

Carriage of Wheelchairs and their Users.

The following advice and information has been prepared to assist and inform drivers when required to transport wheelchairs and their users.

Note. Some wheelchair users can transfer to vehicle seats and some cannot. Where individual moving and handling assessments have been carried out, the advice contained in them should be followed. Where individual moving and handling assessments have not been carried out, then the following general guidelines may be useful.

Those wheelchair users who are able to transfer from their wheelchairs to vehicle seats easily, painlessly and without assistance should do so as travelling in a vehicle seat is accepted as being generally safer and more comfortable than a wheelchair. This assumes the empty wheelchair can be stored safely in the vehicle. Wheelchair users who are unable to transfer without assistance, for example those who cannot stand or those who can stand but cannot bear all their own weight should remain in their wheelchairs. This assumes that the wheelchair can be correctly secured in the vehicle and that adequate safety belts or harnesses are available to the passengers.

1 Advice and Guidance.

Definitive and comprehensive advice on travel safety for every wheelchair user is not currently available, however there are a number of sources of information and guidance, notably the Medicines and Healthcare products Regulatory Agency (MHRA), The Community Transport Association UK, The Department for Transport.

2. Wheelchair Manufacturers.

Some manufacturers of wheelchairs, buggies and seating inserts label their products giving advice on whether or how or how not to use their mobility aid as a seat when travelling in a road vehicle. Some manufacturers also publish information in leaflet form and in manuals and catalogues.

3. Wheelchair tie-down and occupant restraint manufacturers.

Manufacturers of wheelchair tie-downs and occupant restraints provide written instructions on how or how not to use their equipment.

4. Wheelchairs.

There are many different makes and models and sizes of wheelchairs. Some are bespoke or 'made to measure'. There are however some general travel safety guidelines available.

5 Wheelchair ‘parking’.

Wheelchairs usually have a ‘parked’ position (front castors swept forwards and wheelchair brakes on) in which they should be placed before wheelchair tie-downs and occupant restraints are fitted before commencing a journey.

6 Direction of Travel.

The Code of Practice on the Safety of Passengers in Wheelchairs on Buses (VSE 87/1 – not now in publication) advised that wheelchair users should never travel side-facing as wheelchairs offer little lateral protection. Wheelchair users should travel forward-facing unless provided with a vertical bulkhead against which to travel rear-facing. Wheelchair accessible taxis with integral bulkheads and suitable wheelchair restraints may offer this rear-facing facility, as do some wheelchair accessible low-floor buses. It is not advisable for a wheelchair users to travel rear-facing against the back of a vehicle seat because the backs of seats are rarely vertical, rather they are usually angled towards the rear for the comfort of the forward facing passengers.

Consideration should be given to travelling rear-facing when a wheelchair user cannot use a safety belt or harness for some reason. It may be that their bones are fragile (brittle) or because it causes excessive pain, or for example, because a moulded seating insert prevents access for the lap belt onto the passengers hips.

7. Bags on Wheelchairs.

Bags or holdalls are often hung on the backs of wheelchairs, thus raising the centre of gravity of wheelchairs and making them less stable. Also, during travel, there is a risk that in the event of a collision or sudden emergency the bag and or contents may become loose and cause injury. For these reasons bags and contents should be removed and stored safely in the vehicle.

Equipment Attached to Wheelchairs.

Wherever possible equipment attached to the front of a wheelchair at body height (for example: trays, tables, communication boards) should be removed and stored during the journey to avoid the risk of injury to the wheelchair user or other passengers in the event of a collision. If the support offered by a tray is important for posture, a custom made foam block could be considered as a safer alternative. It is not necessary or advisable to remove foot-rests from wheelchairs as they help the user to maintain sitting posture.

Equipment attached beneath or to the back of the wheelchair or buggy (for example; luggage rack, respiratory equipment, computer power packs) should be secured firmly to the wheelchair or buggy. Consideration should be given to how such equipment may behave in the event of a collision or sudden emergency.

