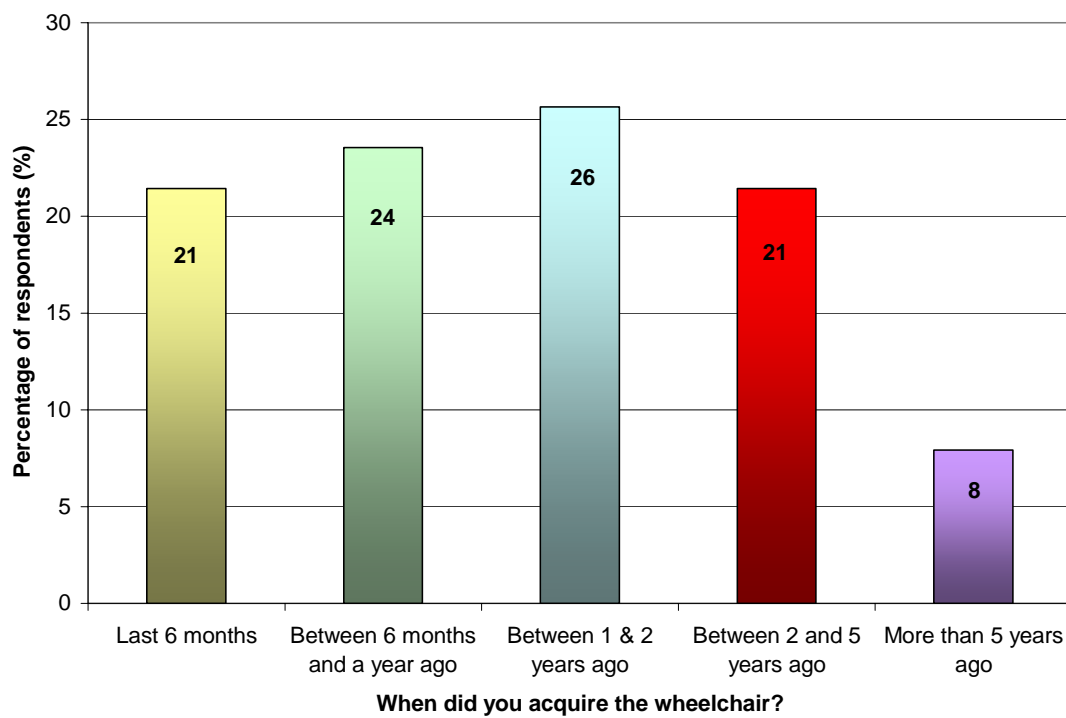


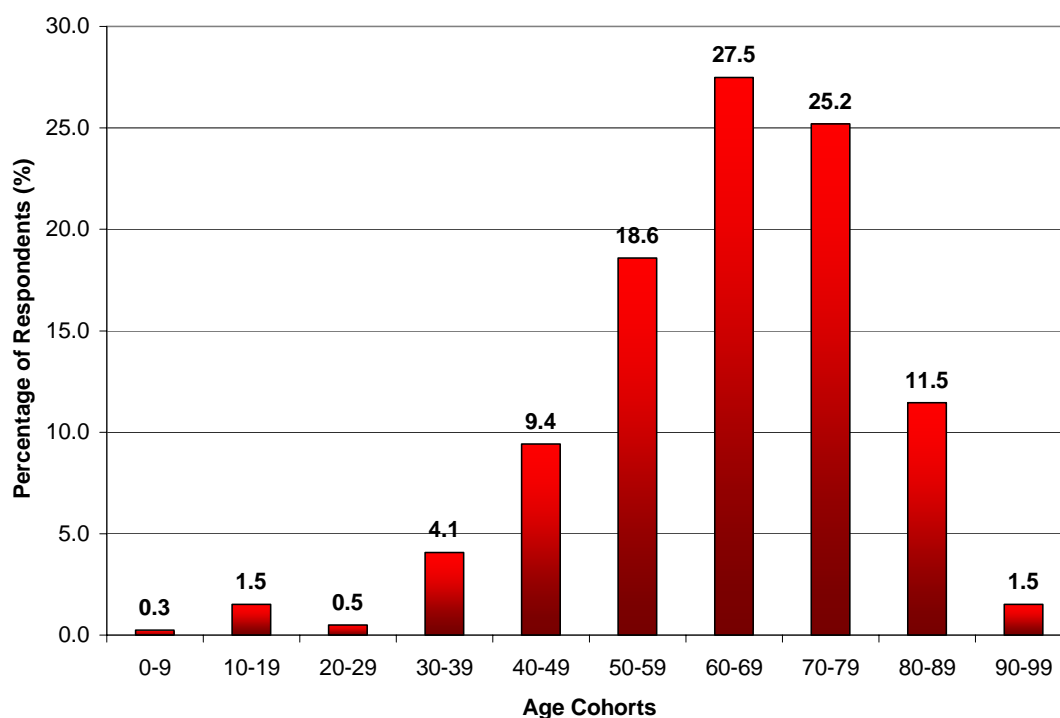
Figure 4.4: Age distribution of sample

Figure 4.10 summarises responses to the issue of the environments in which powered wheelchairs and scooters are used. The overall impression given by this graph is that powered wheelchairs and scooters are used in all of the environments suggested in the question. As many as 27% of respondents claimed that they use their wheelchair “off-road, where there are no pavements” – it is unlikely that these respondents might have been referring to travel in shopping precincts and/or pedestrianised areas, since such environments were included as a separate option. The most commonly cited types of daily usage were travelling on pavements and crossing the road (both mentioned by just under half of the sample), whilst 52% of respondents said they never used their wheelchair in the home. Figures 4.11 to 4.18 disaggregate responses according to the category of wheelchair used. Figure 4.14 shows the extent to which vehicles are used on the road (which was one of the primary objectives of this part of the research). It indicates that Class 3 vehicles are used on the road on a daily basis by 39.9% of the sample, and “most weeks” by 66.5%. It is perhaps a little surprising that vehicles that are claimed by their owners to have a top speed of less than 6 mph are used on the road every day by as many as 18.5% of respondents, although this might be an indication as to how many respondents live in locations where there are no pavements. Crossing the road, which potentially makes wheelchair users vulnerable to personal injury, appears to be another common use for powered wheelchairs and scooters; 90.7% of Class 3 vehicle owners use it for crossing the road at least on a weekly basis, whilst the equivalent figure for Class 2 wheelchairs is 79.8%. Generally, Class 3 vehicles are clearly more commonly used on a daily basis than Class 2 types, in all of the environments, except, somewhat surprisingly, in the home.

Figure 4.5: Extent to which advice and training were provided by the supplier

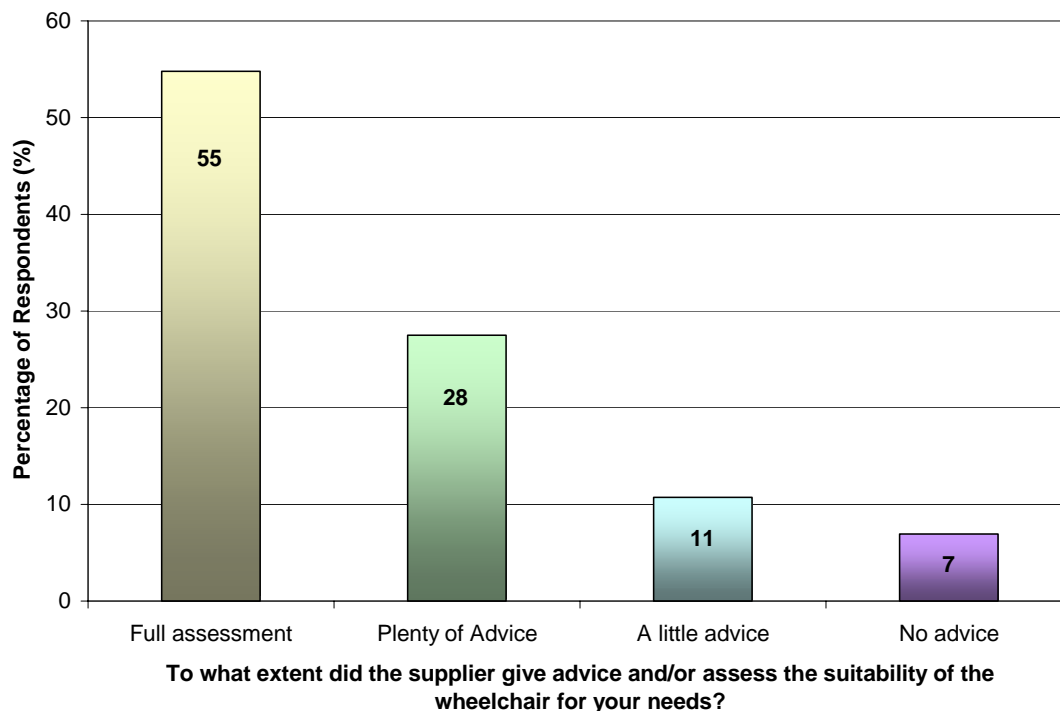


Figure 4.6: Advice and training given, by how recently wheelchair was acquired

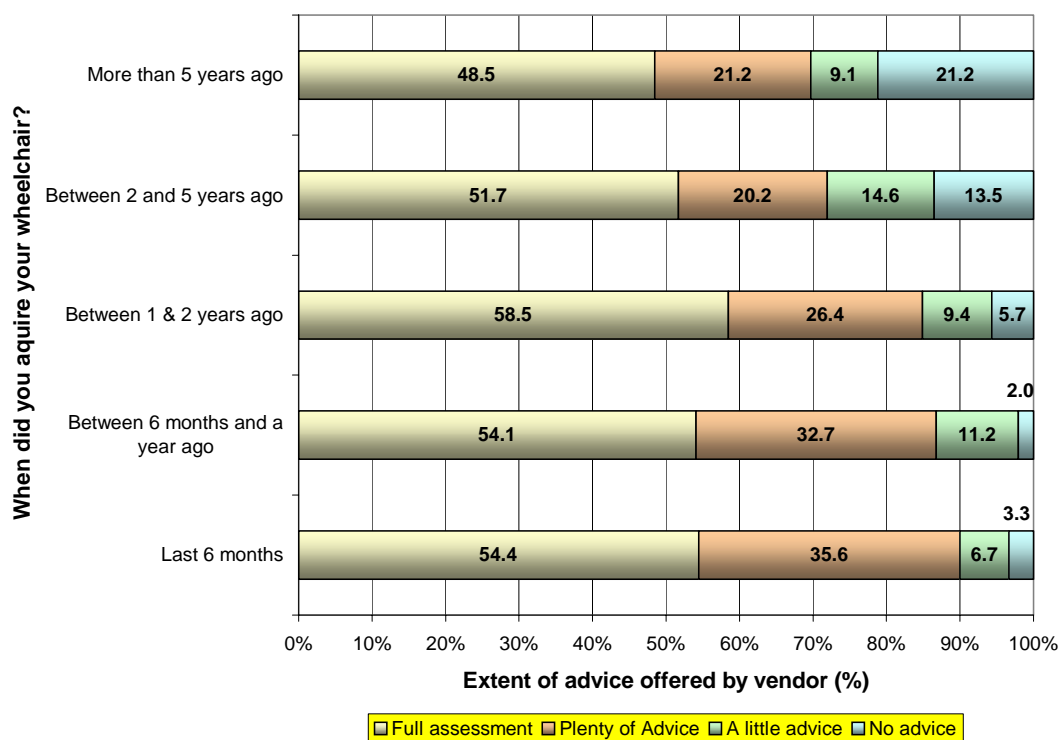


Figure 4.7: Respondents' attitude towards the speed of their wheelchair, by age

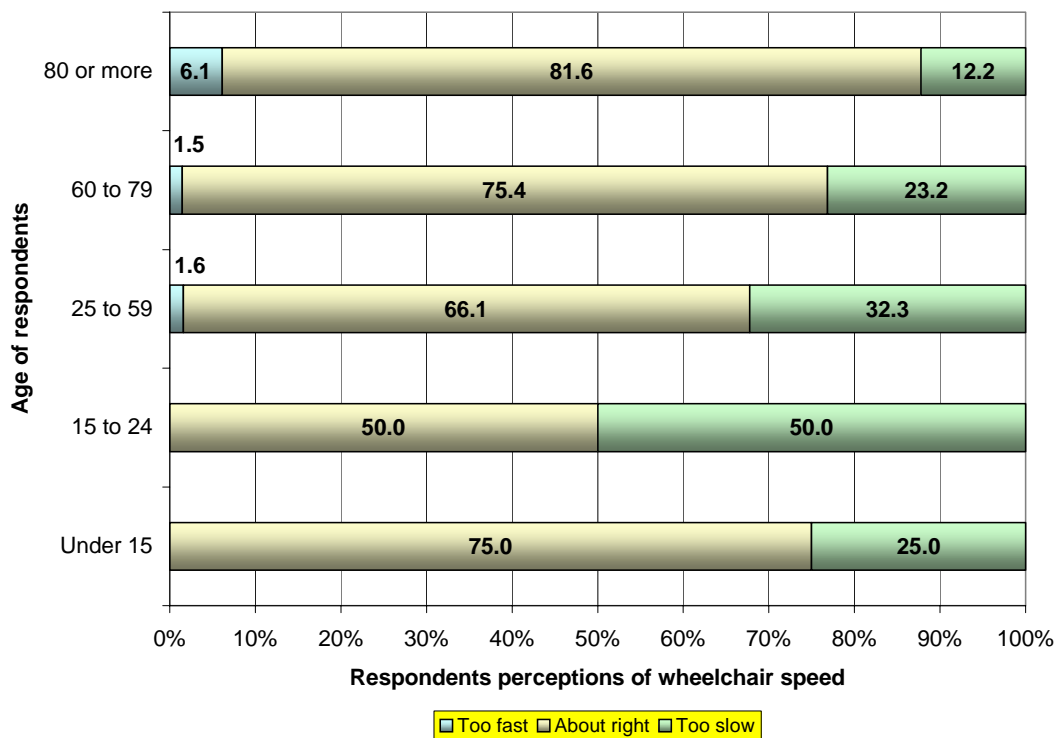


Figure 4.8: Respondents' attitude towards the speed of their wheelchair, by sex

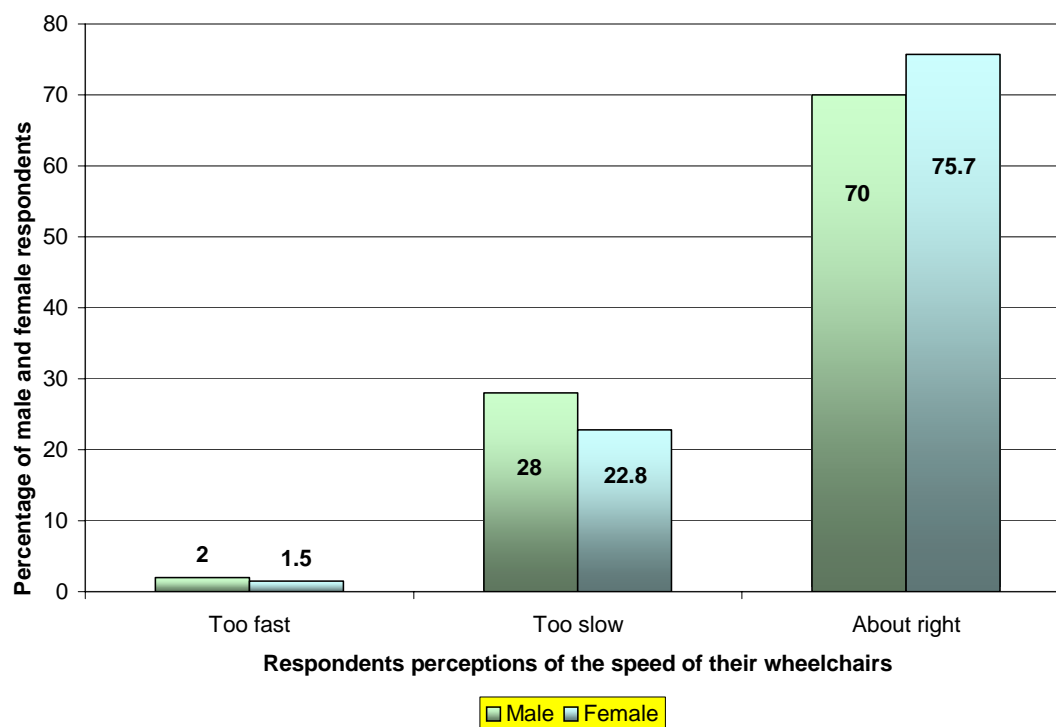
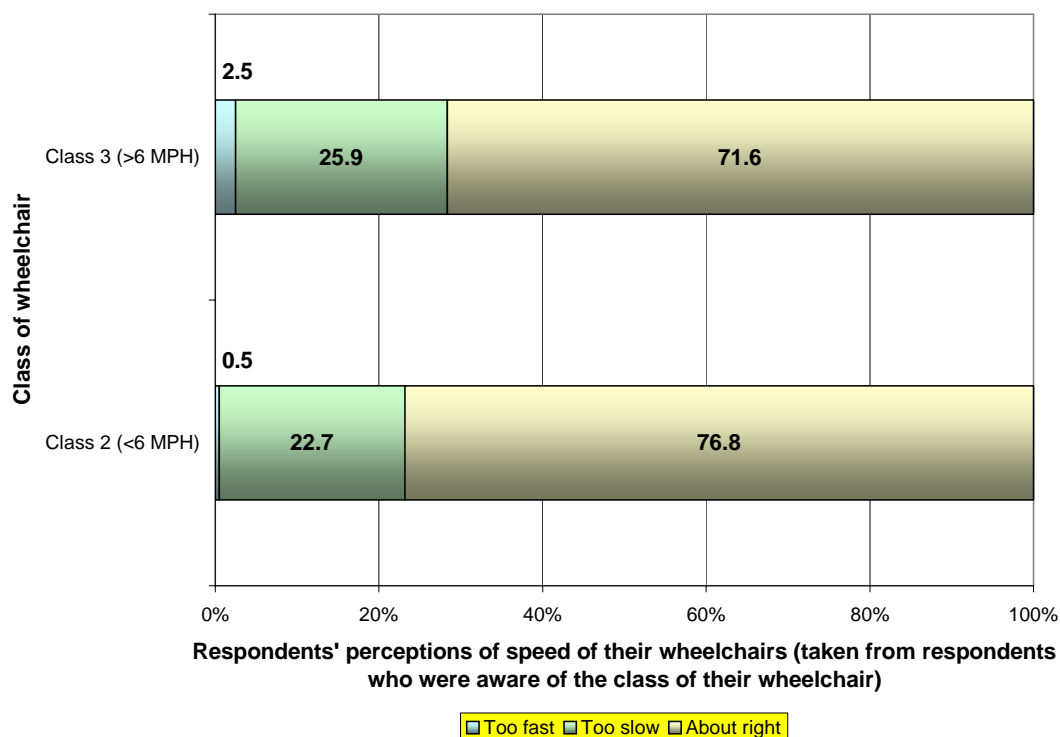


Figure 4.9: Respondents' attitude towards the speed of their wheelchair, by category of vehicle



4.4. Summary of findings

Whilst the response to the questionnaire was fairly patchy, in as much as there was a variation in response rates between the different methods of distribution, the overall return of 13.4% was very satisfactory, for a postal questionnaire survey. It was not possible, however, to structure the sample to reflect a realistic split between users of Class 2 and Class 3 wheelchairs, because of the method of distribution that had to be employed, and this was reflected in the slightly unrepresentative balance between users of these two classes of vehicle.

