

## Technical and Tactical Preparation...

This is a shorter and less involved article than the last couple. I just wanted to offload a few home truths really – the stuff that dances around in the head of a Mountain Biking coach. This is different to the stuff that dances around in the head of a non-specific endurance coach or a Road Cycling coach. It's not that I'm better than other people or anything like that; it's just that I'm a Mountain Biker and there are little idiosyncrasies to this wonderful sport that we've really got nailed here at TORQ.

For instance, successful Mountain Bikers deliver power through the back wheel differently to Road Bikers. On the road, all of the power you put through the cranks makes it to the back wheel (a teeny weeny bit is lost through chain inefficiency, but it's negligible). Then where does the power go? From the back wheel it goes onto the tarmac through a tyre that bonds beautifully to the road surface. It's a very efficient system, so a huge amount of the power you produce actually drives you forward.



Photo – Evan Jeffery

Off road it's different, because power applied at the cranks won't necessarily drive you forward without power-drain (the loss of power through rear-wheel slippage and loss of traction). In some instances, this power-drain is obvious, because when you're riding over wet roots, slippery rock, greasy mud or sand overlying smooth rock, you feel the back wheel slip. At other times, it will be so subtle that you won't realise it's happening and this is a key issue. Small micro-slippages will drain your power away and you will waste energy. 600Km over 7 days requires you to be efficient trust me – you can't afford not to be.

So, you've got to pedal smoothly and apply a torque to the cranks rather than pushing in straight lines. If you do this and practice in training, you will cover the distance with less energy expenditure. If you're very good at it, you'll save a significant amount of energy and stay much fresher. To help you to pedal smoothly, picture this:

- You are pedalling in circles – think about applying force along the bottom of the pedal stroke (imagine scraping dog poo off the toe of your shoe) and apply force to the up sweep and push over the top. The down-stroke will take care of itself.

- Think about 'constant chain tension'. If you get constant tension running through the chain, you must be applying a torque.
- If you perfect this technique, when you're on a turbo trainer, you'll hear a constant hum, even under high resistance conditions. Bad pedalling can be heard!

Why does smooth pedalling work? Basically, these techniques cause the back wheel to rotate at a constant velocity, rather than wow's and stab's of power associated with 'pushing'. Uneven power will reduce traction, because not only will it increase the initiation of slippage, but the coefficient of friction states that once the wheel starts to slip, it'll keep slipping.



One more pearl of wisdom is to 'carry your speed'. I've got disc brakes for the first time this year and usually run v-brakes. I've been really slow to adopt discs, because I don't really use my brakes much, so can't really see how I'll benefit. Even with some pretty full-on XC and 24-hour races over the last couple of seasons, I'm still on the same brake pads that I purchased 2 years ago. Why bother working your backside off to build speed, just to scrub it off again? I don't get it – it's a waste of energy. Obviously there are times when you've got to hit the brakes, so I don't want to encourage Kamikaze riding, but just think before you touch the brakes. Could you perhaps ease off the power through the drive-train slightly earlier and just allow the bike to slow down of its own accord? This will save you energy. Do you have to go so slowly around that bend or can you realistically keep rolling? Can you take a clever racing line through a bend to shorten the distance and reduce its sharpness? Something to think about, because I reiterate – we've got a long way to ride and every bit of energy you can save will ultimately allow you to recover quicker and travel faster.

Finally, how about your tyre pressure? I maintain that the best invention on the Mountain Biking scene in recent years is the tubeless tyre (or using a tubeless system of some kind). This makes lighter wheels that can run at lower pressures to improve traction and handling (you reduce power-drain and can ride bends faster). They're more comfortable and forgiving and they're very difficult to puncture (and in fact re-seal if you run latex gunk in them). The argument against lower pressures is increased rolling resistance, but let's face it, off road there are a huge number trail conditions that increase rolling resistance anyway, so this is far less of a factor than if you were on the road. In my opinion, the benefits far outweigh the disadvantages.



Photo – Evan Jeffery

With regard to tactical preparation, I only have two and I can't believe I'm telling you what they are, because I'd like to keep them to myself, but what the hell! If you find this useful, buy me a drink of water while we're out there and we'll call it quits. The first is simply to suggest that the fittest member of the team should carry more stuff. If you've got food and emergency equipment to carry, load up the fast guy. I won't insult your intelligence by attempting to explain why?

My second suggestion is to 'slip-stream' your fastest teammate where appropriate. On flat or moderate downhill sections or even on long drags into the wind, the weaker rider should sit behind the stronger rider. You will save up to 30% of your energy if you slipstream effectively, so it will even you up considerably. The combined effect of these two tactics are that you'll cover the Terra Australis route much more quickly as a team and at the end of the day, you'll both feel like you've had a proper workout...