

20th February 2019

National Transport Commission

**Public submission – Barriers to the safe use of innovative vehicles and motorised mobility devices
(January 2019)**

**Level 3/600 Bourke Street
MELBOURNE VIC 3000.**

Dear National Transport Commission,

I am writing to you on behalf of the National Committee on Rehabilitation Engineering (NCRE), a special interest group within the Biomedical College of Engineers Australia. Our members work extensively with clients who are clinically required to utilise motorised power wheelchairs as their primary mode of transportation. The Rehabilitation Engineering profession in Australia merges technical expertise with clinical experience. The Rehabilitation Engineering community in Australia is engaged across the Health and Disability sectors:

- Providing advocacy for clients in the areas of Health and Disability,
- Contributing to the development of relevant Australian and International Standards,
- Providing expert insight into the design and failure of Assistive Technology devices,
- Through a unique understanding of human/machine interfaces required in effective Assistive Technology,
- Providing expertise in developing and adapting Assistive Technology to suit the most complex disability needs.

In response to the ***NTC Issues Paper: Barriers to the safe use of innovative vehicles and motorised mobility devices (January 2019)***, the NCRE advocates for a review of the current National, State and Territory Road Rules, particularly as regards Australian Road Rule 288.3. The NCRE position reflects the findings of the National Transport Commission’s own report from 2007¹, now over 10 years old. This report stated:

“...the Australian Road Rules maintenance process has identified that there is a deficiency in the permissible unladen mass of motorised wheelchairs of 110kg (rule 288) for them to be able to ride on paths. This mass does not match the majority of wheelchairs that are in use today. They are much heavier and therefore legally they cannot be ridden on any path. Examining this issue from a national perspective through the Australian Road Rules maintenance process will ensure these particularly vulnerable user groups’ interests are considered.”

¹ National Transport Commission’s Australian Road Rules: 5 Year Effectiveness Review (2007)

This statement remains an accurate reflection on the lived reality of many power wheelchair users, who are required to be in violation of the Australian Road Rules in order to have even basic access in their communities. An appendix to this submission provides a summary of many current commercial power wheelchairs that are prescribed for clients in Australia. As is immediately evident from this table, the 110kg unladen mass referenced in 288.3 does not reflect the current consumer market in power wheelchairs (or the mobility scooter market). Even chairs quoted as having an unladen mass below 110kg represent the lightest possible configuration achievable. The quoted unladen mass typically omits essential additional or third party seating items (such as pressure care cushions, back rest shells, additional postural supports, and power seating modules) that, by being permanent additions to the chair need to be considered in the effective unladen mass (as per the . Additional medical equipment necessary for high care needs clients are also not considered (such as respirators, oxygen bottles, or suction pumps). Such additional equipment is typically necessary to ensure the safe and effective use of the wheelchair or to meet the health and disability needs of the user and /or to allow safe and appropriate assistance to be provided by attendant caregivers or support workers.

Power wheelchairs, unlike mobility scooters, are typically prescribed medical devices specifically configured to suit the individual health and disability needs of the user. For many diagnostic groups a power wheelchair is necessary for independent access around the home and into the community and for daily living. This includes many individuals with a spinal cord injury, spina bifida, multiple sclerosis, stroke, cerebral palsy, muscular dystrophy or motor neuron disease as examples. Where the wheelchair is utilised for daily living it must be configured to provide adequate and individualised pressure care and postural management whilst optimising functional capability and comfort. The power wheelchair is not, in such cases, a luxury item; it is essential to basic mobility and is therefore an integral component of the individual's life.

It is the opinion of the NCRE that ARR 288.3 urgently requires updating to provide a realistic and realisable guideline for road user safety. It is suggested that the *Standards Australia Technical Specification 3695.3 - Requirements for designation of powered wheelchairs and mobility scooters for public transport and/or road-related area use*, developed to set guidelines for safe use of public infrastructure, might provide a relevant point of reference for a revision of ARR 288.

The National Committee on Rehabilitation Engineering offers the following recommendations for consideration:

Recommendation 1: Revise the Australian Road Rules to distinguish between Power Wheelchairs² and Mobility Scooters³

Recommendation 2: Remove references in the Australian Road Rules to unladen mass limits for Power Wheelchairs as per SA TS 3695.3 (Table 4.6.1(B))⁴

² Prescribed Power Wheelchair: A motorised mobility device that has been clinically justified and prescribed for the occupant by an Allied Health professional with locally recognised registration.

³ Mobility Scooter: A motorised mobility device used by an individual which has not been prescribed by a registered Allied Health professional with locally recognised registration.

Recommendation 3: Set the unladen mass limit of Mobility Scooters to 170kg as per SA TS 3695.3 (Table 4.6.1(B))⁴

Recommendation 4: A requirement is made for product documentation/manuals to state explicitly that some infrastructure is not rated for loading mass (vehicle, plus occupant, plus accessories, plus baggage, plus attendant) in excess of 300kg which may limit access in some areas and situations, in keeping with SA TS 3695.3: 2018 (Section 6.3).

