

AAAC – Wheelchair Racing – Coaching Notes

Introduction:

It is hoped that the following notes assist in providing an initial level of information and pointer towards sources of reference to develop the awareness of some specifics related to the coaching of Wheelchair Racing. The notes are on occasion an edited capture from the information that exists in various media sources with the addition of personal commentary.

There is a wealth of information and guidance available to assist the developing coach build their knowledge and in doing so enables the fundamental principles of athletics coaching to be satisfied. Those principles are no different for the para-athlete and able-bodied athlete:

- Athlete centred approach
- Inclusive attitude
- Fun and safe environment
- Athlete involved and empowered in their own development

Rules & Regulations:

Two key references relative to the Rules and Regulations are given below. The first is most likely well known to all who are involved in athletics, either as athletes, officials, or facility managers etc.

The second reference document is Para Athletics specific and whilst it naturally contains many identical rules and regulations common to those in the first, it is a key source of rules and regulation needs for the participation in Para Athletics.

[Rules of Competition | UK Athletics](#)

[Athletics Rules and Regulations | World Para Athletics \(paralympic.org\)](#)

Athlete Classification & Eligibility:

A key requirement for a Wheelchair Athlete is for them to be “Classified” which is the term used to provide a grouping and categorising of athletes according to how much their impairment affects fundamental activities.

Classification for wheelchair racing is coordinated by British Athletics nationally. This includes the British Athletics / IPC Master List of athletes. A classification (or confirmation of eligibility) is required to enter all Parallel Success competitions and major road races such as the London Marathon. It is also needed for results to be recognised on the British Athletics Rankings (www.thepowerof10.info). Classification involves both testing of muscle power, coordination and impairment and practical observation. A classification in another sport (i.e. wheelchair basketball) doesn't guarantee eligibility for wheelchair racing.

Classification is required to compete in most track and major road events, especially as one progresses in the sport. For wheelchair athletics there are two main groupings:

- T32 – T34 Cerebral Palsy (Diplegia /Quadriplegia)
- T51 – T54 Principally Spinal Cord Injury (Tetraplegia & Paraplegia) but also Amputees, Limb Deficiency, Brittle Bones etc.

The Racing Wheelchair:

Just as the able-bodied runner looks for a shoe that meets their personal needs relative to fit and responsiveness, whilst still satisfying the Rules and Regulations, the wheelchair athlete must consider the same needs in their choice of racing wheelchair.

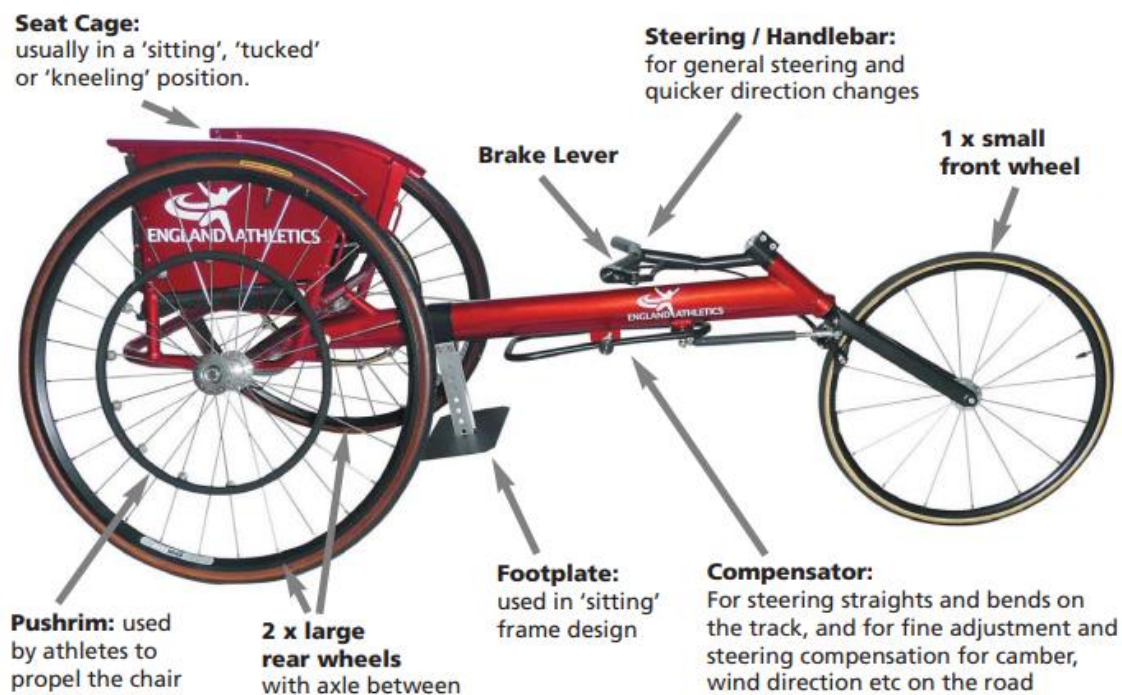
A racing wheelchair is specially designed for competing on the track and road. Much longer than their day chair, they are made using lightweight materials such as aluminium, titanium and carbon fibre.

