



It's All About Rhythm

By Glenn Mills

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Are fewer strokes *always* better? Is a longer stroke *always* more efficient than a shorter one? Is gliding between strokes *always* the best way to gain efficiency in swimming?

The answer to all of the above is NO.

Stroke count, stroke length, and glide are important in swimming, but the overriding KING of efficient swimming is *rhythm*.

If you take too few strokes per lap, you lose your rhythm and flow. You give the water an opportunity to build up too much friction and slow you down. If you glide too long between strokes, you lose too much momentum and then have to work hard to *regain* your speed. Remember that old physics lesson (or was it the couch-potato's rule): A body at rest tends to remain at rest. Simply put, if you're not propelling yourself forward in the water, you're slowing down.

The best way to avoid slowing down is to make sure your body is streamlined and horizontal, allowing it to cut through the water with as little drag as possible. Once you've mastered an efficient body position, you'll want to go FAST. That's where rhythm comes in. And cadence.

A versatile swimmer can go fast at various rhythms and stroke cadences. For example, when a swimmer wants to swim a really fast 100 free, she will use one rhythm. If the same swimmer wants to swim a fast 500 free, she'll use a slightly slower rhythm and cadence. Put her in an Ironman, and she'll need yet another cadence in order to perform her best. What's clear is that the swimmer needs to feel comfortable at several DIFFERENT cadences, and that she needs to develop more than one gear for her freestyle.

This holds true for any stroke. When I swim a 50 breaststroke, I use a gear that spins FASTER than the one I use for a 200 breaststroke. If I swim breaststroke across the

Chesapeake Bay, I'll be using a gear that spins SLOWER than the one I use when I race my 10-year-old twins across the backyard pool. In my training, I'm constantly experimenting with stroke rhythm and cadence, so that I become comfortable with different rhythms, and so that I can find the optimum cadence for each race distance.

I've found that the Tempo Trainer is ideal for helping me expand my "gear box" for each stroke, and to systematically find my optimum cadence for each distance. The Tempo Trainer is an electronic training device, about the size of a fat poker chip, which you can slip inside your swim cap or attach to your goggles. It transmits an audible beep, and you can adjust the frequency of the beep. It's kind of like a metronome for jocks. For example, if you want a hand to enter the water every 1.07 seconds (that just happens to be one of my optimum rates for freestyle), you can set it for that... or for any tempo you want. The Tempo Trainer makes it really easy for me to focus my attention on my stroke, and what my body is doing, without having to count strokes or sing the same rock song over and over again to keep a steady rhythm with my strokes. All I have to do is choose a beep frequency and GO SWIM.

I'm still experimenting with the Tempo Trainer, but here's an example of a practice set that I've done to develop more gears in my freestyle, and to home in on my optimum cadence for a 50 free. You could do the same type of set based on 100s or 200s – or based on any stroke.

The set is 4 x (4 x 50) free on :45 (yes, that means 16 x 50s free). If a :45 sendoff is too fast for you, choose a sendoff that gives you about 10 seconds rest after each 50. I do this set in two different ways. I either bring DOWN my time and make my stroke cadence FASTER, or I INCREASE my time and make my stroke cadence SLOWER. I usually start my Tempo Trainer at a tempo of 1:07 (one and seven-tenths second) per stroke. This is where the fun begins.

Let's say I'm going to try to make my stroke longer. I'll be increasing the time on the Tempo Trainer to make it a longer interval in between strokes. So the first four 50s would be a base set with the Tempo Trainer set @ 1:07. On the next four 50s I would set the Tempo Trainer @ 1:12. On the next four 50s, I would set it @ 1:15, and on the final four 50s I would set it @ 1:17. I try to maintain the same speed (measured by how long it takes me to swim each 50), regardless of the tempo or cadence of my stroke. You can see that I decrease the increments toward the end of the entire set. That's because, if my stroke cadence is slower than one stroke every 1.17 seconds, I'm not really swimming – I'm waiting SOOOO long between strokes that I slow down too much...and then have to work too hard to get moving again. The benefit of slowing my cadence to 1:17, however, is that after all this slow stroking, when I reset the TT back to 1:07, EVERYTHING feels like a piece of cake. At the slow, 1:17 cadence, I have to focus on *everything* in order to hold my speed. I have to focus on my balance and rotation, and on how my hands anchor and pull. I have to *reawaken* the hidden parts of my stroke.

The other thing that I learn when I try to swim fast at a slower cadence is that I don't like my stroke too long for a 50 free. At a slower cadence I lose so much speed between

strokes that I have to work EXTRA hard on each stroke to maintain my speed. This makes my heart rate go up.

If I do the 4 X (4 X 50) set the other way, that is, make my stroke rate *faster* on each of the four 50s (1:07, 1:02, :97, :92), then it becomes *easier* to hold my speed. BUT...at :97 and :92, my heart-rate is way up there again because I'm spinning my arms so fast. Again, when I get back to my 1:07, it just feels right, or much better.

If you want to try this set for yourself, your first question will be: How do I know what cadence to start with? The answer is that you have to experiment first. Just choose any random setting on the Tempo Trainer, within a range of, say, :90 to 1:20. Swim a lap or two and see how you feel. Then try another setting, and continue until you feel the cadence is comfortable and that you're *flowing* through the water. Then try the 4 X (4 X 50). You may have to do the entire set a few times until you hit your optimum cadence. The key to finding your best cadence for your goal event is *experimentation*. Don't *always* swim at what you think is your optimum cadence. You want to end up with many gears that you can use in many different events. If you are a competitive swimmer, you want to be completely spent when you finish your race – whether it's a 25, 50, 100, or 200. The bigger your gear box, the more versatile you'll be. If you are a distance swimmer, you'll still need a big gear box, but must learn to adjust your speed within a more narrow range of stroke cadences. If you are an open-water swimmer, you need to find a cadence that you can maintain ALL DAY LONG. If you are a triathlete, you want to find a sustainable cadence, and perhaps one that lets you use your upper body more.

With these things in mind, swim standard sets while varying the number of strokes you're taking per lap, or by increasing or decreasing the cadence of your strokes. After a few weeks, you'll figure out exactly where you need to be in order to accomplish your goal swim.

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