Recommendation 5: All Power Wheelchairs are required to be fitted with a switch or driving profile which limits the top speed to 5km/h or below when engaged (to be used when in areas of high pedestrian density).

In preparing this submission it has been noted that a number of key organisations are in general agreement about the need for the Australian Road Rules to be reviewed with regard to their treatment of Power Wheelchairs and Mobility Scooters. This includes, but is not limited to:

- The National Transport Commission itself (as noted above)¹
- Austroads⁵
- Assistive Technology Suppliers Australasia⁶
- NSW Council of Social Service⁷
- Occupational Therapy Australia⁸

It is vital that potential changes to the Australian Road Rules are considered with regard to their potential impact on public safety. There have been concerns expressed about the current level of public safety associated with powered mobility devices leading to inquiries such as the Senate Standing Committee on Rural and Regional Affairs and Transport's "Inquiry into the need for regulation of mobility scooters, also known as motorised wheelchairs". A number of submissions to this Inquiry demonstrated the very low incident rate figures⁹ involving mobility devices:

- 0.4%: Fatalities involving mobility devices (NSW road toll 2014-17)
- 0.001% (106): Casualties involving mobility devices on NSW roads
- 1 of 392 fatalities in 2017 was a person using a mobility device

⁴ Standards Australia Technical Specification 3695.3: 2018. Wheelchairs, Part 3: Requirements for designation of powered wheelchairs and mobility scooters for public transport and/or road-related area use.

⁵ Senate Standing Committee on Rural and Regional Affairs and Transport Inquiry into the need for regulation of mobility scooters, also known as motorised wheelchairs: Submission 64 (Austroads).

⁶ Senate Standing Committee on Rural and Regional Affairs and Transport Inquiry into the need for regulation of mobility scooters, also known as motorised wheelchairs: Submission 75 (ATSA).

⁷ Senate Standing Committee on Rural and Regional Affairs and Transport Inquiry into the need for regulation of mobility scooters, also known as motorised wheelchairs: Submission 78 (NSW Council of Social Service).

⁸ Senate Standing Committee on Rural and Regional Affairs and Transport Inquiry into the need for regulation of mobility scooters, also known as motorised wheelchairs: Submission 94 (OTA).

⁹ Senate Standing Committee on Rural and Regional Affairs and Transport Inquiry into the need for regulation of mobility scooters, also known as motorised wheelchairs: Submission 106 (NSW Government).

Similarly the Austroads submission (#64) to the same Inquiry advocated for the Australian Road Rules to be updated to refer to SA TS 3695.3, arguing that this would improve public safety:

- *“the Technical Specification is designed to improve the safety of motorised mobility devices. In particular the [Technical Specification] will require motorised mobility devices to demonstrate dynamic and static stability on slopes, limit the dimensions of the devices, introduce a slow speed switch for devices that can exceed 6km/h, and ensure devices can negotiate uneven surfaces.”⁵*
- *“The slow speed switch will provide a practical mechanism to help ensure users do not accidentally speed into trouble. The use of the low speed switch will be encouraged in areas of high pedestrian activity, or other locations where there might be a danger from and errant manoeuvre (for example on a train platform).”⁵*
- *“The proposed changes are consistent with the safe systems approach to improve road safety. Maintaining a maximum speed of 10km/h, with the addition of a mandatory low speed mode if the device is capable of exceeding 6km/h will help to ensure users travel at safe speeds. Changes such as the requirement for motorised mobility devices to be able to negotiate slopes and obstacles also means the safety of these vehicles will be improved.”⁵*

The Assistive Technology Suppliers Australasia submission (#75) referenced the British standard (BS EN 12184:2014 *Electrically powered wheelchairs, scooters and their chargers – Requirements and test methods*) noting that it is less restrictive in Power Wheelchair mass and speed limits than the current ARRs. In their submission ATSA advocates for the Australian Technical Standard to be aligned with International Standards to give AT users access to a full range of AT devices (ATSA Recommendation 3). They argue that this approach would also serve to align Australian legislation with the *Convention on the Rights of Persons with Disabilities* and *Optional Protocol 20: Personal Mobility*. Their subsequent Recommendation (ATSA Recommendation 4) suggests that the Australian Road Rules reference these Standards as the basis for guidelines around device mass limits.

The NCRE believes that the five recommendations outlined provide reasonable and realisable alternatives to the current Australian Road Rules, removing the out-dated mass limit, while maintaining a strong emphasis on public safety.

The NCRE appreciates the opportunity to respond to the National Transport Commission’s Issue Paper, and for the opportunity to present our recommendations. The NCRE is happy to engage in further communication in any manner that would be helpful to the Commission on this matter.

Yours Sincerely,



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Appendix

Sample of current Power Wheelchair models prescribed for clients with health/disability associated mobility needs, 2018/19.