The figure below shows a typical racing wheelchair. The frame incorporates a cage that can be built for the individual's width, height, and seating preference, or to fit the general requirements of a 'typical starter racer' for club and group use.

The chair may have a footplate or a kneeling configuration. Whilst, it is usual for adjustable strapping to be used for new and younger athletes to allow small modifications (the seat width is set), the more experienced athletes will often use a 'solid' kneeling cage, lined with a thin layer of foam.

The wheels use bicycle type technology including low-profile high-pressure racing tyres. Athletes often start on spoke wheels and then progress onto more expensive carbon wheels.

To assist with getting around the track, the compensator acts like a rudder, holding the steering for the straight and bend (pre-set to a chosen lane) so that the athlete's arms can keep the power on. This also assists with 'compensating' the effects of camber on the road. Apart from a brief hit on the 'compensator,' steering by the steering handle is seldom used by athletes on the track. The handles provide the location for a brake lever which activates the brake on the front wheel.



Specialist gloves are used to protect the hand and to hold the hand in a good position for striking the push rim. The gloves can be "soft" gauntlet type, or "hard" which can be a stock type or custom 3-D printed to fit the athlete's hands. Wet and dry configurations are also invaluable given that training and competing in all weather conditions exist for the athlete. Without the wet option, the slippage that occurs between glove and the push rim can be excessive and result in not only loss of drive but injury to the athletes under arm striking the racing wheelchair frame.

Techniques:

A wealth of information is available online that describes the push technique that is key to the wheelchair athlete's performance. An extract from the England Athletics publication, "Inclusive Coaching Guidance for Wheelchair Athletes" gives an excellent summary:


There are 5 main phases to the Wheelchair Racing push technique:

- *Catch (or contact) phase*
- *Drive (or push) phase*
- *Release phase*
- *Lift & Stretch phase*
- *Acceleration (or drive) phase*



For those looking for more information on the Push Technique, reference should be made to the Technical Model Analysis in the above noted publication. A key note is that the drive phase should ideally exist via contact with push rim from 1 – 2 o'clock to 6 – 7 o'clock.

As an athletics coach the need for observation and to listen to the athlete are of course understood and firmly established. The above noted publication gives a good summary of fault observations that may exist in the wheelchair athlete's technique and guidance in how to correct, is tabled below:

Common Fault	Correction
Gripping with hands or unable to hold fist	Using glove with tabs. 
Pushing with thumbs	Point thumbs forwards and then down during drive phase.
Pushing to 3^{o/c} (and not to 6 or 7^{o/c}) with hands going forward during recovery without backward extension / recovery	Athletes are using day chair pushing technique / pushing on top of rims.
Not pushing to or through 6^{o/c}	Seating position is incorrect. Wheels or push-rim too large, chair too wide etc. Coming up with shoulder/trunk too early i.e. before release and extension
Front wheel bouncing	Seating position is incorrect (too far back/too high). Excessive trunk movement. Coming up too soon with shoulders (before 6 ^{o/c}).
Athlete struggling to maintain direction.	Ensure front wheel is on ground at all times so compensator can be used.

