

# FINE-TUNE YOUR CRAWL PART 4

After three months of ingraining good technique into your body, it's time to switch focus. Now it's all about getting in the rhythm. Here's Glen Walker...



**Glen Walker**

was fifth out of the water at Ironman Hawaii'83. He now runs the swim offering from Tribal MSP online and lives in Chobham, Surrey.

Welcome to the fourth and final part of our front-crawl swim series.

We're hoping that you've revelled in the first three parts and have identified some noticeable improvements that you can make. But before we move onto the aim of this feature – refining rhythm and flow – let's recap what we've learnt so far:

**Part 1**

Balance and streamlining to minimise resistance and, subsequently, increase your distance per stroke (DPS) without expending energy 'fighting' the water.

**Part 2**

Correct application of power to maximise your 'engagement' with the water, so increasing your DPS.

**Part 3**

A relaxed recovery to minimise energy loss during the 'unproductive' part of the stroke and to set you up for a good early catch, which should help increase your DPS further.

So, up until now, our focus has been on lengthening your DPS. And that's as it should be, because without a DPS of at least one metre you'll struggle to get near the nirvana of a 25min 1,500m swim.

If you can swim one metre per stroke, it'll take you 1,500 strokes to cover an Olympic- distance swim in open water. You'll therefore need a consistent stroke rate of one stroke per second (1,500 strokes ÷ 60secs = 25mins) to make that happen. While all this is true, it's also only half of the equation...

The yin to the DPS yang is rhythm and flow (R and F). R and F is key for all swimmers, but particularly so for triathletes who often come to swimming later in life and spend an awful lot of time trying to master complicated drills. The result is they hone a mechanical stroke that leaves them crawling through the water like a laboured automaton.



Good streamlining and balance, combined with rhythm and flow, are the key to faster swim times

# Swimming Golf

The following table illustrates a triathlete's swimming statistics for each 50m section. They went on 1:15min. You can apply this method to measure your progress.

| Rep | Stroke Count | Time (secs) | Total | Par +/- | Observations                 | Focus for next rep         | Perceived effort (1 = easy, 10 = hard) | Heart rate (bpm) |
|-----|--------------|-------------|-------|---------|------------------------------|----------------------------|--|------------------|
| 1   | 40           | 45          | 85    | Par     | Comfortable                  | Fewer strokes              | 6                                      | 130              |
| 2   | 38           | 49          | 87    | +2      | Too long gliding             | Swim faster                | 7                                      | 140              |
| 3   | 44           | 40          | 85    | -1      | Increased HR; slipping water | Keep elbows up             | 8                                      | 150              |
| 4   | 41           | 41          | 82    | -3      | Still slipping               | Relaxed hands              | 7                                      | 140              |
| 5   | 39           | 39          | 78    | -7      | Hands heavy                  | Swim faster                | 6                                      | 130              |
| 6   | 41           | 44          | 85    | Par     | Was moving head around       | Keep head still            | 6                                      | 130              |
| 7   | 39           | 39          | 78    | -7      | Head still                   | Apply more force to water  | 6                                      | 130              |
| 8   | 38           | 38          | 76    | -9      | Hands felt heavy             | Repeat but increase SR     | 5                                      | 120              |
| 9   | 39           | 37          | 76    | -9      | Too aggressive at exit       | Soften the finish a little | 7                                      | 140              |

## Initiating Momentum Perfect combination

The reasons rhythm and flow are so integral to a good stroke are related to drag and momentum. Since we can't swim on top of the water we must swim in it, and as we all know it's a very thick medium compared to air. Almost 1,000 times more dense! So if we take excessively long strokes and glide in between, the friction slows you down and we lose momentum.

To overcome the drag we have to use excessive force to regain momentum. A good analogy would be pushing a car. It may take three people to get it moving but, once it's going, it'll take just one person to maintain momentum. Stop pushing and you'll need three times the energy to get it moving again. On the opposite side of the coin, but with the same end result, is excessive stroke rate. If your arms are going like crazy but you're slipping the water, it may seem like you're going fast but you're actually only travelling at the same speed as 'Mr pretty long strokes' in the next lane. What makes matters worse is that you're using twice the energy.

So what is the best mix of DPS and stroke rate? Sadly, this is the swim equivalent of "How long is a piece of string?" It's something there's just no formula for. It's not about how tall you are; whether you're male or female; weigh 120lb or 220lb; your degree of upper body strength; your aerobic capacity; your lactate tolerance; your degree of flexibility... But, at the same time, all of these things are important contributing factors.

It sounds like a cop out but you should simply aim to develop a stroke length and a stroke rate that are right for you. Both will become more efficient as your swimming technique progresses, but usually at different times. For example, if you become more competent at swimming with a high elbow, which in turn places higher loads on the muscles of your shoulders, the higher the lactate build-up may cause you to lose stroke integrity earlier. So, even though you now have the ability to go further with each stroke, you'll have to wait for your fitness levels to catch up. And when they do, you'll be able to swim faster for longer.

### Jargon Buster

**Stroke integrity:** Maintaining good technique when under pressure, both physically and mentally.

**On:** A set time for swimming a certain distance, which includes work time and rest. For example, on 1:15min could equal 50secs work plus 25secs rest.

**Rhythm:** Similar to biking cadence, this is all about getting into a repetitive pattern. Consistency is key.

**Flow:** