



Le rôle du vélo en triathlon; préparation à la performance

It's All About the Bike

Aujourd'hui

- L'historique et l'actuel
- Pourquoi le vélo?
 - En chiffres, en exigences, en résultats
- Comment préparer pour le vélo?
 - Les besoins spécifiques, la technique, la mécanique etc.
- Quoi préparer pour les exigences du vélo?
 - Les testings et les entraînements

Se situer....

- Mes antécédents de triathlon; mes débuts, mon passage et la fin
- Mes antécédents de vélo; Équipe Specialized Mazda
- Mon cheminement de coach grâce au vélo; what I learned on the road and how it has helped me coach triathlon
- Mon cheminement continue; understanding the intricacies of high level cycling for triathlon

Out with the old...In with the new...

- Mentalité ancienne du vélo en triathlon
 - Pas important; recruter des nageurs et des coureurs
- Nouvelle mentalité du vélo en triathlon
 - Programmes structurés pour satisfaire aux exigences de la course
- Technologies pour le vélo en triathlon
 - Travailler avec la puissance, analyse de fichiers etc.

POURQUOI, COMMENT,
QUOI??

Pourquoi le vélo?

«If I can win on the bike, I will»

- Alistair Brownlee

Les chiffres; le pourquoi?!

- 1500m swim (18.5 minutes) pour un temps moyen de 1:52 sur une distance olympique en WTS, WC and EC/CC
= 17% de la durée de la course
- 10km run @ (33.5 minutes) pour un temps moyen de 1:52 sur une distance olympique en WTS, WC and EC/CC
= 29% de la durée de la course
- 40km (60 minutes) pour un temps moyen de 1:52 sur une distance olympique en WTS, WC and EC/CC
= 54% de la durée de la course

Le pourquoi...continuer

- Impact du vélo sur la course à pied...et la natation (à l'entraînement et en course)
 - mesurer la charge et doser la charge
- Sécurité et santé
 - for others/for the individual
- Anxiété – aspects emotionels
 - La peur/coachability etc.
 - Aspets financiers

What next?

- First things first: Bike Fit and Function

«Bike Fit is based on a clear understanding of the demands of draft legal competition, your own coaching philosophy and the help of experienced IST personnel»

-Jamie Turner

The Basics - Technical

- Start from the front end of the bike – Reach and stack
 - A deal isn't a deal if....
 - Look at shoes and cleats - toe box and cleats forward (Metatarsal 3 and 5)
- Respect the athletes' limitations
 - Flexibility/injury history
- Never compromise comfort for style
 - Hip angles, knee flexion and ankle dorsi-flexion – Crank length
- Don't be afraid to change things

- The draft legal triathlete requires a cycling position that:
- Promotes lower torque, higher cadence power production without diminishing the athletes' capacity to produce power under high torque, low cadence situations.
- Aids the athletes' ability to run at peak speeds off the bike
- Maintains the basic needs of all cyclists – balance, stability, cornering, descending, high speed
- Complies with the I.T.U. Technical Equipment Regulations



The Basics – Technical Skills

«La technique»

- Qu'es ce qui est entendu par «la technique»?

Ability to perform a skill

Ability to perform a skill at speed

Ability to apply skill acquisition to a race specific situation

PERFORMANCE ON DEMAND!

The Skills

(Les habiletés)

- Équilibre (push scooter/big bikes)
- Gearing/Gear Selection – Accélération et décélérations en maintien de forme, de force et de pedal torque
- Embarquer/Débarquer (timing/sauter à la corde)
- Freinage – Utilisation du frein avant/en rentrant dans les virages
- Virages – 3 types y compris countersteering
- Ascension et descente
- Vélo en peloton – Le spatiale
- La mécanique et l'entretien général; OUI, ceci est un habileté!!

Comment?

- 1) Assurer le bon fit pour l'athlète; son confort et sa sécurité et sa santé
- 2) Assurer la confiance de l'athlète avec l'introduction et l'assimilation des techniques et des habiletés de vélo menant à la performance (execution and transfer skills)
- 3) Travailler les bons aspects pour les exigences du vélo en ITU (physiologique)

Skill Development – COMMENT?

- Comment bâtir une programmation qui nous amènent à l'atteinte de l'objectif no. 2 sur le diapositif précédent?
 - Identify the skills necessary for the performance level of the athlete concerned (your philosophy – keep it simple)
 - Ensure your ability to demonstrate/communicate these skills
 - Establish a skill progression (as per slide no.12)

COMMENT?? On continue...

- La répétition
«Repeat and master to perfection»

Sample skill and progression through skill from
introduction to mastery:

Understanding pedal torque and gearing

Understanding Pedal Torque and Gearing - Skill Acquisition and Progression

Note: Skill is NOT independent of other skills, aka: understanding balance

Skill acquisition can begin as early as 5-6 years of age with a fixed gear and training wheels, however the exercise below should be done with athletes from 9-13 years at a beginner to intermediate level.