Training & Racing:

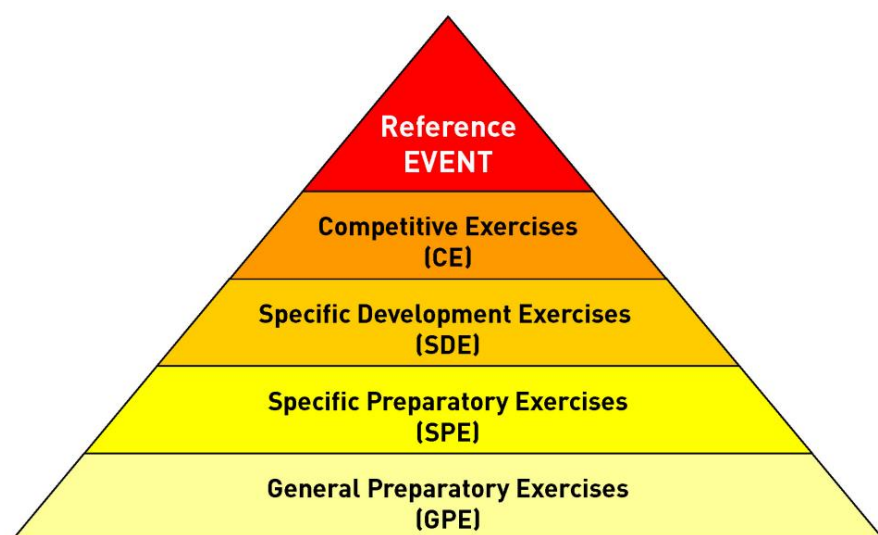
The wheelchair racing athlete's training and racing must recognise that their stage of development needs to be carefully considered. The UKA ADM (Athlete Development Model) is as relevant to the wheelchair athlete as it is to the able-bodied athlete.

Wheelchair racing training can be a mixture of group and individual sessions, on track, cycle paths and roads (including undulating routes and hills for reps). Indoor training rollers provide an excellent training option in winter (often seen as the alternative to XC) and summer and can be used to deliver a specific "roller session" or to complement regular training programs. The use of weighted sledges attached to the racing wheelchair is also an excellent way of catering for resisted sprint work.

Competitions range from 100m through to 10,000m on the track and from 1 mile to the marathon (and beyond) on the road. The track season is no different for the wheelchair and able-bodied athlete and often a meeting will have both catered for. Road races exist all year round.

The contents of the wheelchair athletes training plan is essentially no different to the able-bodied athlete and is geared towards the athlete's focus on competition type/event for the period, be it season or year. However, having said that, when the training is a road session, there are clearly additional Health & Safety considerations that need to be in place such as how to cater for traffic management on open roads and should it be required, carrying of equipment for issues such as punctures etc. The accompanying coach or training partner will often be riding on a bike alongside or behind the wheelchair athlete, effectively providing what can be considered as risk assessed control measures for the session. Given that the wheelchair athlete can be moving at speeds up to and beyond 30 kph, the person cycling must also have that capability as well as competency.

Looking at the broader aspects of training, the UKA Exercise Hierarchy (figure below) would all apply throughout, albeit that some of the GPE and SPE elements undertaken will be more specific to the needs of the wheelchair athlete e.g. muscle groups engaged in the push technique.



Conclusion:

Hopefully the above notes satisfy the objective of providing an initial level of information and pointer towards sources of references relative to Wheelchair Athlete coaching. A key message offered is:

“Coaching of a disabled athlete does not require an extensive knowledge of the disability or impairment.”

The source of the above statement goes on to explain how the coach will adapt and modify any aspects that need to be addressed to cater for the individual athlete’s needs.

My take on the above is that we, as Athletic Coaches, all have the coaching skills, we just need to tailor them to any make them specific to the Wheelchair Athlete’s needs.

Useful links & contacts:

<https://www.uka.org.uk/competition/rules-of-competition/>

<https://www.paralympic.org/athletics/rules>

<https://www.thepowerof10.info/rankings/>

<https://db.ipc-services.org/sdms/web/>

[Inclusive Coaching Guidance for Wheelchair Athletes \(squarespace.com\)](#)

and of course, the key AAAC and Scottish Athletics contacts:

Ruth Watson, AAAC, Community Development Officer: pathways@aberdeenaac.co.uk

Pamela Robson, Scottish Athletics, National Disability Pathway Officer:
pamela.robson@scottishathletics.org.uk

Regards,

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