Power Wheelchair Model	Unladen Mass of Wheelchair	Reference
Glide Centro	140kg+	Glide Centro user manual http://www.glide.com.au/wp-content/uploads/2018/02/Centro-Owners-Manual-2018.pdf Accessed 19/02/19
Permobil M1	145kg+	Manufacturer product datasheet https://permobil.com.au/wp-content/uploads/2018/05/M1-Flyer-AU-Rev-A-LR.pdf Accessed 20/02/19
Permobil M3	175kg+	Manufacturer product datasheet https://permobil.com.au/wp-content/uploads/2017/06/M3-Corpus-Flyer-AU-Rev-A-LR.pdf Accessed 19/02/19
Permobil M5	195kg+	Manufacturer product datasheet https://permobil.com.au/wp-content/uploads/2017/08/M5-Corpus-Flyer-AU-Rev-A-LR-1.pdf Accessed 20/02/19
Permobil F3	175kg+	Manufacturer product datasheet https://permobil.com.au/wp-content/uploads/2017/04/F3-Corpus-Flyer-AU-Rev-B.pdf Accessed 20/02/19
Permobil F5	186kg+	Manufacturer product datasheet https://permobil.com.au/wp-content/uploads/2017/04/F5-Corpus-Flyer-AU-Rev-B.pdf Accessed 20/02/19
Permobil M300 PS Jr Paediatric	141kg+	Manufacturer product datasheet https://permobil.com.au/wp-content/uploads/2016/12/M300_PSJr_Web.pdf Accessed 20/02/19
Permobil K450MX Paediatric	152kg+	Manufacturer product datasheet https://permobil.com.au/wp-content/uploads/2016/12/K450_MX_Web.pdf Accessed 20/02/19
Quantum Q6 Edge 2.0	97kg+*	Distributor product datasheet http://www.pridemobility.com.au/default/assets/pdf/Brochures/AU_q6edge2ss_4-16_HR.pdf Accessed 20/02/19
Quantum R-44	104kg+*	Distributor product datasheet http://www.pridemobility.com.au/default/assets/pdf/Brochures/AU_R44_SellSheet_3-12_HR.pdf Accessed 20/02/19
Quantum Q6000Z	115kg+*	Distributor product datasheet http://www.pridemobility.com.au/default/assets/pdf/Brochures/Au%20Quantum%206000Z.pdf Accessed 20/02/19
Quantum Q610 Paediatric	73kg+*	Distributor product datasheet http://www.pridemobility.com.au/default/assets/pdf/Brochures/AU_Quantum_Pediatric_Bifold_12-11_HR.pdf Accessed 20/02/19
Quickie Xplore	146kg+	Manufacturer technical service manual http://www.quickiepower.com/webfiles/quickiepower/docs/techcorner/Xperience%20and%20Xplore%20Tech%20Service%20Manual%20rev%202010-25-10%20rev123567.pdf Accessed 20/02/19
Quickie Xperience	146kg+	Manufacturer technical service manual http://www.quickiepower.com/webfiles/quickiepower/docs/techcorner/Xperience%20and%20Xplore%20Tech%20Service%20Manual%20rev%202010-25-10%20rev123567.pdf Accessed 20/02/19
Quickie Xcel (Bariatric)	150kg+	Not reported (Measured at over 150kgs)
Quickie QM-710	110kg+	Manufacturer website http://www.sunrisemedical.com/power-wheelchairs/quickie/mid-wheel-drive/qm-7-series Accessed 20/02/19

* Quoted mass does not include cushion, backrest, or additional postural supports necessary for safe, effective seating.

Quickie Pulse	106kg+	Manufacturer website http://www.sunrisemedical.com/power-wheelchairs/quickie/mid-wheel-drive/pulse Accessed 20/02/19
Invacare TDX 2.0	156kg+	Manufacturer product datasheet http://www.invacare.com.au/file/773/download?token=UblK8tme Accessed 20/02/19
Invacare Storm Torque	120kg+	Manufacturer website http://www.invacare.com.au/products/power-mobility/power-wheelchairs/storm-series-3g-torque Accessed 20/02/19
Ottobock Bseries	107kg+	Manufacturer website https://www.ottobock.com.au/wheelchairs-and-seating/complex/power-wheelchairs/bseries/ Accessed 20/02/19
TA-iQ MWD/FWD/RWD	155kg+	Manufacturer technical service manual http://www.ta-service.dk/en/images/pdf/TAiQusermanual2.1.pdf Accessed 20/02/19
Magic Mobility Frontier V4	Not reported	Not reported
Magic Mobility Frontier V6	135kg+	Not reported (Measured at over 135kgs)
Magic Mobility X8	106kg+	Manufacturer owner manual https://www.magicmobility.com.au/wp-content/uploads/2014/02/Extreme-X8-Owner-Manual-G90.pdf Accessed 20/02/19