Coaches – First YOU must understand pedal torque (Slide no.15)

PEDAL TORQUE: Power being delivered to the pedal (strength required to move the pedal) and the amount of watts effectively being used to move the pedal/bike forward.

Step 1: Have athletes identify the size of their two front plates and their crank length. Count number of gears on back cassette. Discuss the use of gearing as well as the use of braking 😊

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Step 2: Have athletes lift rear wheel of bike (this can be done in teams of 2) and spin rear wheel by moving crank with hand

Step 3: Have athletes (while still working in teams of two and holding rear wheel aloft) shift through gears. Discuss what happens.

Step 4: Have athletes mount bicycles and give specific instructions on gear ratio (39x14) and have them ride around in ONLY that gear – Get feedback

Les étapes...continuer

Step 5: Ask athletes to change plates (50x11) and ask them to repeat exercise. Get feedback.

Step 6: Explain torque using the parameters above

Skill Progression Options

- Riding track bikes or fixed gear bikes (BMX etc.) (12-13yrs+)
- Blocking out gears (13-14yrs)
- Writing workouts that dictate specific gearing (adapt workouts for road and trainer) (14+ yrs)
- Riding on rollers (14+yrs)
- Sprinting in specific gears (16+yrs)

Quoi?

- Integrating the skill based demands of cycling and the physiological based demands of cycling for ITU triathlon –
 - 6'' power (8-12 ans+) – Alactic Capacity
 - 12'' power (8-12ans+) – Alactic Power
 - 30'' power (8-12ans+) – Lactic Capacity
 - 1'-2' power – Lactic Tolerance and Anaerobic Strength and Anaerobic Tolerance (Puberty),
 - 3-4' power (13-14ans+)and 7-10' power (14 ans+) – Maximum aerobic power and tolerance

Establishing Benchmarks

- CP 20 Test
- Ramp Test
- PAM Test
- 1 minute Power
- PPO
- Custom Protocol?

Stationary Power and Power in the field

- Different technologies available
 - computrainers, powertaps, cranks, pedals
- Quality power in the competitive season on a stationary platform
 - the use of quality controlled power in season
- File collection and analysis
 - Platforms for uploading files and the use of its' content
- What next?

Sample data from Auckland WTS 2014

Triathlon Canada cycling.pdf - Adobe Reader

File Edit View Window Help

Open [Icons] 35 / 72 73.9% [Icons] Tools Fill & Sign Comment

```
Dur | Rec: 5s 10s 30s 60s 60+ ( 118 )
5 sec: 0 16 32 6 11 ( 65)
10 sec: 1 20 6 5 4 ( 36)
15 sec: 1 6 2 2 0 ( 11)
20 sec: 0 2 2 0 0 ( 4)
20+sec: 0 0 1 0 1 ( 2)
```

```
          5s      10s      30s      60s      60+s      (total)
5 sec: 0.00% 13.56% 27.12% 5.08% 9.32% (55.08%)
10 sec: 0.85% 16.95% 5.08% 4.24% 3.39% (30.51%)
15 sec: 0.85% 5.08% 1.69% 1.69% 0.00% ( 9.32%)
20 sec: 0.00% 1.69% 1.69% 0.00% 0.00% ( 3.39%)
20+sec: 0.00% 0.00% 0.85% 0.00% 0.85% ( 1.69%)
```

Cadence Summary
Interval Length vs Average Cadence

```
Dur | cad: 80 85 90 95 100 105 105+ ( 118 )
5 sec: 1 7 6 10 8 11 22 ( 65)
10 sec: 0 2 4 4 6 10 10 ( 36)
15 sec: 0 0 2 0 4 4 1 ( 11)
20 sec: 0 1 1 1 0 1 0 ( 4)
20+sec: 0 0 2 0 0 0 0 ( 2)
```

Interval Length vs Start Cadence

```
Dur | cad: 70 75 80 85 90 95 95+ ( 118 )
5 sec: 0 1 6 10 7 7 34 ( 65)
10 sec: 4 3 3 3 4 2 17 ( 36)
15 sec: 1 2 1 0 0 3 4 ( 11)
20 sec: 0 0 0 2 0 1 1 ( 4)
20+sec: 0 0 0 0 0 0 2 ( 2)
```

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Data Summary

(Aaron Royle – London 2014)

---	<8.5w/kg(578w) 58 intervals (49.15%)
—	<9.5w/kg(646w) 24 intervals (20.34%)
— -	<10.5w/kg(714w) 24 intervals (20.34%)
- -	>=10.5w/kg(714w) 12 intervals (10.17%)

—	One Min Power: 490W(7.21w/kg)
—	Four Min Power: 366W(5.38w/kg)

What does this all mean?

Plus de vélo....

- More attention to detail with bike fits/shoes/cleats
- More COACHED cycling sessions with SKILLED cycling coaches; skill progression and race simulation/execution skill based assessment
- More quality work on the bike that is specific to race demands
- OK to go old school BUT also Use the technology!!

Questions

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