An important finding in the context of the study was that over half of the respondents stated that they had undergone a full assessment of their needs before purchasing their powered vehicle; furthermore, it was apparent that the administering of training and/or a needs assessment was increasingly likely the more recently the vehicle had been purchased. This suggests that standards of service in the industry are improving, which is contrary to some of the anecdotal evidence that was offered to the project. Moreover, there were few respondents who thought that the powered wheelchair or scooter that they used was “too fast”, which also suggests that there might be mechanisms in place to ensure that equipment sold is appropriate for the buyer’s needs.

Responses on usage reveal that powered wheelchairs and scooters are commonly used in all types of environment, but the most common modes of usage were on pavements, and also for crossing the road. Arguably the most

surprising finding was that 18.5% of respondents said that they used their Class 2 vehicle on the road “every day”.

Figure 4.10: use of powered wheelchairs and scooters in different environments

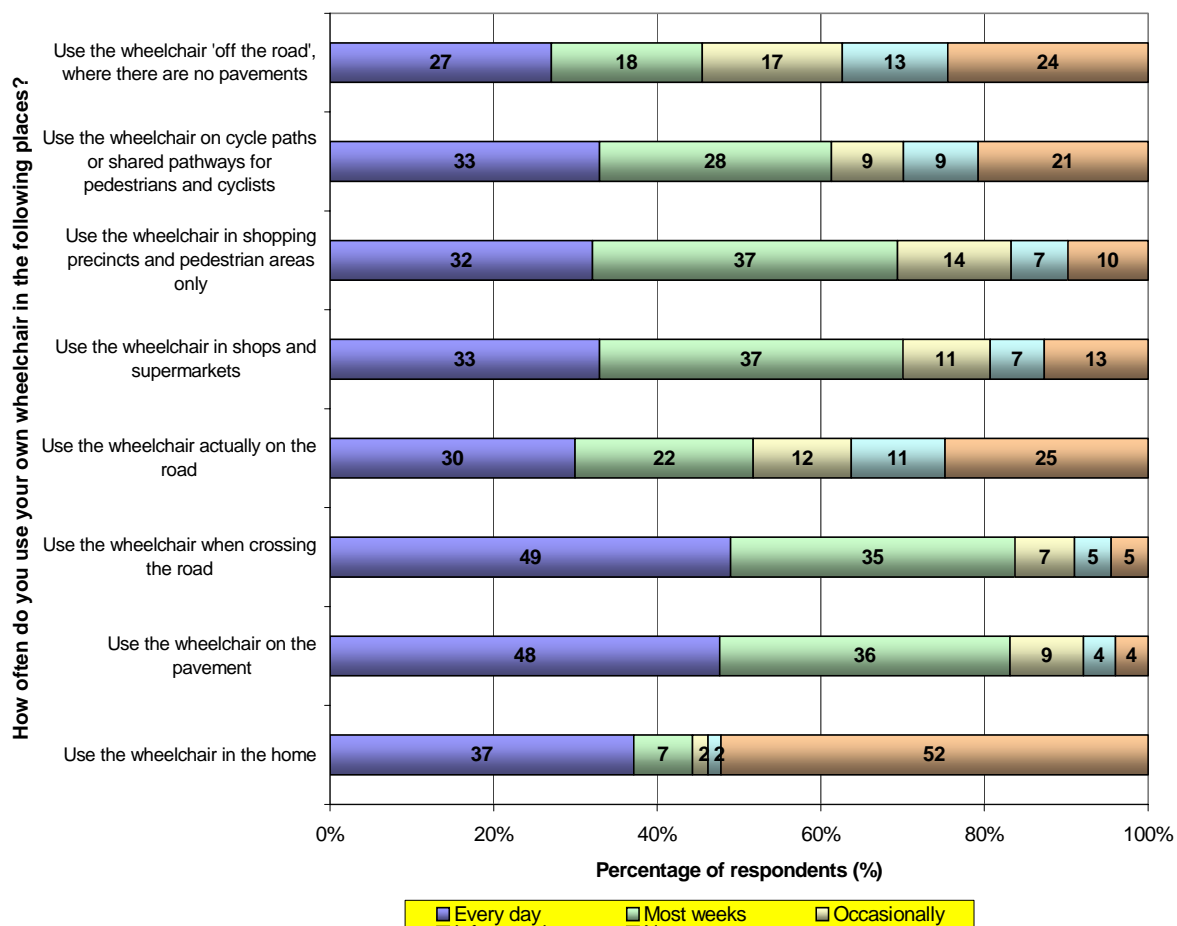


Figure 4.11: Use of wheelchairs in the home, by category of vehicle

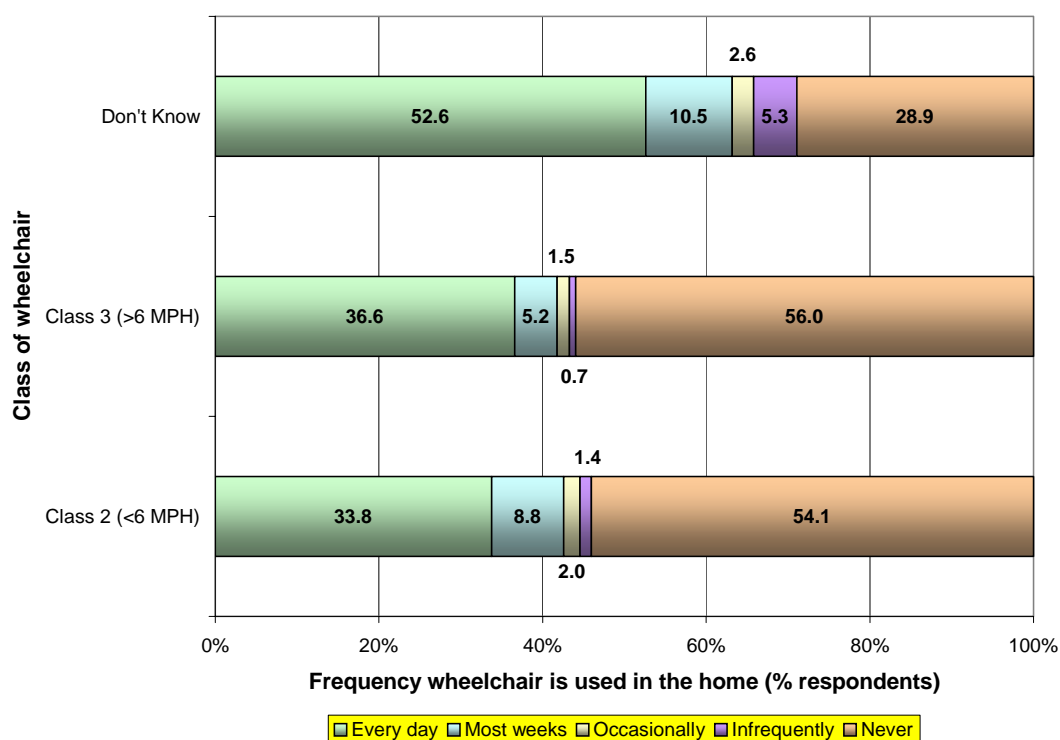


Figure 4.12: Use of wheelchairs on the pavement, by category of vehicle

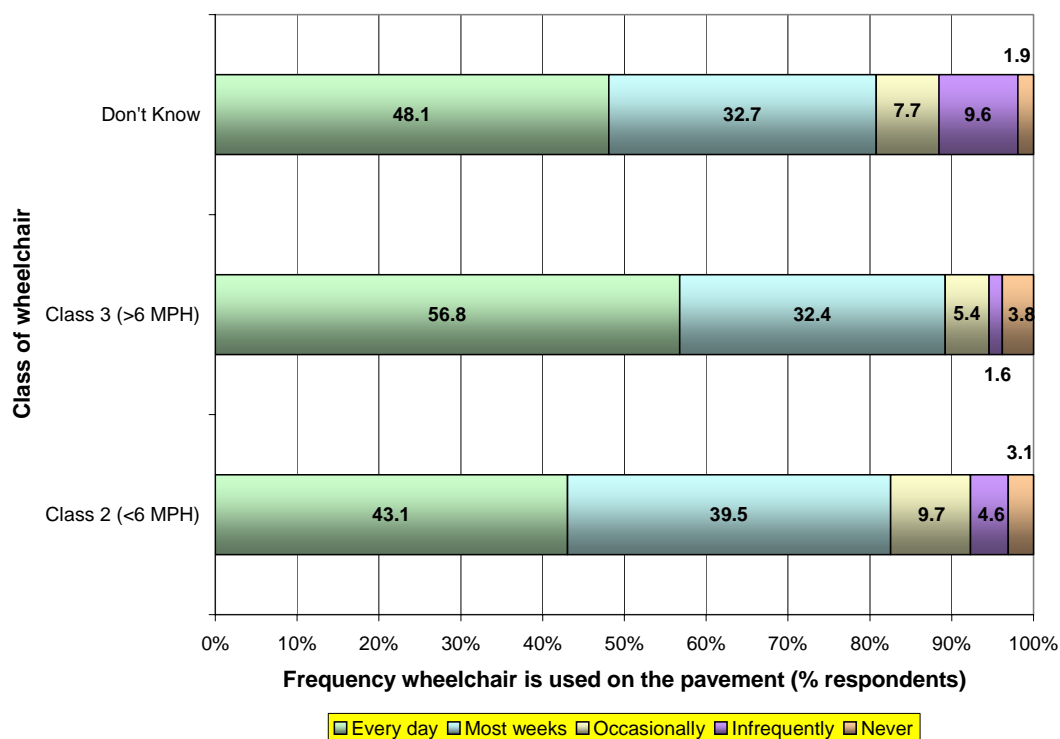


Figure 4.13: Use of wheelchairs for crossing the road, by category of vehicle

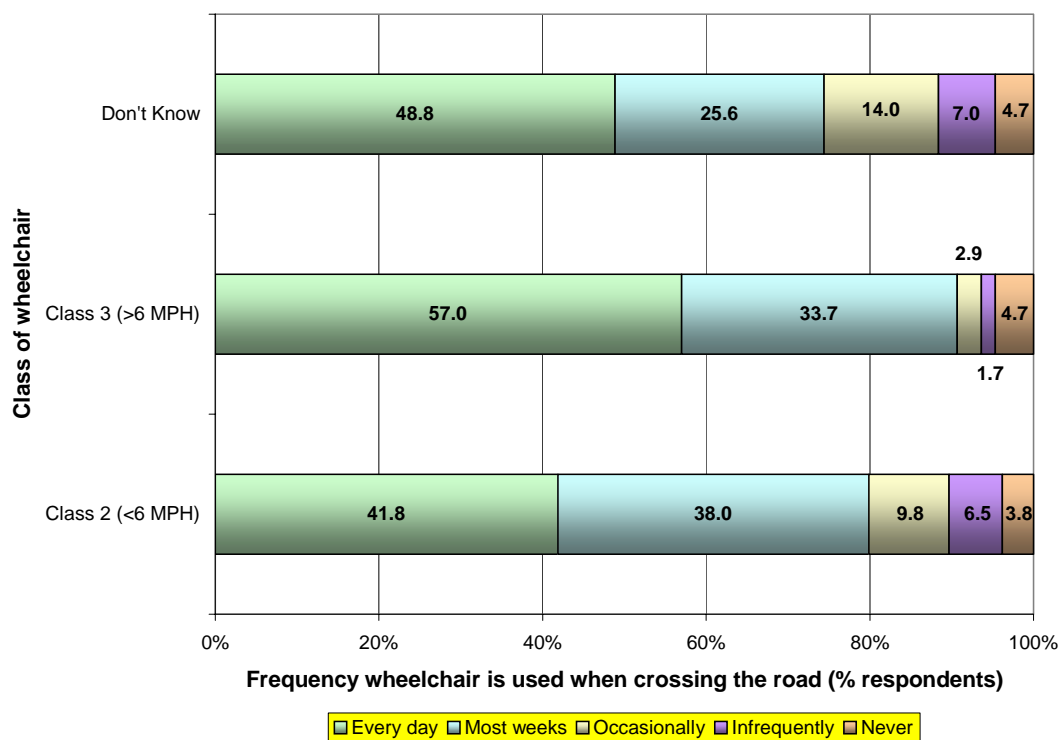


Figure 4.14: Use of wheelchairs on the road, by category of vehicle

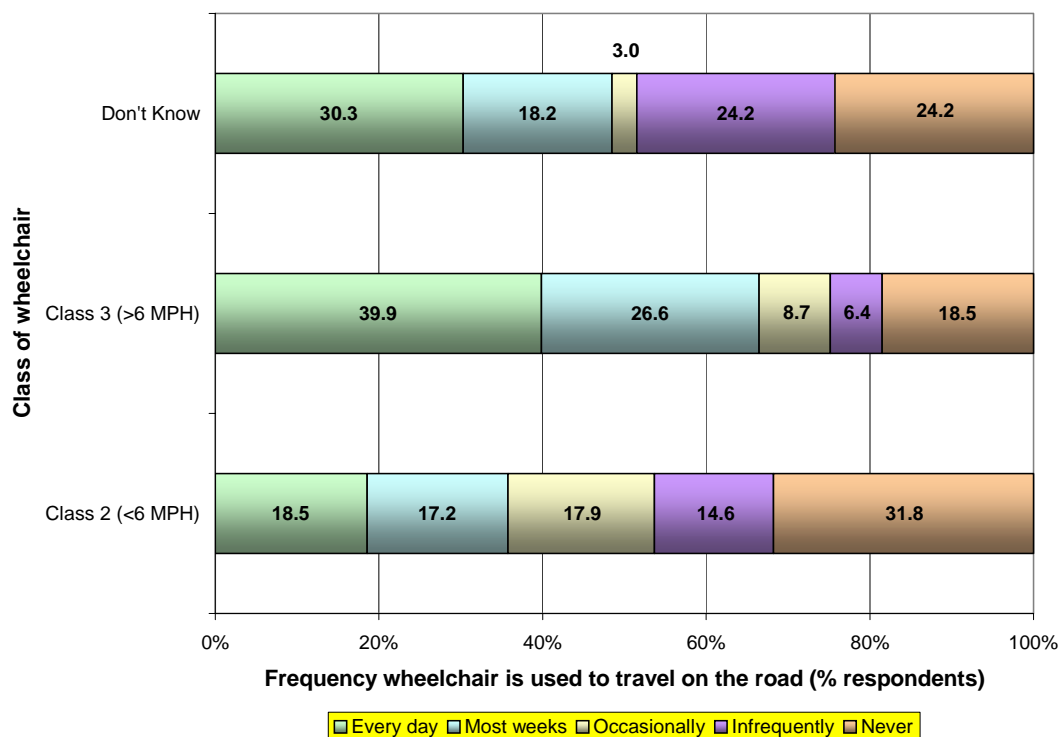


Figure 4.15: Use of wheelchairs in shops and supermarkets, by category of vehicle

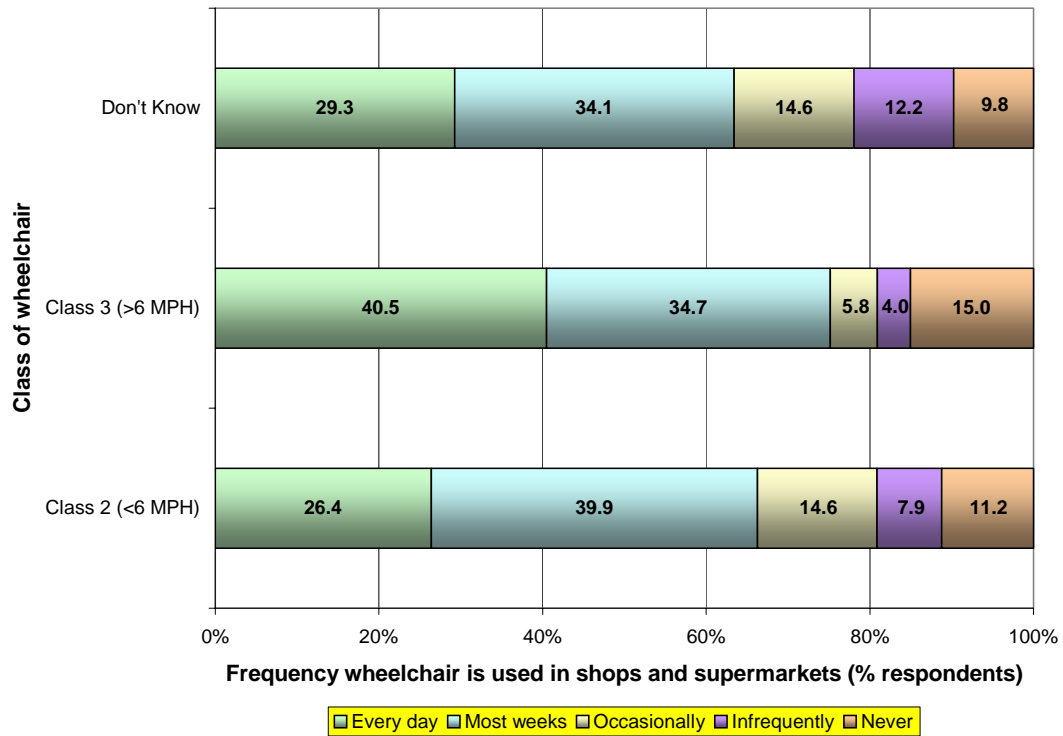


Figure 4.16: Use of wheelchairs in shopping precincts and pedestrian areas, by category of vehicle