8. Wheelchair Raised Backs and Head Restraints.

If a wheelchair is fitted with a raised back or a head restraint consideration should be given to leaving it in place during the journey to provide protection for the head and neck from whiplash injury. The shoulder straps of the wheelchair

occupant restraint should be slotted beneath the raised back rather than placed over the top of the raised back. This is because in the event of a sudden emergency or collision the straps might break the wheelchair raised back and thus become loose. If the wheelchair raised back prevents the shoulder straps of the wheelchair occupant restraint from fitting correctly, it should be removed and stored safely, and if possible be replaced with a detachable head restraint for the duration of the journey.

9. Detachable Head Restraints.

Where a detachable head restraint is used care should be taken to ensure it is correctly positioned and fitted securely. Detachable head restraints are usually fitted with a screw thread which ensures that a backward force against the cushion compresses rather than loosens the restraint.

10. Narrow Wheelchairs.

With narrow manual wheelchairs it is often impossible to follow wheelchair ratchet clamp manufacturer's instructions for correct use because the clamps slope inwards more than the recommended maximum. Where this is the case another type of restraint such as a 4- point webbing restraint is preferable.

11. Wheelchair Cross-Members.

Manual wheelchairs with cross-members attached near the rear wheels are very often impossible to secure safely with wheelchair ratchet clamps because the clamps are difficult to engage and virtually impossible to disengage rapidly. Where this is the case another type of restraint such as a 4-point webbing restraint is preferable.

12. Wheelchair Occupant Posture Belts.

Wheelchair occupant posture belts are not suitable for use as passenger safety belts because they are not designed for that purpose or strong enough to resist the heavy forces experienced in a collision. In addition they have no connection to the floor or body of the vehicle.

13. Powered Wheelchairs.

There are a number of additional safety issues to consider for passengers using powered wheelchairs.

14. Batteries.

Batteries should be firmly secured at all times, especially so when wheelchairs are being conveyed in road vehicles. The power supply should be switched off and any manual brakes applied. All battery filler caps/lids should be in place and secure. If the wheelchair has no manual brakes the clutches should be engaged.

15. Powered Wheelchairs Not To Be Secured With Ratchet Clamps.

It is now widely accepted that powered wheelchairs should not be secured by the use of ratchet clamps. A 4-point webbing restraint system is now regarded as the most suitable means of securing powered wheelchairs and their occupants. In addition, wheelchair batteries/power units often prevent clamps from being positioned correctly and furthermore, most powered wheelchairs are heavier than manual wheelchairs.

15. Centrally Mounted Joysticks.

Most powered wheelchairs are controlled by a joystick generally mounted on the left or right side arm of a wheelchair. However, some wheelchair users have a centrally mounted joystick. Where possible these should be swivelled to one side (bearing in mind the safety of others) or removed and stored safely during the journey. Centrally mounted joysticks positioned in front of the wheelchair user pose a risk of injury to the user in the event of a sudden emergency or collision. If it is not possible to remove the joystick in these circumstances then consideration should be given to padding it.

16. Seating Inserts.

There are a number of safety issues to consider where a seating insert is used in conjunction with a wheelchair. An important safety factor is to ensure that the straps or clips holding the seat to the wheelchair have been secured correctly.

The Medicines and Healthcare products Regulatory Agency (MHRA) formerly the Medical Devices Agency advises that postural straps supplied with a seat should continue to be used when travelling. Furthermore, special seats may need to be secured using straps, which are additional to, and separate from, the passenger's safety restraint system. (For example Active Design who produce the CAPS II seating system suggest that seating systems weighing over 4kgs should be restrained separately). This is to avoid the risk of a collision causing crush injuries to the passenger. Lightweight seating inserts may be treated as cushions when travelling and therefore do not need to be secured separately.

17. Pommels and Knee-Blocks.

Wherever possible (and only with the approval of the wheelchair user's medical adviser), hard pommels and knee-blocks should be removed during a vehicle journey. There is a risk of them causing injury to the groin, abdomen and/or head should the wheelchair user strike them in the event of a collision or sudden emergency. Once removed they should be stored safely in the vehicle. In some cases groin straps have been successfully used as a suitable temporary alternative.

If pommels or knee-blocks cannot be removed or temporarily replaced, consideration should be given to travelling rear-facing. If that is not possible, care should be taken to ensure the wheelchair user wears a travel harness which provides upper body straps in addition to a securely fitted lap strap. Give consideration to a means of padding the pommel or knee-block metal work.