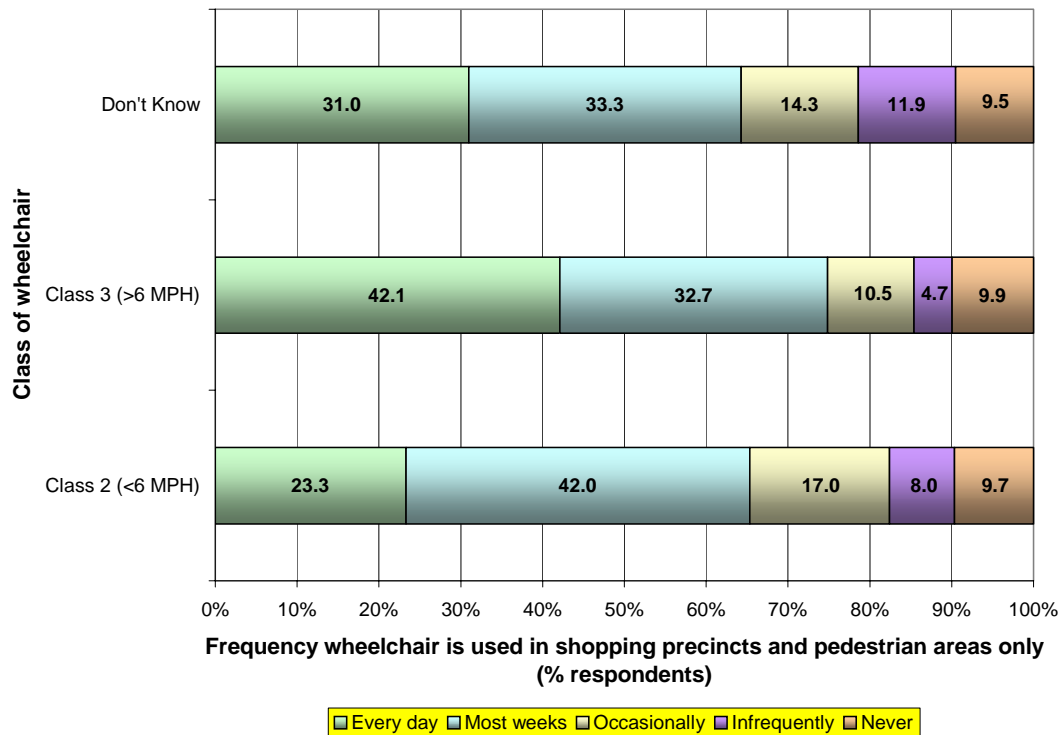


Figure 4.17: Use of wheelchairs on cycle paths or shared pathways with pedestrians and cyclists, by category of vehicle

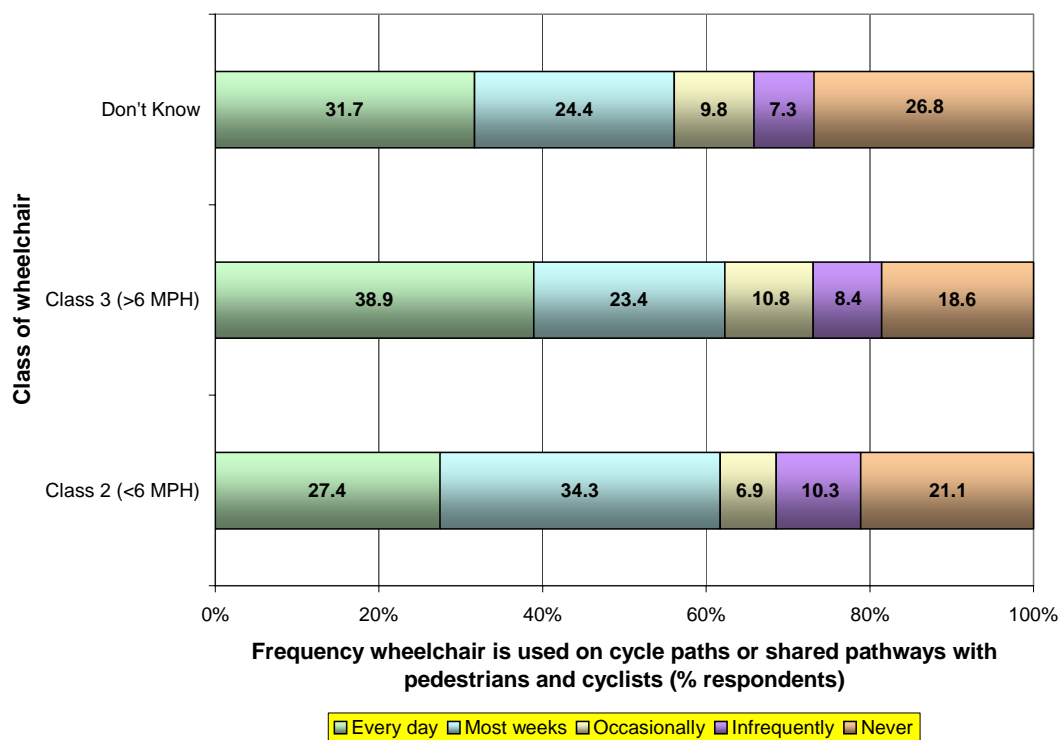
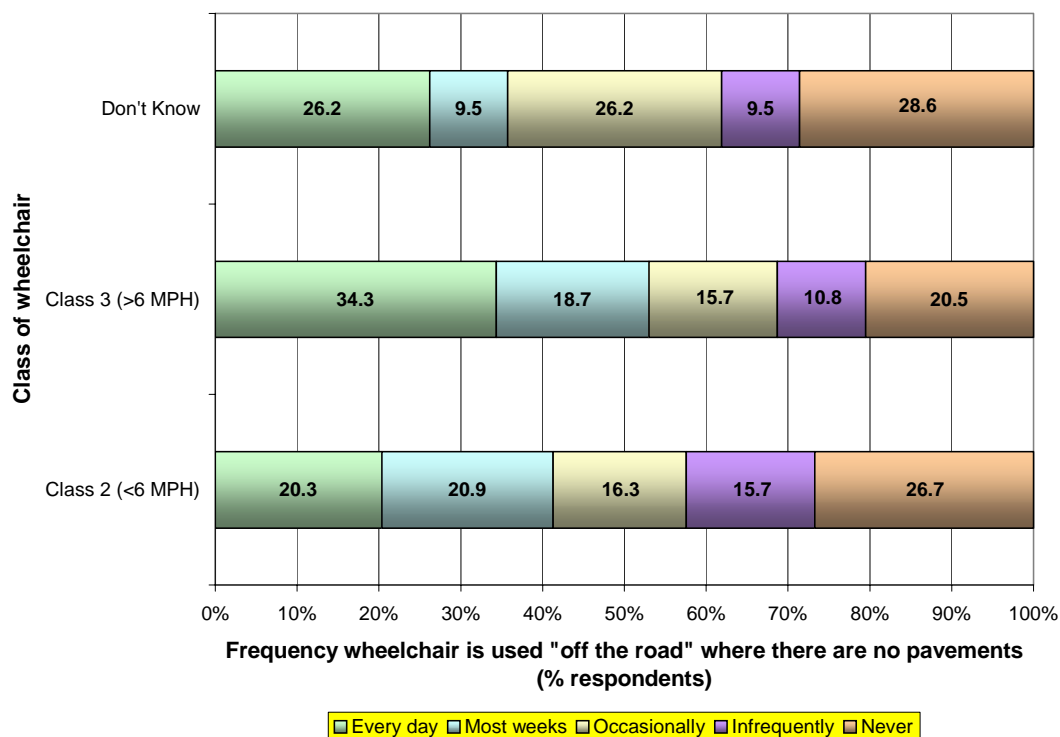


Figure 4.18: Use of wheelchairs "off the road", by category of vehicle



5. Estimating the Number of Incidents Involving Powered Wheelchairs and Powered Scooters in the UK

The objective of this part of the research was to estimate the frequency of incidents involving powered wheelchairs and powered scooters; incidents associated with injury to the user or a third party, or with damage to third party property, were of prime concern (more than tips and falls involving just the user, for example). The main challenge for the research method was to seek information from a variety of sources, since there was no prospect of all the relevant information being gathered from a single, centralised database. It was thought likely that incidents of varying seriousness would be reported and recorded by different agencies. For example, whilst it was anticipated that fatalities would be fairly rare, it was thought that these would be fairly well documented. Similarly, it was expected that serious injuries, which might be defined by the necessity for hospital treatment, would also find their way onto official records, either through the Police or through the Health Service, but that minor injuries, requiring no more than First Aid would be more difficult to find. Finally, minor bumps and scrapes and near misses were expected to be almost impossible to ascertain, and might remain an intangible input to the analysis.

The types of incident sought by the research team were regarded, conceptually, as forming a “pyramid” of different severity levels, with a very large number of barely tangible, unreported incidents occupying the base level, with successive levels of incident becoming increasingly severe, and decreasingly common, but increasingly well documented. Because of the nature of the research, a multi-faceted methodology was adopted, with information sought through a number of channels. The search began with a review of national statistical sources. The next level of enquiry was to consult County / Local Authority sources (i.e. the Police, Trading Standards etc.), and then insurance companies known to offer insurance for powered wheelchair and powered scooter users. At a more local level, shopping precincts, shopmobility schemes and supermarkets were approached for information on incidents – particularly as it was thought that their Health & safety records, accident books and complaints records might be a source of data on incidents of a more minor nature – and there was a general trawl of Press cutting and Court proceedings databases for information on more isolated incidents. The latter type of search provided the opportunity for more qualitative evidence to be gathered on the manner in which incidents involving powered mobility aid users were reported and perceived by the public – such evidence is also important to the process of informing policy.

Whilst fatalities were, as expected, fairly rare, information about them was not as readily available as was anticipated. For example, there was anecdotal, but

reliable, evidence for two fatalities - one in Norfolk, and the other in Lichfield – for which no details could be found, despite in-depth searches.

5.1. National Statistics

Theoretically, all incidents involving powered wheelchair and scooter users should be covered by one of four statistical sources with a nation-wide coverage. These are Road Traffic Accident statistics compiled by the Department for Transport, records of accidents occurring in the workplace, collected by the Health & Safety Executive, and the Department of Trade and Industry's HASS (Home Accident Surveillance System) and LASS (Leisure Accident Surveillance system) databases. The main issues with using these databases are those of whether, and how, the fact that an incident involved a powered wheelchair or powered scooter user were recorded, and whether there is a mechanism for successfully interrogating the relevant data. Nevertheless, all of these information sources were examined.

Much information is available relating to Road Traffic Accidents, including statistics under the following headings:

- Road Traffic Accidents

- Road deaths, EU comparison. (2000:Social Trends 33)
- Casualties from road accidents involving illegal alcohol levels, 1986 to 2001. (Social Trends 33)
- Accident deaths: by cause 1971 – 1988. (Social Trends 31)

- Mode of Transport of Accident Victim.

- Road accident casualties: by road user type and severity 1991-2001. (Annual Abstract of Statistics)
- Road casualties: by age and type of road user, 2001. (Regional Trends 37)
- Passenger death rates: by mode of transport 1981-1999. (Social Trends 31)

Unfortunately, in all of these tables, where accidents are classified according to the type of motor vehicles involved, powered wheelchairs and scooters as a vehicle-type fall into the “other” category, along with vehicles such as caravans. The Department for Transport only records incidents involving vehicles with a vehicle registration number; incidents on roads and pavements are covered, but not those in pedestrianised areas. A general problem with statistics associated with powered wheelchairs and scooters, in terms of road safety statistics, is that they are not currently defined as being a motor vehicle. This means that their usage on roads is virtually unrecorded and unmonitored. The DfT's Transport Statistics Department (Roads) deals with figures relating to the UK's vehicle stock and with related registration and licensing issues, directly supporting the Driver & Vehicle Licensing Agency. However, since vehicles are categorised according to taxation class, and then body type, the Transport Statistics Department has no records on Class 2 and Class 3 wheelchairs.

Similarly, the publication “Road Accidents Scotland, 1998” also puts electrically powered mobility vehicles into the “Other” category, and “occupants of prams or wheelchairs” are classified as being merely pedestrians. The Transport Statistics branch of the Scottish Executive was contacted directly, but the research team was informed that accidents in Scotland are recorded using a standard Stats 19 format, so no information would be available in the format required for the current project.

A general problem with using national statistics is that, even when wheelchair-related figures are available, they are very small in magnitude, compared with all incidents. For example, the UK’s Health & Safety Executive (HSE) was approached for data; the HSE compiles statistics connected with RIDDOR (Reporting of Injuries, Diseases and Dangerous Occurrences Regulations). Therefore, the statistics provided refer only to reportable injuries, i.e. those arising directly out of work activity – this means that these data do not include traffic accidents, accidents in the home etc..

Nevertheless, HSE figures for fatalities to members of the public illustrate the relatively small-scale nature of accidents that might involve wheelchair users. Of the 392 fatalities reported for 2002 - 2003, 256 of these were due to suicides or trespassing on the railway; of the 136 remaining incidents, 45 of these were related to the National Health Service. Only six reported incidents were described as “Hit by a moving vehicle”.

It was possible to obtain figures from the HSE relating to the categories,

- Scooter¹⁵
- Other vehicles for carrying people
- Wheelchair / patient trolley

However, it is not clear from these data as to the precise cause of the accidents that they describe, and there is certainly no way in which, say, wheelchairs can be separated from patient trolleys (and certainly no way of obtaining information on powered wheelchairs and scooters). Nevertheless, figures for both 2001–2002 and 2002–2003 are contained in Appendix E.

An attempt was made to access data held within the Health Service by contacting a sample of hospitals to request access to information that was kept on the nature, severity and cause of injuries to patients attending A&E Casualty departments. This approach ultimately proved to

¹⁵ The data source does not define “scooter”; therefore, it is not known whether this term refers to a two-wheeled motor vehicle, a child’s two-wheeled scooter or a powered mobility aid.

be fruitless, but such Health Sector-based information was obtained indirectly, through the HASS and LASS databases^{16 17}.

Data are gathered for HASS and LASS by interviewing patients at A&E units at a representative sample of 18 hospitals in the UK; the criteria for hospitals to be selected to submit information for this database are that the hospital must at least,

- attend to more than 10,000 A&E cases per year
- operate a 24-hour service
- take ambulance cases

The sample of 18 hospitals has been drawn from a pool of approximately 300 hospitals that meet these criteria, the final selection being made in order to provide an even geographical spread of locations, a mixture of urban and rural environments, and a selection of different-sized A&E units serving areas of different population size¹⁸. In total, 324,151 home and leisure incidents that caused people to seek hospital treatment were recorded using this method in 1999; this relate to what is estimated to be a total of some 5.9 million such incidents – 2.8 million in the home and 3.1 million categorised as leisure accidents - per year¹⁹. Both HASS and LASS focus on consumer products that are involved in incidents causing injury, and include details of the incident itself, the circumstances surrounding the incident and any injuries that were caused. Tables 5.1. and 5.2. show home- and leisure-related accident figures, along with the Dti's associated national estimates, for the years 2000 and 2002, respectively. In both tables, the figures are the result of a disaggregation of the general consumer product category "Mobility aid or baby transport" – in 2000 the total number of incidents recorded for this larger category was 1,646 (national estimate: 29,200), whilst in 2002 the figure was lower, at 1,070 (national estimate: 21,935).

Table 5.1. Home accidents and leisure accidents involving different mobility aids in 2000 (HASS and LASS)

Type of wheelchair	Home accidents recorded	HASS National estimate	Leisure accidents recorded	LASS National estimate
Manual	48	852	57	1,011
Powered	29	514	39	692
Unspecified	217	3,850	175	3,105

¹⁶ 23rd Annual report of the Home and Leisure Accident Surveillance System – 1999 Data. (Consumer Affairs Directorate, Department of Trade and Industry, 1999).

¹⁷ 24th (Final) Report of the Home and Leisure Accident Surveillance System – 2000, 2001 and 2002 data. (Consumer Affairs Directorate, Department of Trade and Industry, 2002).

¹⁸ The 18 hospitals in the sample are located in Stockton, Luton/Dunstable, Skegness, Birmingham (Selly Oak), Merthyr Tydfil, reading, Carshalton, Macclesfield, Nuneaton, Blackburn, Newry, Airdrie, London (Denmark Hill), Hereford, Keighley, Barnstaple, Norwich and Worthing.

¹⁹ The figures have been factored up as national estimates by the Dti using an undisclosed formula.

3-wheel mobility veh.	1	18	2	35
4-wheel mobility veh.	1	18	3	53
Unspecified mobility veh.	4	71	8	142

Table 5.2. Home accidents and leisure accidents involving different mobility aids in 2002 (HASS and LASS)

Type of wheelchair	Home accidents recorded	HASS National estimate	Leisure accidents recorded	LASS National estimate
Manual	55	1,128	73	1,497
Powered	26	533	44	902
Unspecified	205	4,203	182	3,731
3-wheel mobility veh.	3	62	21	431
4-wheel mobility veh.	5	103	8	164
Unspecified mobility veh.	0	0	4	82

Whilst it is perhaps surprising that there were, generally, few incidents recorded involving what are described in full by HASS and LASS as “Mobility vehicles for disabled”, the one notable difference between what are two fairly similar sets of figures, is the increase in the number of leisure incidents involving three-wheeled mobility vehicles, from 2000 to 2002. Whilst there were only two such incidents recorded in 2000, this figure had increased to 21 in only two years, with a consequent rise in the calculated national estimate from 35 to 431.

In the context of the current project, where interest is focused mainly on incidents taking place in public places, as opposed to in the home, the LASS figures are of more relevance than those of HASS. These data refer to accidents that were thought to be serious enough for the injured party to seek hospital treatment in an A&E department of a hospital. What are not known, however, are details of the precise location or general environment of each incident, the actual severity of injuries caused, or details of culpability for the incident; importantly, there is no indication of whether a third party were involved in any of these recorded incidents, either as the culprit or the “victim”.

The Medical Devices Agency (MDA) is another organisation that was approached for data. The Agency publishes figures on its web-site in the form of Device Bulletins, and these are available for the years 1995 to 2003, inclusive. Powered wheelchairs and scooters are dealt with under the heading of “Wheeled Mobility and accessories, including powered and non-powered wheelchairs & accessories, supportive seating & cushions, and wheeled mobility aids”. In total, approximately 8,730 incidents are reported each year, of which some 1,400 involve

wheelchairs. One caveat to these figures mentioned by MDA staff is that all such incidents on the database are almost certainly substantially under-reported; nevertheless, the perception at MDA is that incidents involving injury to users of powered wheelchairs and scooters are fairly rare, and so are not considered to be problem. The number of incidents reported concerning powered wheelchairs / scooters declined substantially from approximately 1,400 in 2002, to under 1,300 in 2003 – our correspondent in the MDA was unable to explain this unexpected reduction in reported incidents. Table 5.3 shows the casualty and injury statistics that have been obtained from the MDA.

Table 5.3. Statistics on fatalities and injuries obtained from the Medical Devices Agency, 1999 to 2003²⁰.

	1999	2000	2001	2002	2003
Total AIRs all wheelchair types	1154	1301	1317	1388	1287
Total powered wheelchairs AIRs	398	480	495	500	406
Total wheelchair fatalities	7	4	11	12	2
Total fatalities (powered wheelchairs)	3	1	5	9	0
3rd party involvement fatality (powered wheelchairs)	1	0	4	2	0
Total wheelchair injuries (serious)	8	18	13	8	9
Total injuries powered wheelchair (serious)	5	13	5	2	3
Third party involvement powered wheelchair (serious injury)	2	3	1	0	2
Total wheelchair injuries (minor)	66	113	186	203	157
Total injuries powered wheelchairs (minor)	34	44	73	96	65
Third party involvement minor injury to user or 3rd party powered wheelchair	2	3	6	6	6

A team of Dutch researchers has recently reported on a project to gain insights into wheelchair-related incidents, with powered and manual wheelchairs, as reported in the UK, the USA and The Netherlands²¹. This RIVM report completed investigations on 436 reports, supplied from the MDA's database, relating to powered wheelchairs and scooters, and 561 reports relating to manual wheelchairs. A finding from this study was that an actual injury was mentioned as an outcome in a small minority of these reports; for powered vehicles, six incidents resulted in a serious

²⁰ AIRs = Adverse Incident Reports. Powered wheelchairs = single seat occupant or attendant control battery powered wheelchairs and scooters with 3 or more wheels.

²¹ AW van Drongelen, B Roszek, ESM Hilbers-Modderman, M Kallewaard and C Wassenaar Wheelchair incidents. (RIVM Report 318902, for the Dutch Inspectorate for Health Care, 2002).

injury, and there was also one fatality. (There was one serious injury, and no fewer than three fatalities, in connection with manual wheelchairs). The study also states that “Actual minor injuries” were reported more often than actual injuries; the most common “outcome” for a device report relating to a powered wheelchair or scooter was “Potential injury” (27% of cases), whilst the majority of reported incidents concerning manual wheelchairs resulted in “Unknown outcome” (28%) or “No effect” (27%).

Contact was made with the Association of Chief Police Officers (ACPO) Central Office, and it was learnt that no enforcement policies are currently in place concerning the use of Class 2 and Class 3 powered wheelchairs and scooters. Any incident is treated on an individual basis. It is understood that, generally, enforcement measures are introduced when a real need for them is demonstrated. In the case of these vehicles, according to ACPO, there is no evidence to suggest a need for an enforcement policy, since the number of incidents is not enough to warrant enforcement.

5.2. Data from Local Sources

All Local Authority Road Safety Units, and a number of Police Constabularies and Trading Standards units, were approached for statistics. The response to this request was patchy – this was not unexpected, since Stats19 forms, which are the standard medium for Police records, were known to lack the necessary detail for the purposes of this project, and it was thought likely that only a few Local Authorities would record details at the point of entry in such a way as to enable their database to be interrogated in the manner required. Common responses from agencies contacted were: *‘our system does not allow us to interrogate casualties for powered wheelchairs’*, *‘report form does not have a “box” etc..*

However, there were some respondents who stated that there was no problem with powered wheelchairs and scooters in their area; these included,

Hampshire County Council
North Lanarkshire CC
Blaenau-Gwent CC
Shetland
Stirling CC
Croydon CC
South Ayrshire Council
Fife
Argyll and Bute
The Western Isles
Greater Manchester Police
Greater Manchester Road Safety Officers’ Group
Northamptonshire CC

For Lancashire, road traffic data on personal injury accidents “with reference to invalid carriages” were made available by Lancashire Police for the four-

year period 1999 – 2002. These amounted to three “serious” injuries and 14 “slight” injuries, on classes of road ranging from ‘A’ roads (eight of the 17) to unclassified roads (six); there were no fatalities. Our respondent put these figures into context by also providing overall road traffic statistics for the same time period. These are shown in Tables 5.4. and 5.5., and illustrate the relatively minor numerical nature of accidents involving personal injury to powered wheelchair / scooter users.

Table 5.4. Personal Injury Accidents (PIAs), with reference to invalid carriages, in Lancashire, 1999-2002.

Date	Fatal	Serious	Slight	Road Class
03-Jun-99			1	A
07-Aug-99			1	A
25-Oct-99		1		U
28-Oct-99			1	U
29-Nov-99			1	A
16-Apr-00			1	A
12-Jul-00			1	B
18-Nov-00			2	C
23-Nov-01			1	A
22-Feb-02		1	1	U
19-Mar-02			1	A
24-Apr-02			1	A
19-Jul-02			1	U
15-Aug-02		1		U
10-Dec-02			1	A
Total	0	3	14	

Table 5.5. All injury accidents recorded by Lancashire Police

Road user	1994/1998 average	1999	2000	2001	2002
Pedestrian	912.2	821	788	809	713
Cyclist	494.4	421	405	421	346
Motor cyclist	411	453	484	478	535
Car driver or passenger	4,799	4,591	4,220	4,588	4,511
Other	562.8	531	447	446	455
All casualties	7,179.4	6,817	6,344	6,742	6,560

Surrey County Council sent the results of a data search using the keyword “scooter”, but this usually referred to the two-wheeled motor vehicle. However, four incidents of relevance to the project were found: three of these concerned motor vehicles hitting powered wheelchair / scooter users who were either crossing the road or using the road because of obstructions on the pavement, whilst the other described a powered wheelchair user being hit by a descending crossing barrier. The dates of these incidents were spread over a 41-month period from August 1999 to January 2003.

West Yorkshire Police was able to provide fairly comprehensive data using the string search “wheelchair”. During the period August 1994 to April 2003, there were 25 relevant incidents. The salient points from these data were that four involved scooters, whilst eight involved the injured party crossing the road; seven of the 25 incidents resulted in serious injury, whilst the other 18 resulted in slight injury.

Of other respondents reporting incidents, Wiltshire Police stated that there had been three incidents involving powered wheelchairs / scooters, which had all resulted in slight injuries, during the previous three years. However, our respondent added that:

“... there have been several others not reported or recorded. There is good anecdotal evidence to lead us to believe that there have been lots of incidents involving these types of vehicle. So much so that concerns have been raised several times in committee and in partnership meetings between the Police, Wiltshire County Council and Swindon Borough Council. There is a call and a need to encompass these vehicles in some sort of regulatory process.”

Nottinghamshire Police also provided data on 27 accidents involving powered wheelchairs and scooters between April 2000 and April 2003, inclusive, including one fatality and three serious injuries, with the remainder being of a minor / slight nature. Of these 27 accidents, 19 involved a powered wheelchair / scooter / mobility vehicle and a car. The average age of all those involved in the accidents was 69, with the youngest being 19, and the oldest 90.

Data supplied by Police forces are summarised in Table 5.6.

Table 5.6. Summary of accident data supplied by Police forces.

County	Total Population (millions)	Time period (months)	Number of injuries			Injuries per year		
			Fatal	Serious	Slight	Fatal	Serious	Slight
Lancs.	1.135	48		3	14		0.75	3.5
Surrey	0.375	41			4			1.17
W. Yorks	2.09	117		7	18		0.71	1.85
Wiltshire	0.433	36			3			1.0
Notts.	1.016	37	1	3	23	0.32	0.97	7.46

Whilst there is a limit to how many firm conclusions can be drawn from such a small sample of counties, it does appear from Table 5.6. that the counties with the larger populations tend to have the highest frequency of incidents involving powered wheelchair / scooter users. These three counties, Lancashire, West Yorkshire and Nottinghamshire, are also those which reported serious injuries to users, and there is a certain consistency among them in the rate of serious injuries per year.

These data can further be put into perspective by considering the populations of the counties featured in this table, or, more precisely, using the figures

outlined in Section 3 to make a crude estimate of the number of powered wheelchair / scooter users there might be in each county. Let us assume that 80% of each county's population are adults, of which 13.5% are disabled, of which 7% use a wheelchair, of which 10% are powered; therefore, estimates of the number of powered wheelchair / scooter users in each county can be estimated as follows,

Lancashire	858
Surrey	283
West Yorkshire	1,580
Wiltshire	327
Nottinghamshire	768

Hence, it can be estimated that, in Lancashire, one in every 202 powered wheelchair / scooter users will be involved in a reported incident involving an injury of some kind each year; similarly, one in every 1,144 powered wheelchair / scooter users in Lancashire will be involved in an incident causing a serious injury each year. Since the estimate is that there are fewer than 1,144 powered wheelchair / scooter users in Lancashire, it is more intuitive to state that one powered wheelchair / scooter user in Lancashire will be seriously injured less than once a year, but this is already stated in Table 5.6.; nevertheless, the use of ratios is still useful for the purposes of comparison, and these ratios are summarised in Table 5.7.

Table 5.7. Comparison of the ratio of powered wheelchair / scooter users who are likely to be involved in incidents causing injury, in selected counties.

County	Any injury	Serious injury ²²
Lancashire	1 in 202	1 in 1,144
Surrey	1 in 242	-
West Yorkshire	1 in 617	1 in 2,225
Wiltshire	1 in 327	-
Nottinghamshire	1 in 88	1 in 595

These figures are interesting, in that they present a different picture to the data in Table 5.6. – when population size is taken into account, it appears that powered wheelchair / scooter users in West Yorkshire are by far the least likely to either be involved in an incident causing injury, or have a serious injury. Powered wheelchair / scooter users in Nottinghamshire, on the other hand, are most likely to be involved in an incident causing injury; in fact, according to reported incidents, they are nearly three times more likely to be injured than powered wheelchair / scooter users in Surrey, and seven times more likely to be involved than their counterparts in West Yorkshire.

As well as Police forces, Trading Standards and Registration Services were consulted to ascertain whether there had been any breaches of regulations

²² For the purposes of this calculation, the one instance of a reported fatality has been included as a "serious injury".

reported to them, and if so, whether any action had been taken. From a disappointing response, North East Lincolnshire Council, Merton CC and Wandsworth CC Trading Standards Departments reported that they had received no complaints concerning breaches of regulations concerning the sale of powered wheelchairs and scooters.

However, Dorset Trading Standards quoted two instances: the first of these concerned a complaint against a manufacturer after a powered wheelchair user was injured when a member of the public helping them out of their vehicle accidentally put the vehicle into reverse (the point being that the vendor should have instructed the buyer to always turn the power off before disembarking); the other complaint actually led to prosecution of a manufacturer, because a user of one of their wheelchairs ran out of power during a trip, and was unable to get home.

Wirral Trading Standards reported one complaint that could certainly be attributed to a powered mobility aid – this concerned a mobility scooter with an insufficient braking system – and cited three other complaints that related to either a manual or powered wheelchair, connected with the failure of the equipment to go up a kerb, brake failure and faulty wheel bearings.

East Sussex Trading Standards described one incident on their records, concerning a scooter user who had fallen off of her wheelchair whilst using it in her garden; the case centred around whether the scooter was being used “off-road” at the time.

5.3. Data from Insurance Companies

A handful of insurance brokers offer cover for powered wheelchair and scooter users, and these companies enjoy something of a niche position in the market. Whilst all of these companies were contacted for information, responses proved to be fairly coy, as the data were perceived to be very commercially sensitive (especially the total number of clients with policies with them). Because of this issue of confidentiality, the two insurance companies who have been kind enough to supply claims data will be referred to as Company A and Company B.

Company A, with approximately 30,000 powered wheelchair / scooter using clients, provided data on 3785 claims received for the period covering 2001, 2002 and 2003 up to September. Of these, 1,155 referred to theft, vandalism, accidental damage and use of the company’s service for assisting clients to return home. The remaining 2,630 claims all involved some sort of incident involving damage caused to, or by, the vehicle. Of these,

- 2118 (81%) arose as a result of damage caused by the vehicle making contact with an object, infrastructure, another vehicle, or a person.
- 512 (19%) were a result of the vehicle being hit by another object, mainly by another vehicle but also including shopping trolleys, cyclists, milk floats, and lawn mowers.

- 381 (14%) were related to damage caused to the scooter / wheelchair when mounting / dismounting kerbs.
- 5 (0.2%) involved a fatality.
- 576 (22%) involved a third party.
- 54 (2%) involved collisions resulting in injury to a third party.
- 142 (5%) resulted in the wheelchair or scooter being tipped over.
- 55 (2%) also involved cyclists.

Given that the data supplied by Company A referred to a time period of 33 months, it can be deduced that 956 claims involving some sort of incident involving damage caused to, or by, the vehicle can be expected each year from a sub-population of 30,000 powered wheelchair / scooter users.

Using the estimate derived in Section 3 for a total UK population of 44,778 powered wheelchair / scooter users, the national estimate for such claims is 1,427. The same logic can be applied to predict that 313 incidents involving a third party, serious enough to lead to an insurance claim, can be expected in the UK each year; there will be 29 incidents involving injury to a third party, and 2.7 (i.e. two or three) fatalities.

Company B provided data for the project for a five-year period, during which there were 15 incidents involving an injury, only one of which was “serious” (involving a broken ankle). From an estimated client base of some 23,000 powered wheelchair and scooter users, approximately 1,250 people made a claim on their insurance policy (equating to a ratio of 1 in 20), but most of these claims were for theft and vandalism. Information on claims involving both injuries and damage to property are shown in Table 5.8.

Table 5.8. Insurance claims involving injuries and damage to property (Company B, 1999 – 2003)

	Slight injury	Serious injury	Damage to property
1999	3	-	13
2000	2	-	10
2001	2	-	12
2002	5	-	14
2003	2	1	26
Total	14	1	75

These data show a slight increase in the number of injuries reported over time, but the data set is far too small for meaningful conclusions to be drawn. There was also a sudden increase – an approximate doubling – in the number of claims involving damage to property from 2002 to 2003. using the method

of calculation employed to make national estimates using Company A's data, it can be predicted, from Company B's evidence, that there will be approximately six claims associated with an injury in the UK each year. This figure is considerably lower than the prediction of 30 injuries to a third party, derived from Company A's data.

5.4. Data from Shopping Centres

Modern shopping centres and precincts provide shoppers with a wide range of facilities, in a temperature-controlled environment, under one roof. Their added advantage of providing level access throughout makes them very attractive to disabled people, particularly powered wheelchair and scooter users. The potential downside to this, however, is that such environments provides much scope for conflict between users of these vehicles and other pedestrians. For this reason, it was hypothesised that the major shopping centres in the UK might keep records regarding such incidents. The seven Centres from which data were requested are described in Table 5.9.

Meadowhall Shopping Centre, in Sheffield, reported having had nine incidents, the first in November 1999. Two of these were injuries to the user, with no other party involved (the user making an error of judgment), while the remaining seven involved third party pedestrians who were either hit by the vehicle or were run over. In five of the seven third-party incidents, the "victim" was administered first aid at the centre, and an ambulance was called for one person who had a suspected broken ankle. Three of these incidents involved a third party's leg being run into (on one occasion an ambulance was called as a result of a suspected broken ankle), and two others were described as "freak" incidents involving small children.

Table 5.9. Shopping Centres approached for data

Shopping Centre	Location	Number of visitors	Retail space
Arndale Centre	Manchester	750,000 per week	1.1 million sq ft
Metro Centre	Gateshead	500,000 per week	1.59 million sq ft
Bluewater	Kent	27,000,000 per year	1.6 million sq ft
Lakeside	Essex	500,000 per week	1.4 million sq ft
Trafford Centre	Manchester	465,000 per week	1.4 million sq ft
Merry Hill	Dudley	21.7 million per year	1.5 million sq ft
Meadowhall	Sheffield	30,000,000 per year	1.3 million sq ft
The Centre	Milton Keynes	280,000 per week	Not specified

The Trafford Centre, Manchester, has had seven reported accidents involving wheelchairs or scooters, the first in December 1999. Four of these involved collisions with members of the public, two were injuries sustained by the user through their own error. None of these incidents resulted in serious injury to either the user or a third party, and required nothing more than first aid for minor cuts and bruises.

Merry Hill Shopping Centre reported having had no recorded incidents involving either powered wheelchairs or scooters in the past year. The Centre,

Milton Keynes, had only two reported incidents involving powered wheelchairs from January 2002 to November 2003, but both of these occurred towards the end of this time period. The first of these was on the 19th of August 2003, when a female shopper was run over by a “motorised wheelchair”, causing damage to her elbow; the second incident, on the 30th of October 2003, involved another female shopper being hit by a powered wheelchair, causing damage to her ankle.

Whilst there were no data forthcoming from the other shopping centres approached, the figures outlined above do provide the basis for some analysis. These personal injury figures are summarised in Table 5.10.