18. Wheelchair Tie Downs.

Several companies manufacture a range of wheelchair tie-downs and occupant restraints.

19. Floor and Wall Tracking.

These days most wheelchair accessible minibuses are fitted with floor tracking. Low profile tracking is recommended for floor tracks. Surface mounted tracking is recommended for use as wall tracking to facilitate the securing of folded wheelchairs and other equipment.

20. Wheelchair Clamps.

These are still widely used. They are only suitable for use with manual wheelchairs weighing less than 38kgs. Lockable ratchet clamps are preferable to those that simply hook onto the wheelchair. This is because it is possible that if a non-locking clamp should for some reason work itself loose, the hook could become disengaged from the frame. Clamps with a locking head are less likely to become accidentally detached from the wheelchair frame.

Wheelchair ratchet clamps should be fitted as vertically as possible. Looking from the rear a slight lateral angle may be acceptable. (For example: C.N Unwin Ltd advise that for their non-locking clamps an angle of up to 20 degrees is acceptable and with locking clamps an angle of up to 30 degrees is acceptable).

21. Additional Equipment For Use With Wheelchair Clamps.

Additional equipment is available for use with wheelchair clamps. Wheelchair frame collars are available for use with non-locking wheelchair clamps, and for use with locking or non-locking clamps on wheelchairs constructed with sloping framework. Also available is an adjustable bar which rests on the wheelchair framework and onto which lockable wheelchair clamps can be secured. The bar should be positioned in such a way as there is no likely-hood of it protruding through or causing damage to the wheelchair spokes.

22. Wheelchair 4 Point Webbing Tie-Downs.

These are suitable for most types of manual or powered wheelchairs weighing less than 85kgs (or 106kgs in the case of heavy duty webbing tie-downs). These attach onto the wheelchair frame (at designated points) or at or just below seat height, two at the front and two to the rear of the wheelchair.

23. Fixed Base Wheelchair Restraints.

These are wheelchair restraints mounted on a fixed base which slots into the floor tracking. To use a fixed base system in conjunction with floor tracking, the floor tracking must be fitted accurately. Examples of such equipment include Unwin Safety Systems Ltd 'Rearlock' and 'Easilock', Wilkes Mobile Ltd produce a 'Seat Restraint System' which is not track compatible but which slots into predetermined access points in the vehicle floor and ceiling.

23. Passenger Safety Belts.

Passenger safety belts should be used correctly as recommended by manufacturers. They must fit the user correctly and comfortably. They should lay snugly across the pelvis, fitting inside, not outside, the framework of the wheelchair or seat. It is important that lap belts are not allowed to ride up onto the abdomen where they could cause internal injury in the event of a collision, or from which the passenger might ‘submarine’ or slide out.

The shoulder strap(s) should fit comfortably across the collar bone(s), not across the throat or neck. Safety belts should be easy to attach and detach in normal use and especially so in the event of an emergency.

A passenger safety lap belt (not the wheelchair lap belt) is the minimum acceptable for forward facing travel. A single diagonal strap or double shoulder straps which secure the upper body give additional protection especially to the face or head. It is advisable for passenger vehicles to carry seat belt cutters (with concealed blades) for use in an emergency.

24. 2-Point Safety Belts.

2 point safety belts have two points of attachment to the vehicle via the floor track system. This is the commonest type of safety belt fitting and there are three basic designs. Lap belt, inertia reel belt or fixed harness with two shoulder straps. Lap belts are the minimum required but offer little upper body security. Inertia reel belts are comfortable for a person with good muscle tone and upper body control. A fixed harness with two shoulder straps is preferable for a person with low muscle tone or little upper body control.

25. 3-Point Safety Belts.

3 point safety belts have two attachments to the floor plus an attachment to the framework of the vehicle above the height of the seated passenger’s shoulder. This is preferable to 2-point safety belts where shoulder straps run over the passenger’s shoulder and directly down to the floor. The third attachment point takes a single diagonal fixed belt or inertia reel extension but not a harness with straps over both shoulders. Currently very few vehicles are adapted to take 3-point safety belts but consideration should be given to incorporating this feature in new or replacement vehicles.