Table 5.10. Summary of incidents involving personal injury in shopping centres

Shopping Centre	User injuries	Third-party injuries	Reporting period (months)	Ratio of injuries to visitors
Meadowhall	2	7	54	1 in 15 million
Trafford	3	4	53	1 in 15.3 million
Merry Hill	-	-	12	-
Milton Keynes	-	2	23	1 in 14 million

These relate the frequency of reported injuries to the number of people who visit each centre. In spite of the small numbers being dealt with here, there appears to be a remarkable similarity in the ratios of visitors per reported injury among the three shopping centres that had injury-related incidents to report. The conclusion from these data must be that there is a very low probability of a visitor to these shopping centres being involved in an incident which causes them an injury that is serious enough to be reported – moreover, only one such incident was reported to have been serious. Taking the ratio of one injury befalling every 15 million visitors literally, in the context of a smaller shopping precinct or pedestrianised town centre which attracts, say, one million visitors per year, the probability is that there will be one injury-related incident involving a powered wheelchair or scooter user every 15 years. In reality, the probability is likely to be less than this, since smaller shopping centres, with less of a profile for accessibility and modern facilities, almost certainly attract a smaller percentage of powered wheelchair / scooter using shoppers.

By way of comparison, the LASS database (see Sub-section 5.1.) estimated that 58,015 people would have an accident in a shopping area, shopping centre or market in the UK in 2002. No cross-tabulated information is currently available to enable an estimate to be made of how many of these people might be users of a powered wheelchair or scooter.

5.5. Data from Shopmobility

Enquiries to major Shopping Centres and other Town Centre Managers often resulted in respondents referring to incidents involving powered vehicles

loaned out via the local Shopmobility scheme. Whilst the balance of informed opinion received during the course of the research suggested that any incidents that did occur involved people using their own wheelchair, rather than equipment loaned by Shopmobility – this was thought to be because Shopmobility staff had the opportunity to both briefly train people in the use of their wheelchairs, or to refuse to lend them equipment altogether – it was still considered that Shopmobility might represent a valuable source of information.

Whilst it has not been possible to have a meaningful dialogue with the National Federation of Shopmobility UK, insurance claims details have been received from the scheme's insurers. BJK Insurance Brokers administers an insurance scheme for affiliated members of the National federation, and runs a similar scheme on behalf of Shopmobility Scotland; BJK currently insures 170 of the 260 Shopmobility schemes operating. Data have been received on claims details since 1996; there have been 159 claims made for accidental damage (49), public liability (106), and "impact" (4). Figure 5.1 shows the incidence of these claims, from May 1996 to May 2003, whilst Figure 5.2 shows figures for claims made that were associated with personal injury.

Figure 5.1. Shopmobility insurance claims, May 1996 to May 2003

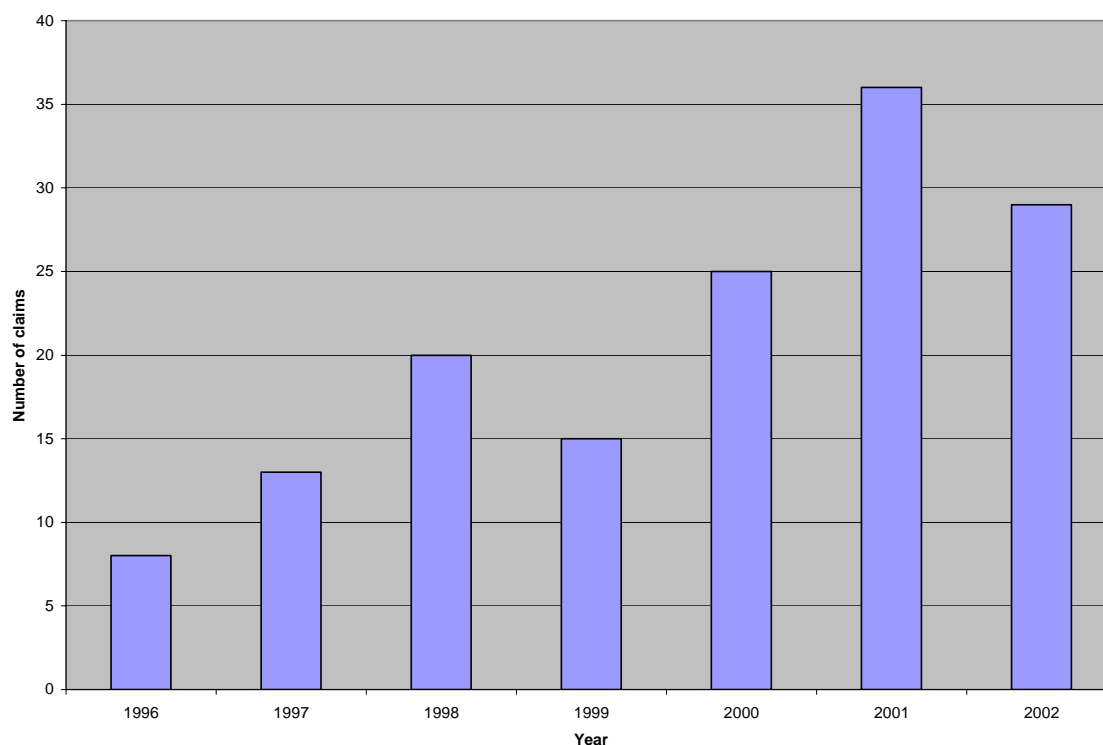


Figure 5.2. Shopmobility insurance claims involving personal injury, 1996 to 2002

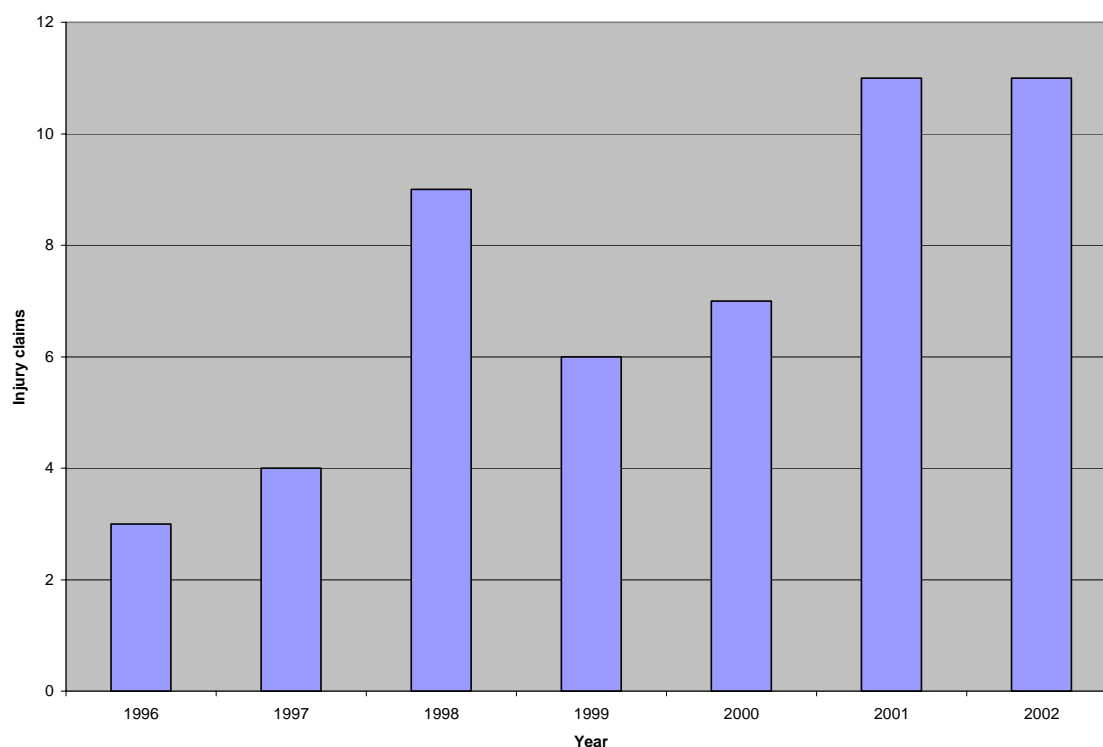


Figure 5.1 certainly appears to show an increase in the number of insurance claims over time, whilst there is also the appearance of a slight increase in the incidence of injuries.

To put these figures into context, the 51 injuries traced through insurance claims in the 85 months covered by the data average 7.2 injuries per year, among the Shopmobility schemes registered with BJK – if this figure is factored up to represent all 260 Shopmobility schemes, then this provides an estimate of 11.01 injury-related claims per year. Similarly, it can be estimated that there will be an average of 34.33 insurance claims per year for Shopmobility as a whole.

The 170 schemes insuring with BJK loan out, between them, an average of 1,410,941 vehicles per year, which produces an estimated average of 2,157,910 loans (a unit which is analogous to a shopping centre visitor) for the whole of the Shopmobility scheme per year. This is equivalent to one insurance claim involving an injury being made per 195,995 loans, with a claim of some sort made as a result of each 62,858 loans. Again, this suggests very small probabilities.

Some data have also been received from individual Shopmobility schemes. Waltham Forest's scheme opened in July 1999, and to date there have been no reported accidents between pedestrians and powered wheelchairs or scooters. However, there have been three reported incidents between

pedestrians and powered scooters. Two of these resulted in medical treatment for the pedestrian (broken wrist and bruising).

The Metro Centre, Newcastle, runs its own scheme, with four machines which are only allowed out once a day and are used every day. The Centre has had one reported incident since April 2000, when a member of staff was returning the vehicle to its post and a collision knocked over a pedestrian resulting in a head injury.

The Shopmobility scheme associated with Plymouth City Centre's pedestrianised area is one of the larger schemes in the UK, comprising 50 Class 2 scooters, 18 powered wheelchairs and 25 manual wheelchairs. In the period from January 2003 to September 2003, over a thousand clients registered with the scheme, resulting in a total of 6,354 scooter loans, 1,306 powered wheelchair loans and 1,693 manual wheelchair loans. During this period, there were five incidents reported involving scooters (two of which resulted in injury to members of the public) and one involving a powered wheelchair (which resulted in an injury to a member of the public). The scheme in Plymouth does not include Class 3 vehicles.

In nearby Exeter it was reported that use of Shopmobility is up to about 15 journeys per day, and that only minor incidents had been reported here.

Torrige CC reported two incidents involving pedestrians and Shopmobility scooters in six years, neither resulting in a claim, as well as three reported minor incidents whereby users had slightly injured themselves, and one other incident involving property damage with no claim made. Our Torrige respondent was keen to state that:

"I would strongly dispute the assumption that incidents are under-reported, as Shopmobility schemes around the country are diligent in training clients on the safe and effective use of wheelchairs and scooters, and maintaining records. Indeed, clients agree that, when they become a member, they will inform the scheme's manager of any incident / accident that has occurred whilst the vehicle is in their care. As members of the National Federation of Shopmobility, we have to agree to provide a Shopmobility service to minimum criteria or run the risk of losing our membership."

Again, these individual schemes appear to have reported a very low frequency of incidents among Shopmobility users, and these are summarised in Table 5.11.

Table 5.11. Summary of incidents reported by individual Shopmobility schemes

Shopmobility scheme	Number of incidents	Reporting period (months)	Incidents per year
Waltham Forest	3	54	0.67
Metro Centre	1	36	0.33
Plymouth	6	9	8.0
Torrige	2	72	0.33

Plymouth Shopmobility displays a much higher frequency of incidents than the other schemes in this table, but this is almost certainly due to the large number of vehicles involved in the scheme. Nevertheless, if information on the number of loans by Plymouth is taken into account, it can be calculated that one incident is reported for every 1,277 loans, which is a far higher predicted ratio than that for Shopmobility as a whole (i.e. 1 in 62,858), as calculated above. It is also a little surprising that Exeter has had no reported incidents of note, since, with an activity level of 15 loans or journeys per day, Exeter would expect to average 4.29 incidents per year, if the probability of a reported incident were the same as for the Plymouth scheme.

5.6. Data from Supermarket Chains

A logical extension of seeking information from shopping precincts was to approach the larger supermarket chains, to establish whether they had experienced any problems with powered wheelchairs or scooters in their shops, or had any data from Health & Safety records etc.. The approach was made to members of the Baywatch scheme, a partnership that addresses the problems caused by non-disabled people parking in spaces reserved for Blue Badge holders – members of this scheme are Asda, Sainsbury's, Safeway and Tesco.

Responses have been received from two of these companies. Whilst Asda replied that they had not experienced any problems with their electric scooters, Sainsbury's reported no fewer than 25 incidents involving wheelchairs of all types since May 2002. In twenty of these, the "victim" was a customer, whilst in the other five it was a member of staff, and our respondent states that most of these incidents have been in the nature of "walk into" or "struck by" accidents.

5.7. Data from Public Transport Environments

Public transport environments, such as railway stations, bus stations and airports were also considered to have potential for conflict between powered wheelchair and scooter users and other members of the public, on the grounds that they tend to be places which have a throughput of a large number of pedestrians, and generally provide level access for powered wheelchair and scooter users.

5.7.1. Railway stations

Network Rail has been responsible for recording Health & Safety incidents that occur at 14 major railway stations since 1993. These stations include Liverpool Street, Victoria, Waterloo, Euston, Manchester Piccadilly, and Glasgow Central, and they have a present combined total of over 650 million visitors per year. There have been no reported accidents involving powered wheelchairs or scooters in this time.

5.7.2. Airports

Contact with the Civil Aviation Authority has established that there are no records of accidents involving powered wheelchairs or scooters. Of the smaller airports approached, so far only Edinburgh Airport has responded, also reporting that no such accidents have been reported.

5.7.3. Bus stations

Again, no records of incidents with powered wheelchair or scooter users have been discovered; the gist of many responses is that, because many buses are unsuitable for powered wheelchair, and certainly scooter, users, they are rarely seen in bus station environments.

Victoria Coach Station was also contacted during the course of enquiries, but no response was received.

5.8. Data from Breakdown Services

Since the Automobile Association (AA) had recently offered a breakdown service for powered wheelchair and scooter users – a service which is in the process of being phased out – this was considered to be another potential source of information. Because of the discontinuation of this service (to all but current members, who will no longer be covered in this way after they next renew their membership), it was not possible for the database that was formerly used for the service to be interrogated. This database formerly consisted of 6,000 powered wheelchair and scooter users (which the AA considers to have represented about 2% of an estimated market of three million users of such vehicles).

A survey of other organisations who might offer, or might have offered, this type of service revealed that none was established elsewhere – indeed, only the RAC has previously offered such cover. There were indications, however, from conversations with those contacted during this part of the analysis, that one or two insurance companies might consider filling the niche in the market left by the AA. In fact, a company called Roadside Rescue initiated such a service on the 1st of January 2004.

5.9. Searches of databases for individual report of incidents

One method of searching for information on incidents involving powered wheelchairs and scooters was to conduct searches of databases relating to Press cuttings, other on-line journalistic sources and Court proceedings.

5.9.1. Databases of Court proceedings

It was considered that an investigation of court reports and proceedings might provide a source of information about more serious accidents involving powered wheelchairs and scooters where legal action had ensued. Investigations commenced with the Senior Listings Officer at Bristol Crown Court who advised that a search for court cases relating to wheelchair accidents would be extremely difficult, since not only are cases filed under the

names of the defendants rather than by vehicle type but also because the case details are not stored in a searchable database. He also pointed out that the Crown Court would only store details on criminal cases, and that wheelchair accidents were unlikely to be of such a serious nature.

Further, any claims settled out of court (for example paid out by insurance companies) are not stored on a court database but held by the insurance companies who also tend to file claims under the policy holder's name. He went on to suggest that we contact County Courts, but felt it likely that civil claims would be filed in the same manner. Some County Courts were duly contacted (including those in Bristol, West Yorkshire and the West Midlands) and it was confirmed that their records are similarly filed according to the defendants name and are not in a searchable database. It was also pointed out that as court proceedings are governed by the Official Secrets Act and the Data Protection Act, they can only be released with consent of all parties.

There was, however, one example found of a fatality of a powered wheelchair user – hit by a third party motorist who was to blame, and was prosecuted. This was the only record of a fatality involving a wheelchair user from a database of 5,943 fatal accident reports between 1988 & 1997. The charge brought against the defendant was one of Causing Death by Dangerous Driving. A man using an electrically powered wheelchair crossed the road at a controlled junction when the light for on-coming traffic was showing green, and a van was unable to avoid him, striking the wheelchair and causing the occupant a serious, and eventually fatal, injury. The Court's verdict was that the defendant was found not guilty of Causing Death by Dangerous Driving, but a plea of Guilty was lodged for the lesser offence of Driving Without Due Care and Attention. The defendant was fined £1,000, with £400 costs, and was disqualified from driving for three years, after which a re-test was to be taken.

5.9.2. Searches of Press cuttings and other internet sources

A general internet search for websites containing relevant information was first conducted using the Google search engine (www.google.com). This provided some useful further leads, but yielded little information directly relating to wheelchair accidents themselves. Other internet sites visited during this search included,

- Ask Jeeves
- Social Exclusion Unit
- DfT
- The Guardian
- The Times
- Office of National Statistics
- Meadowhall Shopping Centre
- Merry Hill Shopping Centre
- Magistrates Courts (various)
- HSE

An on-line search of national and local newspapers was then conducted. Smaller local newspapers were searched using primary keywords, while searches of larger national newspapers that yielded a large number of articles were refined using a combination of primary, secondary and tertiary keywords (see Table 5.12).

Table 5.12. Search keywords

'Primary keyword'	'Secondary keyword'	'Tertiary keyword'
Wheelchair	Powered	Accident
Scooter	Electric	Incident
	Motorised	

The on-line searches commenced with a sample of the national newspapers, including:

- *The Sun*
- *The Mirror*
- *The Guardian*
- *The Daily Mail*
- *The Times*
- *The Telegraph*

The search of national newspapers identified only a small number of reported accidents involving powered wheelchairs and scooters, and these tended to be of a more serious nature. A further search was conducted of smaller local newspapers where it was hoped that there would be a higher degree of reporting of both major and more minor incidents that had not made the national papers.

A directory of local newspaper websites was located at www.holdthefrontpage.co.uk. This directory included 91 newspapers representing most major towns and cities in the UK (see Appendix F).

Once these newspaper sites had been searched, the saved articles were catalogued by the nature of the incident. Four categories were used, as shown in Table 5.13.

Table 5.13. Categories of incident used during search of local newspapers

I.D.	Category	Description
1	Accident	Accident involving wheelchair
2	Robbery / Attack	Robbery of or attack on wheelchair user
3	Theft / Vandalism	Theft of or vandalism on wheelchair
4	Other	Could not be classified, but included obstructions of wheelchairs, racing incidents

		and drink driving.
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The extensive search of local and national newspapers identified just 12 reports of accidents involving mobility vehicles, the majority of these occurring in 2003. Many of the collisions appear to have taken place when the electric wheelchairs have been travelling along the pavement and have come into conflict with pedestrians who have sustained minor to moderate injuries. The situation on the public highway, however, is much more serious for the wheelchair user, with two out of every three incidents involving other road users on the public highway resulting in the fatalities of the wheelchair user.

Incidents found can be summarised as follows,

- Fatal collision with a car on public highway
- Fatal collision with a lorry on public highway
- Collision with a car following brake failure on public highway
- Collision with motorbike public highway Germany
- Collision with a tram
- Collision with pedestrian while wheelchair user operating mobile phone (pavement)
- Collision with pedestrian (pavement)
- Collision with pedestrians - mother and child (pavement)
- Collision with a tree (pavement)
- Fall while attempting to mount raised kerb (public highway)
- Collision with a window cleaners ladder (pavement)
- Collision with a shop window (pavement)

Overall, this search-based approach proved to be a largely unsuccessful means of ascertaining numbers of incidents and injuries, but was rather more successful in gauging attitudes towards powered wheelchair and scooter users and perceptions of the level of risk associated with them. These more qualitative findings are presented in Section 6.

5.10. Conclusions on the number of incidents involving powered wheelchairs and scooters

As with the estimate of the number of powered wheelchairs and scooters in circulation in a previous section, the investigation of the frequency of incidents involving these vehicles in injuries to users and third parties, and in damage to property, has relied on information from a variety of different sources. What makes drawing conclusions more difficult in the case of frequency of incidents is the fact that different sources have provided data on different types of incident, with different severity of consequence implied. For example, it is difficult to compare an injury that is categorised as “slight” on a Police “Stats 19” form, with the type of injury that would encourage a policy holder to make an insurance claim; similarly, it is difficult to judge, generally, how serious an injury might need to be for it to be reported to the management of a shopping precinct, and so on.

In spite of the scarcity of reported incidents, it has been possible to produce some numerical estimates as to the expected frequency of different types of incident. For example, it is estimated that there will be one reported incident involving a powered wheelchair or scooter owner in a major shopping centre, for each 15 million visitors to such a facility. Using similar logic, it is estimated that one insurance claim relating to an injury to an electric vehicle user will be received in connection with a Shopmobility scheme, for each 200,000 users of such a scheme. Both of these estimates reflect very low probabilities of involvement in an incident. Using Police accident statistics in this way provided varied predictions of accident liability, from one injury incident per year for each 88 powered wheelchair or scooter users in Nottinghamshire, to a ratio of one in 617 for users of such vehicles in West Yorkshire.

What is not in doubt, however, is that this type of incident is likely to be heavily under-reported. The number of incidents in different environments that are not reported, some of which might have caused non-trivial injury or damage, as well as the likely plethora of small bumps and scrapes which will never be reported, remain intangible and unquantified. Even information on the most serious type of incident – a fatality – was not readily available, and details of some deaths that were known anecdotally to have occurred remain elusive. Generally, though, fatalities involving powered wheelchair and scooter users are rare events.

6. Qualitative findings on attitudes and perceptions

As mentioned in the previous section, the search of press cuttings and other databases was invaluable in examining how incidents involving powered wheelchair and scooter users are reported, so providing evidence of prevailing attitudes towards powered wheelchairs and scooters, and the perceived risk that they pose. A general tendency in the Press was for incidents to be reported differently, according to whether the wheelchair user were the victim or the culprit. The search of Press cuttings revealed a number of reported incidents, including thefts and assaults, which demonstrate the difference in public opinion when describing wheelchair users who have been the victims of a crime, compared with when wheelchair users have been the perpetrators of an incident. When reporting on the former, many of these articles focused on the vulnerability of the wheelchair user, using phrases such as '*vulnerable member of society*', '*a sickening assault on a wheelchair-bound pensioner*', '*was powerless to defend himself*' etc.. Clearly, when society feels that older or disabled people are being threatened they rally to protect the victims. Such a response should be noted when thinking about measures which may restrict the ability of these groups to use wheelchairs and scooters, and thus limit their mobility.

Evidence from various sources is summarised below, according to the issues that were most often raised in connection with powered wheelchairs and scooters.

6.1. Perceptions of accident liability

Evidence gathered from a variety of Press reports suggests that there is a general feeling that not only is the number of powered wheelchair and scooter users rising ('*sales booming*'), but there has also been a rise in the number of accidents involving these types of vehicles ('*many minor accidents*', '*spate of low speed accidents*', '*many cases of people being injured*', '*accidents on the up*'). Such Press coverage encourages public perception of both an increase in the number of powered mobility aids in circulation and an increase in the likelihood of incidents related to powered wheelchairs and scooters. Some articles suggest that there is a need for the Government to review the legal situation surrounding mobility vehicles while others claim to know that alarm bells are already ringing ('*mounting concern*') and that measures are already under way to review the situation.

There have also been questions raised about where motorised wheelchairs and scooters fit into the transport system. Many consider them too slow for use on busy public roads while too fast and heavy for use along pavements. Some suggest allowing these vehicles to operate along bus and cycle lanes, or even to create an entirely new grade of vehicle route. In terms of measures to improve the safety of drivers travelling along the public highways, some respondents have suggested that drivers of wheelchairs should wear reflective clothing and that mobility vehicles should be equipped with additional lights for use at night, to increase the visibility of these vehicles.

6.2. The issue of third-party insurance and regulatory matters

The Telegraph (10th November 2002) and *The Guardian* (18th December 2002) reported that disabled people with motorised wheelchairs face having to buy third-party insurance following a number of accidents in which pedestrians have been injured and property damaged. *The Telegraph* reported that Ministers have confirmed that they are planning to make insurance compulsory for the 145,000 people who currently drive electric wheelchairs or similar vehicles. In *The Telegraph* David Kidney MP for Stafford who raised the issue said:

"I've been getting lots of complaints from my constituents about this. It's a real problem. A driver of a car was injured because he had to swerve to avoid an electric wheelchair user."

In *The Guardian* article David Kidney MP said he raised the matter with Ministers after a 70-year-old constituent he describes as a 'frail old lady' asked his advice about an incident involving her buggy. He said:

"She was terrified when a motorist threatened to sue her for buckling a wheel of his car. She had no insurance and eventually the matter was dropped. Technically, these things make it possible for people to stay mobile longer, but there should be a feel-safe factor."

This issue was actually the subject of a Parliamentary debate, brought about by Mr Kidney; a record of this debate appears in Appendix G.

The newspaper articles both report that the proposal is being opposed by disability rights groups, which say the extra cost could restrict many people's mobility. In *The Guardian* article, Paul Smith, the Director of The Spinal Injuries Association, which is a charity with 5,000 members who are predominantly wheelchair users said:

"The cost of living an independent life is already extremely high for many wheelchair users. This will be an additional burden. Will the health services who provide powered chairs also provide insurance cover? If not, and compulsory insurance goes through, then there should be an increase in the mobility component of the disability living allowance".

In *The Telegraph* David Holding, of the Disabled Drivers' Motor Club, said:

"This seems over the top and discriminatory. I'm a wheelchair user; a cyclist would travel at a faster speed than an electric chair."

Whilst Andrea Lane, of Help the Aged, said:

"Not only is it discriminatory, it is also very expensive."

In *The Guardian*, Trevor Gross, a partner at En Route, an insurance broker offering insurance for powered wheelchair and scooter users, who has used a wheelchair for 21 years, thinks claims will escalate. He said:

"Years ago, if I accidentally ran over someone's foot, I'd apologise and they'd say: 'Don't worry about it.' Nowadays, everyone is looking for compensation."

Compulsory insurance is generally portrayed in a negative fashion, the high potential cost is noted as a particular concern (*'as people get over the age of 70, there's a reluctance to insure them on any vehicle'*), with some suggestion that the disabled living allowance should be increased to cover the additional cost incurred.

Others argue that compulsory insurance would simply lead to a rise in the number of claims being made. For some organisations representing disabled people, the introduction of any type of criteria, assessment or health requirement is simply seen as creating unnecessary barriers to people's mobility. And thus it would appear that a careful balance is required that will safeguard the welfare of pedestrians and other road users, without having a detrimental impact on the mobility of disabled people.

As for attitudes within the insurance industry, there was a general perception among insurers was that there is an element of unscrupulous dealers within the industry, whose sole motive was to sell mobility aids, regardless of their suitability for buyers – this was thought to be currently the biggest problem within the sector. It was felt that a substantial proportion of powered wheelchair and scooter sales staff lack the skills to properly carry out an assessment of users' requirements, even if this were a priority for them. However, it was acknowledged that, even if some agents and distributors were "ripping off" customers, at least they were providing disabled people with a means of mobility, which might not be available to them if attractive profits were not there to encourage people to enter the industry. In other words, there was a sense of realism, in that some mobility products might not be as readily available if dealers had less incentive for entering the market.

Interestingly, the opinion was expressed that, on balance, existing insurers of powered wheelchairs and scooters might not welcome the idea of compulsory third-party insurance – this is because the few companies currently offering policies would lose their position in what is effectively a niche market, since the expansion of this sector of the insurance market would encourage new entrants, and increased levels of competition.

Concerns were expressed by some respondents that powered wheelchairs and scooters are generally inadequately covered by legislation and regulations, tending to "fall between cracks". For example, scooters and powered wheelchairs are not defined in law as motor vehicles and therefore not only is the user not required to hold a licence or a certificate of insurance, but they are also exempt from other road traffic legislation, such as that relating to the use of mobile phones when driving and the consumption of alcohol.

On the subject of the latter, some groups representing disabled people are calling for the law to be clearer after a disabled man was found not guilty of drink-driving, after magistrates ruled that the electric vehicle he was driving

was exempt from the drink-drive laws even though his breath alcohol was nearly twice the legal alcohol limit, and he was “weaving dangerously” across the pavement. Nor are any physical tests of the driver carried out to ensure their fitness to operate a mobility vehicle; even an eye-test is not required by law. Often decisions about the purchasers' fitness to drive are simply the responsibility of a sales person, who may experience a conflict of interest when faced with making the decision about whether or not to sell a mobility vehicle to a prospective buyer.

6.3. Issues connected with testing and training

The absence of any training provision when purchasing a mobility vehicle can lead to the simplest manoeuvres being conducted in an inappropriate and dangerous fashion, either because the manoeuvre is beyond the capabilities of the vehicle or because the driver is not undertaking the manoeuvre in the most appropriate manner. There have, for example, been reports of wheelchairs toppling over and injuring drivers who have attempted to climb raised kerbs – tipping accidents have certainly been found to be well represented in the accident statistics that have been gathered (see previous sub-sections), and this had led to calls for training to protect drivers from themselves as well as other road users and pedestrians.

While on the one hand there appears to be a considerable concern about the increasing number of accidents involving mobility vehicles, and the need for some action to be taken, there are also concerns about the impact of introducing new tests and requirements on the mobility of older and disabled citizens. As one shop-keeper, who had recently had his shop window shattered by an older woman driving a buggy, said: *‘I realise they’d be housebound without them, and I hate to see more legislation, but you have to safeguard the innocent’.*

Among consultees within the powered wheelchair and scooter insurance industry, it was anticipated that, if regulations on fitness to use powered wheelchairs and scooters were tightened up, then this would cause many disabled people to have their mobility levels substantially reduced, and that this might also cause something of a back-lash among disability activists.

There have also been reports that the issue of *‘conflict between different groups of road users’* has been raised in the House of Commons. Notably, MP David Kidney has been reported to be calling for the Government to *‘consider testing people’s ability to drive safely before allowing them to take control of a motorised wheelchair’.*

7. SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

7.1. Summary of findings

The review of legislation, reported in Section 2, confirmed that there is little legislation in the UK regarding issues such as fitness to drive, insurance obligations, and taxation in relation to powered wheelchairs and scooters. Mobility equipment referred to as an “invalid carriage” in legislation is not considered, by law, to be a motor vehicle, so is exempt from many road traffic regulations. Class 3 vehicles when used on the road, however, are obliged to conform to many regulations affecting motor vehicles. The review has demonstrated that the situation is not very different in many other European countries, where there is little legislation concerning this type of vehicle. In some countries, powered wheelchairs and scooters are largely given the status of bicycles, whilst in others powered wheelchair and scooter users are permitted to travel as pedestrians (subject to specified speed restrictions, in both cases). Generally, there is neither mandatory training for use of a powered mobility aid, nor a tax on use or ownership of such a vehicle, but there does tend to be some requirement or expectation for insurance of some kind elsewhere in Europe. In the Netherlands, for example, third-party insurance is a minimum requirement.

The consensus of opinion among people in the industry consulted during the course of the research is that there has been a recent “boom” in the supply of powered wheelchairs and scooters in the UK. Official figures on the manufacture of invalid carriages, compiled by the Office of National Statistics, and import and export data supplied by H.M. Customs and Excise, appear to support this view, with imports from non-EC countries (mainly the USA) being the main contributor to the increase in the number of such vehicles in this country. Unfortunately, doubts about the accuracy of the specific data source used have not yet been resolved, so a firm conclusion on this issue cannot be made at this stage.

Nevertheless, what is very clear is that the number of powered wheelchairs and scooters in use in the UK is expected to increase substantially in the near future. This is partly due to continuing trends of an ageing population and the increasing centralisation of retail facilities in fewer, bigger – but accessible – outlets, but there is plenty of anecdotal evidence that powered mobility aids are beginning to open up new markets.

The estimate of approximately 100,000 powered wheelchair and scooter users, in the UK, made on the basis of OPCS data on the percentage of disabled people and wheelchair users in the population, and 2001 Census data, is offered as a good working estimate. This is because, unlike some of the data used during the course of the research, it refers to powered wheelchair and scooter users as a whole, and not to a particular type or class

of wheelchair. It is acknowledged, however, that this estimate might err on the side of being conservative.

In terms of the different types of powered vehicle in use, it appears that it is mobility scooters, particularly the Class 2 variety, that are leading the overall increase in numbers. Generally, sales of scooters currently exceed sales of powered wheelchairs on a ratio of 80:20; the market for scooters in the UK is estimated to be 25,000 per year.

One finding from the questionnaire survey on the usage of powered wheelchairs and scooters in the UK was that over half of the respondents stated that they had undergone a full assessment of their needs before purchasing their powered vehicle, and that the administering of training and/or a needs assessment was increasingly likely to have taken place the more recently the vehicle had been purchased. This suggests that standards of service in the industry are improving. There were also few respondents who thought that the powered wheelchair or scooter that they used was “too fast”, which suggests that vehicles sold are generally appropriate for the buyer’s needs.

Responses on usage reveal that powered wheelchairs and scooters are commonly used in all types of environment, but the most common modes of usage were on pavements, and also for crossing the road. Arguably the most surprising finding was that 18.5% of respondents said that they used their Class 2 vehicle on the road “every day”.

A major conclusion from the review of the frequency of accidents involving powered wheelchair and scooter users is that this type of incident is likely to be heavily under-reported. The number of incidents causing injury in different environments that are not reported, as well as the likely plethora of small bumps and scrapes which will never be reported, remain an intangible and unquantified element. Nevertheless, it has been possible to produce some numerical estimates as to the expected frequency of different types of incident. For example, it is estimated that there will be one reported incident involving a powered wheelchair or scooter owner in a major shopping centre, for each 15 million visitors to such a facility. Using similar logic, it is estimated that one insurance claim relating to an injury to an electric vehicle user will be received in connection with a Shopmobility scheme, for each 200,000 users of such a scheme. Both of these estimates reflect very low probabilities of involvement in an incident. Using Police accident statistics in this way provided varied predictions of accident liability, from one injury incident per year for each 88 powered wheelchair or scooter users in Nottinghamshire, to a ratio of one in 617 for users of such vehicles in West Yorkshire.

Informal contacts with many of the people and organisations that contributed advice or data to the project raised some important issues and trade-offs, all of which should be considered during Stage 2 of this research. One of the important trade-offs discussed was the importance of disabled people being granted the freedom to use a powered mobility aid without restriction, regulation or financial disincentive, against the need for other members of the

public, mostly pedestrians, to be protected from potential injury. A similar dilemma highlighted was that of how to deal with what was perceived by some in the industry to be “rogue” dealers and distributors who allegedly pay little attention to the assessment of their customers’ needs – the counter argument is that the presence of such an element in the market, if it exists, actually performs a role in providing mobility opportunities for disabled people, opportunities that might be lost if the industry were to become more tightly regulated.

7.2. Conclusions and recommendations

A major conclusions from the study are that the number of powered wheelchairs and scooters in use in the UK is increasing, and that, whilst the number of reported incidents involving these vehicles is relatively small, there is a strong suspicion that such incidents are under-reported. The use of powered mobility aids will certainly become an important issue in the near future, due to the continued ageing of the population, the opening of new markets for such products to include people who do not necessarily consider themselves as being disabled and the increasing litigiousness of modern society.

The recommendations from the study are that,

1. The research should progress to Stage 2, the stakeholder consultation stage, so that issues around regulatory requirements can be discussed in more detail.
2. There should be the opportunity, during Stage 2, for further analysis of some of the data sources reported on in this document; this might include further investigation of data held on the LASS database, and clarification of the integrity of manufacturing, import and export data already used.

Appendix A

Summary of Medical Devices Agency Safety Notices, 1999 – April 2004

1999

Six of the 41 safety notices relate to powered wheelchairs or scooters. Details are as follows,

SN 1999(14) Phoenix powered wheelchairs, detachable pram handle

SN 1999(15) Electrically powered wheelchairs and scooters

SN 1999(33) Wheelchairs, seating and accessories – inspection, maintenance and repair procedures. – This safety notice has come about as a result of problems involving reports of incidents and injuries arising from the failure of service providers to establish records for the purposes of inspection, maintenance and repair procedures for wheelchairs, seating and accessories. The intended action of the safety notice is to ensure that a formal system of maintenance is established for all equipment to ensure that regular inspections and routine servicing are carried out on a planned basis taking account of the specific requirements of the manufacturer.

SN 1999(34) Wheelchairs seating and wheelchair accessories – inappropriate use: - The problem identified that led to the creation of this safety notice has been the failure to follow manufacturers' instructions, possibly as the result of a lack of instructions, which has resulted in injuries to wheelchair users. The 'action' required suggests that healthcare staff responsible for the prescription of wheelchairs and seating accessories should ensure that the manufacturers guidelines have been fully considered in the prescription process.

SN 1999(35) Safety of wheelchair passengers in vehicles. The MDA has been continually receiving reports of serious injuries or fatalities sustained by occupants of wheelchairs being transported in road vehicles. The recommended action is that those responsible for the provision of wheelchairs should ensure that users are aware of special equipment that can be used in the vehicle. Other equipment not included as part of a restraint system should be clearly labelled so as to draw attention to the limitations of it.

SN 1999(37) Unwin wheelchair headrest – risk of detachment. The headrest is designed to be attached to the wheelchair push handles over the existing handgrips. Incidents have been reported whereby the handgrips become damaged by the headrest clamp screw allowing the headrest to detach. The necessary action is to verify that the headrest is securely mounted and handgrips are not damaged. A manufacturer supplied modification kit should be obtained and supplied to all units on issue.

2000

During 2000, there were a total of 28 new safety warnings, of which five related to powered wheelchairs.

SN 2000(20) - Lomax Mobility - Vitesse 3 HD (Heavy Duty) & XHD (Extra Heavy Duty) Powered Wheelchairs. - Users have been injured as a result of

castor stems failing in service. Failure can occur without warning and can cause the wheelchair to tip over, ejecting the occupant.

DA 2000(04) - Scandinavian Mobility Powered Wheelchairs: Overheating of the charger/controller connection.

HM 2000(13) - Battery Chargers branded as CMP 2000, Lomax or Sunrise - Models 24V 4A, 24V 6A, 24V 7A, 12V 6A.

SN 2000(08) - Bohle Side Panels for Wheelchair Armrests (Skirtguards) - Reduced Fire Retardancy – The problem is that a large number of plastic side panels for wheelchair armrests (skirtguards) supplied to repair and reconditioning services do not meet Bohle UK Ltd's specification in terms of fire retardancy. The suggested action is to have all the side panels replaced by new side panels.

2001

Two of 35 safety warnings related to powered wheelchairs.

SN 2001(31) - Invacare Powered Wheelchairs. Risk of Drive Wheels Becoming Detached from Wheelchair During Use. - This notice applies to the following Invacare models: Cruiser, Harrier HD, Harrier Plus, Harrier Special, Home and Away, Home and Away Special, Phoenix Plus, Spectra Plus and Spectra Special Powered Wheelchairs. The necessary action required is to identify any powered wheelchairs from the above which have been supplied since 1 June 2001 and ensure that rectification action is carried out in accordance with the manufacturer's instructions.

SN2001(24) - Battery Chargers with Faulty 13A Plugs, Branded as Sonnenschein, Lomax or Sunrise

Problem: The problem has arisen from a batch of 13A plugs fitted to CMP battery chargers, supplied between 1st January 2001 and the end of June 2001, have been found to have the potential to split apart exposing the bare terminals.

CMP have identified a batch of 13A plugs fitted to CMP battery chargers that have the potential to split apart when being removed from the mains socket exposing the user to the main terminals. The problem has arisen due to a manufacturing failure in the welding process on a batch of these plugs.

2002

Two of 35 safety warnings were to do with powered wheelchairs.

HN 2002(08) - Invacare Ltd - Storm3 powered wheelchair - risk of drive wheel becoming detached

SN 2002(18) - Scandinavian Mobility, Popular Plus Powered Wheelchair - risk of overheating or possible fire in the battery cables and connector plugs. The MDA has received many cases of battery cables and boxes overheating. On

one occasion, a small fire was observed in a connector. An initial investigation revealed that the connectors had not been refitted correctly when the wheelchairs were reassembled. Action put forward was to trace (and recall?) all Scandinavian Mobility Popular Plus powered wheelchairs and arrange for the wiring and connectors to be checked and replaced where necessary.

2003

Three of 46 safety warnings related to powered wheelchairs.

MDA/2003/031 - Ulti-Mate and Essential wheelchair seat cushions manufactured by Invacare

MDA/2003/040 - 'Personal Seat' wheelchair seat cushion manufactured by Invacare – Originally test for flame resistance under California Standard TB 117. However, recent tests show that the cushions will not self extinguish when exposed to an open flame, as specified under the match flame equivalent tests ISO 7176-16. The manufacturer had devised a solution for cushions already supplied, to reduce the risk. Invacare will supply the modification kit and reimburse existing customers. Supplies for the cushion are suspended awaiting an update before amended production is assumed, incorporating a K1 interliner and outer cover.

MDA/2003/013 - Infinity pressure relieving wheelchair seat cushions. Manufactured by Invacare Limited – These cushions have a lower resistance to ignition than originally intended by the manufacturer. Again the cushion may not self extinguish if exposed to an open flame. As with MDA/2003/040, products sold since March 2000 need recalling or tracing, and need supplying with a K1 flame resistant interliner, to fit between the inner and outer liner of the cushions.

2004

So far, during 2004, there have been 14 safety warnings, none of which relate to powered wheelchairs or scooters.

Appendix B

**Letter / Questionnaire used for
Survey of the Legislative
Situation in ECMT Countries**

Dear _____,

Re: Review of powered wheelchairs and powered scooters

We are carrying out a review of powered wheelchairs and powered scooters for the Department for Transport's Mobility and Inclusion Unit (Ann Frye).

In common with many other countries, the number of powered wheelchairs and scooters has increased very considerably in recent years in the UK. Clearly this is of great benefit to the mobility of many disabled people, but there are a number of concerns.

Statistics on the number and use of powered wheelchairs and scooters are not comprehensive, but anecdotal evidence in the UK suggests that the number of accidents involving these vehicles is increasing. This raises questions on whether there should be a requirement for users to be given training in how to use their vehicles and whether they should have insurance – only a minority have insurance at present.

There are also questions relating to the legislation and regulations that apply to powered wheelchairs and scooters. In the UK, the primary legislation is now more than 30 years old, though there have been some later Regulations. The vehicles themselves are defined as either Class 2 or Class 3. Class 2 are powered wheelchairs and powered scooters that are limited to a top speed of 4 mph (6.436 kph) and can be used on the pavement or footway. They can also be used on the road (carriageway) but only to cross a road, pavement-to-pavement, or along the road where there is no pavement. Class 3, also powered wheelchairs and scooters, are limited to a top speed of 8 mph (12.872 kph). They are for use on the road and can only be used on the pavement if their top speed is reduced down to 4 mph (6.436 kph).

There are further regulations which specify a maximum weight for these vehicles, adequate lighting if they are used on roads in the dark etc.

It would be very helpful if you could provide some information about powered wheelchairs and powered scooters in your country. Specifically:

1. Are there any regulations or legislation in your country that control the design and/or construction of these vehicles? Examples might be specifying a maximum weight, maximum dimensions, type of power unit used, maximum age of vehicle, lighting, etc.
2. Are these vehicles classified in any way, for example as they are in the UK by maximum permitted speed? (If so please say what the classes are)
3. What are the regulations that affect the use of these vehicles? For example limiting use to pavements only, minimum age of person who can drive one of these vehicles.
4. Are there any mandatory requirements for these vehicles to be insured?
5. Are there any training programmes for the users of these vehicles, voluntary or mandatory?

6. Do any of these vehicles require a road tax (i.e. payment for a licence to use the vehicle on the road)
7. Do you have any data on the number of these vehicles in use in your country and/or the number of vehicles sold each year?
8. Do you have any data on numbers of accidents involving these vehicles?

Finally, if you know of any research being done on this topic in your country, it would be very helpful if you could give us a contact within the researchers.

If possible, we would like to receive any information you supply by the end of October. Please send this information to me at the following address,

Madeira Villa
11 Madeira Road
VENTNOR
Isle of Wight
UK
PO38 1QP

Alternatively, you may fax me on +44 (0)1983 857196, or our Lichfield Office on +44 (0)1543 416681

Thank you very much for your help. If you have any questions about this work, please contact me – Philip Oxley (email: p.r.oxley@ventnortowers.com; tel: +44 (0)1983 853445) or my colleague Phil Barham (email: philip.barham@ttr-ltd.com; tel: +44 (0)1543 416416).

Yours faithfully,

Philip Oxley OBE
Special Adviser
Transport & Travel Research Ltd

Appendix C

BHTA Membership List

Mobility Vehicle Manufacturers and Distributors

MOBILITY VEHICLES (DISTRIBUTORS) SECTION

A M Mobility	FMS of Ruislip Ltd
AB&R Disability Services Ltd	GBL Wheelchair Services
Abbey Mobility	Gerald Simonds Healthcare Ltd
Abbey Mobility Services	Get Up And Go Ltd
Accessibility	The Health Care Centre
Active Mobility Centre	The Helpful Hand
Active Mobility Vehicles Ltd	Hereford Mobility Centre
Aides to Living	HLC – Sheffield Mobility Shop
Allardyce Healthcare Ltd	Howden Hall Mobility
All Handling (Movability) Ltd	Hunters Mobility Services
Altonaids Mobility	ICR Mobility
Andrew Parnaby Mobility Services	Independently Yours Ltd
Ashdown Mobility Ltd	Industrial Services Group
Bartram Associates Ltd	Island Mobility
Batricar Independent Mobility Ltd	Keep Able Ltd
Batricar Mobility Centre Ltd	G Keep (Wheelchair Repairs) Ltd
BeeJay Mobility Services (North)	Kent Mobility Ltd
BeeJay Mobility Services (South)	Key Mobility
Birchington & Canterbury Mobility Centres	Kings Lynn Mobility Centre
Body's Surgical Care Centre Ltd	Lakesway Mobility
Boothferry Mobility Ltd	M & C Mobility
Bromakin Wheelchairs	Maple Mobility DGT Ltd
Brookwood Mobility	Millercare Ltd
Buckingham Engineering Company	The Mobility Aids Centre
Calandine Mobility & Service Centre	Mobility Care UK Ltd
Cambridge Mobility	Mobility Conversions
Cantre Mobility	Mobility Link
Capitol Mobility Services Ltd	Mobility Services Plus
Care & Mobility Ltd	Mobility Showcase
Care-Ability Ltd	Mr Value (Mobility)
Care Centres Ltd	W Munro (Rehab) Ltd
CareTech UK Ltd	Neves Mobility Services
Castlekeys Mobility	The North East Mobility Warehouse
Charterwood Mobility	North West Disabled Care
Chester Mobility Ltd	Optimum Mobility
Cinque Ports Mobility Limited	Rapley & Co
Clark & Partners Ltd	Romford Care Centre
Clarks Independence Centre	Ross Care Centres
Classic Mobility	Seth & Sons Mobility Ltd
Cosham Mobility (All Mobility Aids Ltd)	Shepherds Mobility
Cue & Jones Ltd	Snowdrop Care & Mobility
Disability Equipment Services	Somerset County Enterprises
Disabled Care & Mobility	Sun Mobility
Easi-Way Mobility Centre	TPG DisableAids
East Anglian Mobility Ltd	Tremorvah Industries
East Midlands Mobility Centre	UK Mobility Services Ltd
	Upton Mobility Vehicles Ltd
	Wenman Mobility

East Sussex Mobility Ltd
Eden Mobility
Equipment For The Physically
Challenged
Fifty-Plus Mobility Ltd
Five Towns Care Centre
Fleinn's Medicare

Wessex Mobility Services Ltd
The Wheelchair Centre Ltd
Woodcock Mobility

MOBILITY VEHICLES (MANUFACTURERS) SECTION

Aldersley Battery Chairs Ltd
Balder (UK) Limited
Beamer Limited
Cyclone Mobility & Fitness Ltd
Days Medical Aids Ltd
Electric Mobility Euro Ltd
E V Technology Ltd
Gerald Simonds Healthcare Ltd
Independence Technology (Europe) Ltd
Invacare Ltd
Karma Mobility Limited
Lakesway Mobility
Lomax Mobility Ltd
Mangar International Limited
MovingPeople.Net
Newton Products Ltd
Otto Bock Healthcare PLC
Pride Mobility Products Ltd
Q'Straint
Rainbow Rehab
R G K Wheelchairs
Roma Medical
Ross Care Centres
Sidhil Limited
Sunrise Medical Ltd
TGA Electric Leisure Ltd

Appendix D

Wheelchair User Survey

Questionnaire

THE USE OF POWERED WHEELCHAIRS AND SCOOTERS IN THE UK

As part of a wider consultation exercise, the Department for Transport has commissioned Transport & Travel Research Ltd to carry out research into the use of powered wheelchairs and scooters in the UK. To help us with this, we would be grateful if you could fill in this short questionnaire and return it in the pre-paid envelope provided. You will not need a stamp for this envelope. If you have any queries about the questionnaire, or about the research in general, please telephone Phil Barham (TTR) on 01543 416416.

1. What type of powered wheelchair or scooter do you use ?
.....
.....

2. How many wheels does it have ? *(please tick)* **Three** **Four**

3. Did you acquire the wheelchair new, or second hand ?

 New **Second Hand**

4. Who supplied you with the wheelchair ? *(Name of company / organisation):*
When did you purchase it ? *(An approximate date will be sufficient):*

5. To what extent did this supplier give advice and/or make an assessment of the suitability of the wheelchair for your needs ? *(Please tick the box that most closely describes your experiences).*

 A full assessment was carried out
 There was no formal assessment, but I was given plenty of advice
 Only a little advice and support was given
 No advice or assessment at all was received (N.B. Tick this box if you only received a user's manual)

Were you able to try out the wheelchair in the area you would be using it, before buying it ?

Yes **No**

Have you formerly been a car driver, but now no longer drive ?

Yes **No**

If you answered "Yes" to Qu. 7, why did you give up driving ?
.....
.....
.....

9. We are very interested in where you use your wheelchair, and how often. How often do you use your own wheelchair in the following places? *(Please tick the answer which applies to you.)*

	Every day	Most weeks	Occasionally <i>(once or twice a month)</i>	Infrequently <i>(less than once a month)</i>	Never
in the home					
on the pavement					
when crossing the road					
actually on the road					
in shops and supermarkets					
in shopping precincts and pedestrian only areas					
on cycle paths or shared pathways for pedestrians and cyclists					
"off the road", where there are no pavements					

10. What is the top speed at which your wheelchair can travel ?

.....

11. Do you think that this top speed is, *(Please tick the box that most closely describes your opinion,*

- Too fast
- Too slow
- About right

This questionnaire is part of a wider consultation exercise. Would you be prepared to help us further with this research by responding to a more detailed questionnaire, either by mail or over the telephone ?

Yes No

s, please state your name, address and contact details below – it would also be useful for us if you could also indicate your age and sex.

Name:

Address:

.....

.....

.....

Email:

Age:

Sex: Male Female

Appendix E

**Figures Obtained on Scooters,
Wheelchairs and Similar
Vehicles, from the Health &
Safety Executive**

Injuries to workers and members of the public where the agent of injury was a scooter, wheelchair or other people carrier, as reported to all enforcing authorities (See Request Supplement) 2001/02

Identified by agent codes: Scooter:07.46; Other vehicles for carrying people:07.47; Wheelchair: 06.02

Agent	Kind	Injuries			
		Fatal	Major	Over 3 day	Total
Scooter	Hit by object(s) free falling from lifting machinery, vehicles and other equipment.	-	-	1	1
	Hit by a moving, flying or falling object - unknown way	-	-	1	1
	Hit by a vehicle moving forward,	-	-	1	1
	Hit by a moving vehicle - unknown way	-	1	-	1
	Hit something fixed or stationary in another way not specified above.	-	1	-	1
	Injury through lifting or putting down loads	-	-	2	2
	Injured while handling, lifting or carrying in another way	-	1	2	3
	Tripped over obstruction (furniture, small items, etc.)	-	1	-	1
	Fall from a height, up to and including 2 metres	-	-	1	1
	Fall from a height - unspecified distance	-	1	-	1
	Other known kind of accident not listed above	-	-	2	2
Scooter	Total	-	5	10	15

Other vehicles for carrying people	Hit by object(s) free falling from lifting machinery, vehicles and other equipment.	-	-	3	3
	Hit by a moving, flying or falling object in another way not specified	-	1	7	8
	Hit by a moving, flying or falling object - unknown way	-	1	-	1
	Hit by a vehicle moving forward	-	13	29	42
	Hit by a reversing vehicle	-	6	9	15
	Overturning vehicle where overturn is injury causing factor	-	-	1	1
	Hit by a runaway vehicle not driven	-	-	2	2
	Hit by a moving vehicle - unknown way	-	3	17	20
	Walk into or strike (arm etc) against structure, machinery,	-	3	3	6
	Hit against part of vehicle whilst travelling in it	-	3	8	11
	Hit something fixed or stationary in another way not specified above.	-	1	3	4
	Injured through cuts from sharp/coarse material or equipment	-	1	3	4
	Injury through sprains/strains from body movement	-	-	4	4
	Injury through lifting or putting down loads	-	-	2	2
	Injury through pushing/pulling loads	-	-	4	4
	Injured while handling, lifting or carrying in other way not specified	-	-	7	7
	Slipped, tripped or fell on the same level in another way not specified	-	5	3	8
	Slipped, tripped or fell on the same level - unknown way	-	1	-	1
	Fall from a height, over 2 metres	-	1	-	1
	Fall from a height, up to and including 2 metres	-	5	6	11
	Fall from a height - unspecified distance	-	9	4	13
Trapped by something collapsing or overturning	-	1	3	4	
Exposed to harmful substance in another way	-	-	1	1	
Other known kind of accident not listed above	-	16	26	42	
Oth people carrying	Total	-	70	145	215

Wheelchair, air, patient trolley	Contact with moving machinery or material being machined	-	-	2	2
	Accidentally hit by another person eg hit by another person	-	1	-	1
	Hit by a moving, flying or falling object in other way not specified	1	12	35	48
	Hit by a moving, flying or falling object - unknown way	-	1	3	4
	Hit by a vehicle moving forward	-	-	6	6
	Hit by a reversing vehicle	-	-	1	1
	Hit by a moving vehicle - unknown way	-	-	1	1
	Walk into or strike against structure, machinery, etc	-	8	15	23
	Hit something fixed or stationary in other way not specified	-	5	4	9
	Injured through cuts from sharp/coarse material or equipment	-	1	9	10
	Injury through sprains/strains from body movement	-	-	7	7
	Injured while manually handling or supporting a person	-	2	8	10
	Injured while handling/transferring person	-	-	49	49
	Injury through lifting or putting down loads	-	-	30	30
	Injury through pushing/pulling loads	-	-	80	80
	Injury through carrying loads	-	-	6	6
	Injured while handling, lifting or carrying in other way not specified	-	3	45	48
	Injured while handling, lifting or carrying - unknown way	-	1	5	6
	Tripped over obstruction	-	10	15	25
	Slipped, tripped or fell on the same level in other way not spec	-	11	4	15
	Slipped, tripped or fell on the same level - unknown way	-	2	-	2
	Fall from a height, up to and including 2 metres	-	4	1	5
	Fall from a height - unspecified distance	-	20	1	21
Trapped by something collapsing or overturning	-	1	2	3	
Other known kind of accident not listed above	-	10	7	17	
Wheelchair	Total	1	92	336	429

Injuries to workers and members of the public where the agent of injury was a scooter, wheelchair or other people carrier, as reported to all enforcing authorities (See Request Supplement) 2002/03 provisional

Identified by agent codes: Scooter:07.46; Other vehicles for carrying people:07.47; Wheelchair: 06.02

Agent	Kind	Injuries			
		Fatal	Major	Over 3 day	Total
Scooter	Hit by a moving, flying or falling object in another way not specified above.	-	1	-	1
	Hit by a vehicle moving forward.	-	1	2	3
	Overturning vehicle where overturn is injury causing factor.	-	1	-	1
	Hit against part of vehicle whilst travelling in it.	-	-	1	1
	Injury through sprains/strains from body movement	-	-	1	1
	Injury through lifting or putting down loads.	-	1	2	3
	Slipped, tripped or fell on the same level in other way not specified above.	-	1	1	2
	Fall from a height - unspecified distance.	-	2	1	3
	Other known kind of accident not listed above.	-	5	5	10
Scooter	Total	-	12	13	25

Other vehicles for carrying people	Contact with moving machinery or material being machined.	-	-	1	1
	Hit by object(s) free falling from lifting machinery, vehicles and other equipment.	-	1	1	2
	Hit by a moving, flying or falling object in another way not specified above.	-	1	2	3
	Hit by a vehicle moving forward.	-	12	32	44
	Hit by a reversing vehicle.	-	2	9	11
	Overturning vehicle where overturn is injury causing factor.	-	2	-	2
	Hit by a runaway vehicle not driven	-	1	1	2
	Hit by a moving vehicle - unknown way.	-	-	6	6
	Walk into or strike against structure, machinery, stored goods etc.	-	1	3	4
	Hit against part of vehicle whilst travelling in it.	-	5	10	15
	Hit something fixed or stationary in another way not specified above.	-	-	1	1
	Injured through cuts from sharp/coarse material or equipment	-	-	1	1
	Injury through sprains/strains from body movement	-	-	2	2
	Injury through lifting or putting down loads.	-	-	1	1
	Injury through pushing/pulling loads.	-	-	8	8
	Injury through carrying loads.	-	-	1	1
	Injured while handling, lifting or carrying in another way	-	1	2	3
	Tripped over obstruction (furniture, small items, etc).	-	-	1	1
	Tripped over uneven floor surface	-	-	1	1
	Slipped, tripped or fell on the same level in other way not specified above.	-	2	3	5
	Fall from a height, upto and including 2 metres.	-	3	1	4
Fall from a height - unspecified distance.	-	3	2	5	
Exposed to hot/cold objects/liquids/material (scalds).	-	-	1	1	
Exposed to fire or fumes from uncontrolled fire.	-	-	1	1	
Other known kind of accident not listed above.	-	8	14	22	
Oth people-carrying	Total	-	42	105	147

Wheelchair, patient trolley	Contact with moving machinery or material being machined.	-	-	2	2
	Hit by object(s) free falling from lifting machinery, vehicles and other equipment.	-	2	3	5
	Hit by material under pressure during normal operation of equipment	-	-	1	1
	Accidentally hit by another person e.g. hit by person who fell onto them.	-	-	2	2
	Hit by a moving, flying or falling object in another way not specified above.	-	7	30	37
	Hit by a moving, flying or falling object - unknown way.	-	1	-	1
	Hit by a vehicle moving forward.	-	3	4	7
	Hit by a reversing vehicle.	-	2	4	6
	Hit by a moving vehicle - unknown way.	-	-	1	1
	Walk into or strike against structure, machinery, stored goods etc.	-	10	11	21
	Hit something fixed or stationary in another way not specified above.	-	1	1	2
	Injured through cuts from sharp/coarse material or equipment	-	3	5	8
	Injury through sprains/strains from body movement	-	1	2	3
	Injured while manually handling or supporting a person.	-	1	5	6
	Injured while handling/transferring a person using people handling equipment.	-	1	53	54
	Injury through lifting or putting down loads.	-	1	40	41
	Injury through pushing/pulling loads.	-	3	97	100
	Injury through carrying loads.	-	-	5	5
	Injured while handling, lifting or carrying in another way	-	2	26	28
	Injured while handling, lifting or carrying - unknown way.	-	-	2	2
	Slipped on dry surface or dry products/item on the surface.	-	1	-	1
	Tripped over obstruction (furniture, small items, etc).	-	8	10	18
	Slipped, tripped or fell on the same level in other way not specified above.	-	7	2	9
Fall from a height, up to & including 2 metres.	-	8	-	8	
Fall from a height - unspecified distance.	-	16	-	16	
Trapped by something collapsing or overturning.	-	-	1	1	
Other known kind of accident not listed above.	-	14	6	20	
Wheelchair	Total	-	92	313	##

Appendix F

**Local newspapers consulted
during search of Press
cuttings**

Newspaper	Location	Newspaper	Location
<i>Evening Express</i>	Aberdeen	<i>Leicester Mercury</i>	Leicester
<i>Press and Journal</i>	Aberdeen	<i>Lincolnshire Echo</i>	Lincolnshire
<i>Evening Echo</i>	Basildon	<i>Daily Post</i>	Liverpool
<i>Bath Chronicle</i>	Bath	<i>Liverpool Echo</i>	Liverpool
<i>Newsletter</i>	Belfast	<i>London Evening Standard</i>	London
<i>Belfast Telegraph</i>	Belfast	<i>Manchester Evening News</i>	Manchester
<i>Birmingham Post and Mail</i>	Birmingham	<i>Evening Gazette</i>	Teesside
<i>Blackpool Evening Gazette</i>	Blackpool	<i>Evening Chronicle</i>	Newcastle
<i>Bolton Evening News</i>	Bolton	<i>The Journal</i>	Newcastle
<i>Daily Echo</i>	Bournemouth	<i>North West Evening Mail</i>	Barrow in Furness
<i>Bradford Telegraph and Argos</i>	Bradford	<i>Northampton Chronicle and Echo</i>	Northampton
<i>The Argus</i>	Brighton	<i>Northants Evening Telegraph</i>	Kettering
<i>Bristol Evening Post</i>	Bristol	<i>Northern Echo</i>	Darlington
<i>Burton Mail</i>	Burton	<i>Norwich Evening News</i>	Norwich
<i>Cambridge Evening News</i>	Cambridge	<i>Nottingham Evening Post</i>	Nottingham
<i>News and Star</i>	Carlisle	<i>Oldham Evening Chronicle</i>	Oldham
<i>Evening Leader</i>	Chester / N. Wales	<i>Oxford Mail</i>	Oxford
<i>Colchester Evening Gazette</i>	Colchester	<i>Paisley Daily Express</i>	Paisley
<i>Coventry Evening Telegraph</i>	Coventry	<i>Peterborough Evening Telegraph</i>	Peterborough
<i>Daily Post</i>	Wales	<i>Plymouth Evening Herald</i>	Plymouth
<i>Daily Record</i>	Scotland	<i>Portsmouth News</i>	Portsmouth
<i>Derby Evening Telegraph</i>	Derby	<i>Reading Evening Post</i>	Reading
<i>Dorset Echo</i>	Dorset	<i>Scarborough Evening Telegraph</i>	Scarborough
<i>Dundee Courier</i>	Dundee	<i>The Scotsman</i>	Scotland
<i>Dundee Evening Telegraph</i>	Dundee	<i>Scunthorpe Evening Telegraph</i>	Scunthorpe
<i>East Anglian Daily Times</i>	East Anglia	<i>The Sentinel</i>	Stoke on Trent
<i>Eastern Daily Press</i>	Norfolk	<i>Sheffield Star</i>	Sheffield
<i>Edinburgh Evening News</i>	Edinburgh	<i>Shields Gazette</i>	S. Tyneside
<i>Exeter Express and Echo</i>	Exeter	<i>Shropshire Star</i>	Shropshire
<i>Flintshire Leader</i>	Flintshire	<i>South Wales Argus</i>	S. Wales

<i>Evening Times</i>	Glasgow	<i>South Wales Evening Post</i>	S. Wales
<i>Glasgow Herald</i>	Glasgow	<i>Southend Evening Post</i>	Southend
<i>The Citizen</i>	Gloucester	<i>Southern Daily Echo</i>	Southampton
<i>Gloucestershire Echo</i>	Cheltenham	<i>Sunderland Echo</i>	Sunderland
<i>Greenock Telegraph</i>	Greenock	<i>Evening Advertiser</i>	Swindon
<i>Grimsby Evening Telegraph</i>	Grimsby	<i>Torquay Herald Express</i>	Torquay
<i>Guernsey Press and Star</i>	Guernsey	<i>Western Daily Press</i>	Bristol
<i>Hartlepool Mail</i>	Hartlepool	<i>Western Mail and Echo</i>	Cardiff
<i>Huddersfield Daily Examiner</i>	Huddersfield	<i>Western Morning News</i>	Plymouth
<i>Hull and East Riding Daily Mail</i>	Hull	<i>Wolverhampton Express and Star</i>	Wolverhampton
<i>Ipswich Evening Star</i>	Ipswich	<i>Worcester Evening News</i>	Worcester
<i>Irish News</i>	Eire and N.I.	<i>Wrexham Evening News</i>	Wrexham
<i>The Irish Times</i>	Eire and N.I.	<i>York Evening Press</i>	York
<i>Jersey Evening Post</i>	Jersey	<i>Yorkshire Evening Post</i>	Yorkshire
<i>Lancashire Evening Post</i>	Preston	<i>Yorkshire Post</i>	Yorkshire
<i>Lancashire Evening Telegraph</i>	Blackburn		

Appendix G

**Parliamentary debate on the
issue of compulsory third-
party insurance for powered
wheelchair / scooter users**

The Parliamentary Under-Secretary of State for Transport (Mr. David Jamieson): I congratulate my hon. Friend the Member for Stafford (Mr. Kidney) on securing this important debate, and on the characteristic care and precision with which he has presented his case to the House.

Personal mobility is a vital part of daily life for all of us, and for many disabled and older people it is also the key to independent living. Losing the ability to go out and about independently can have a hugely damaging effect on an older person's quality of life. That is why the Government are wholly committed to addressing the transport and mobility needs of disabled and older people, not only in this important area but across the whole spectrum of public transport, the pedestrian environment and the private car.

We are well aware of the demographic trends to which my hon. Friend has referred, and of the need to ensure that we have the means to help older people retain that all-important independence. That is likely to include, for example, continuing to drive for as long as they can safely and comfortably do so, and offering them alternative forms of mobility when they come to the point of giving up driving. Mobility centres around the country, which the Department supports financially, have a key role to play in that. Of course, when discussing the subject of motorised wheelchairs, we are talking not only about keeping people mobile but about safety, not just for users but for other road users and pedestrians. My hon. Friend referred to some of those issues.

Before I respond to the main issue raised by my hon. Friend, it may be helpful if I briefly provide the House with some background on the legislation and the use of these vehicles. As he said, these vehicles are defined as "invalid carriages" in law. I agree with him that that is not a term that we would use these days—he called it an outdated term. I certainly do not think that we would describe the person who introduced the legislation—now Lord Morris of Manchester—as outdated. He continues to be a doughty fighter for disabled people. The sentiments and the measures in the legislation would certainly not be called outdated, but some of the terminology might well be.

My hon. Friend has already briefly set out the legal position, but I hope that the House will bear with me for a couple of moments as I complete the picture and clarify it for the record. The use of these vehicles on the highway is governed in legislation by section 20 of the Chronically Sick and Disabled Persons Act 1970, and by the Use of Invalid Carriages on Highways Regulations 1988. This Regulation states that they can be used on footpaths, pavements, bridleways, and pedestrian areas, at a max 4mph; Cannot be used on motorways, cyclelanes or bus lanes when in operation. No regulations govern their use off the highway. The 1988 regulations cover three classes of invalid carriage—one class for manual equipment and two covering powered vehicles. Class 1 covers manual wheelchairs. Class 2 covers those vehicles designed for use on the footway—what most of us call the pavement—that can travel up to speeds of 4 mph. Class 3 covers vehicles that can be used both on the footway, where like the class 2s they are limited to 4 mph, and on the road where they can travel up to 8 mph.

2 Dec 2002 : Column 731

Powered wheelchairs and scooters should not be seen as an alternative to a private car. They were introduced to provide local outdoor mobility for disabled people who might otherwise be confined to their home. Indeed, for the purposes of road traffic legislation these vehicles are defined as

This means that powered wheelchairs or scooters do not need to meet the same construction standards as a motor vehicle, nor do their users need to meet the same fitness standards as those required of a driver. However, given the speed restrictions and other limitations set out in the regulations covering their construction and use, the level of control has generally been regarded as reasonable. Of course, as many of the users may have been, or are still, driving a car, they will have experience of the highway code.

My hon. Friend referred to construction and use standards, and the 1988 regulations require that all powered wheelchairs and scooters meet standards for lighting when used on roads, and there are also requirements for brakes, a horn, mirrors and a speed indicator to be fitted. All classes of these vehicles can be used legally by only one person and that must be a disabled person, someone involved in the sale or maintenance of the vehicle or the training of the user. Powered wheelchairs and powered scooters also need to comply with the CE marking requirements under the medical devices regulations.

I have set out the general background to the construction and use of these vehicles, so I will now focus on insurance, which I know is of particular concern to my hon. Friend. He has already referred to a question that he asked recently in the House on the issue, and I have also received correspondence from other Members on the same subject. When the legislation was amended in 1988, it was considered unnecessary to introduce a requirement in law for compulsory insurance. The previous regulations—which had covered class 1 and 2 vehicles—had made no provision and there were strong representations that the status quo should be maintained. The decision was reached in consultation with disability organisations and enforcement authorities. At that time, there was very strong opposition to compulsory insurance from disability organisations and no clear consensus among the other bodies consulted.

On that basis, it was agreed that the most effective approach was to provide clear guidance to the users of these vehicles about their responsibilities as road users, including strong advice on the desirability of obtaining insurance, either through household insurance or a separate policy. As my hon. Friend said, insurance can be obtained at modest cost and, of course, can bring considerable peace of mind to the user.

The guidance—a code of practice for class 3 vehicle users—has been updated since 1988, and has been supplemented by a training pack specifically aimed at the users of the class 3 vehicles that can be used on the footway and on the carriageway.

In addition to the insurance question, we are aware that there are other issues about the use of these vehicles

2 Dec 2002 : Column 732

that are of concern to my hon. Friend and to members of the general public. Dropped kerbs, for example, are essential to help all wheelchair and scooter users cross from one pavement to another. Many disabled people are concerned that there are not enough of them or that they are too high. We have tried to tackle that problem in a number of ways. Our guidance to local authorities on local transport plans makes it clear that they must consider the needs of disabled people from the start to the finish of their journey. The guidance reinforces the requirement in the Transport Act 2000, which places a specific duty on local authorities that in developing their local transport plans, they must have regard to the transport needs of people who are elderly and have mobility problems.

My hon. Friend knows that we have put a substantial amount of extra new money into local transport plans. The amount has doubled in his area of Staffordshire over the past few years and I am sure that his authority is putting it to good use, not least as a result of the pressure that my hon. Friend puts on it to tackle the issue that he has raised. The guidance is called "Inclusive Mobility" and will help authorities prepare to comply with the duties of the Disability Discrimination Act 1995, which from 2004 will require the removal of physical barriers to access.

Concerns have been expressed by some pedestrians, especially those who are frail or who have low vision, about the size and speed of the vehicles used on pavements and in shopping centres. There are also concerns expressed by motorists about the ability of some class 3 users to control their vehicle. As a result of those concerns, there have been calls for tighter controls, such as minimum eyesight requirements, compulsory training or a test of competence.

My hon. Friend asked about the review of legislation. I assure him that we take the issue seriously, but we need to recognise the balance between the needs of the users of the vehicles to maintain their vital independence and mobility and the needs of other road users. We are aware that the use of such vehicles is likely to increase and we want to ensure that the legal framework is right. For those reasons, as a competent and forward-thinking Government—my hon. Friend tossed us that bouquet and I pluck just one small flower from it for my Department—we have decided to hold a full review of the 1988 regulations, covering all aspects of the use of those vehicles on the highway. We plan to hold the review next year.

The review will include a wide-ranging consultation with all interested groups and stakeholders. It will cover the full range of issues that I have touched on and perhaps others that have not yet been identified. During the course of the review, we will be happy to receive any specific comments that my hon. Friend receives. I commend his constituents on raising the matter with him. It is proper that they should do so and we would welcome their contribution to the consultation. Once the review is complete, we will consider whether any changes are needed either to the law that governs the use of the vehicles or to the guidance that accompanies the regulations.

My hon. Friend would not expect me to prejudge the outcome of the review, but we are keenly aware of the

2 Dec 2002 : Column 733

Balance that has to be struck between mobility and safety. As a result of misleading press coverage, which implied that we were committed to introducing compulsory insurance, we have received several representations from disability organisations arguing strongly against such a requirement. We also want to listen carefully to those opinions.

2 Dec 2002 : Column 734

My hon. Friend has raised important matters in his customary powerful but persuasive way. I congratulate him on raising the problem on behalf of disabled people and other users of the pavement and the road. If I have not been able to answer all his questions in the short time available, I will be happy to correspond with him.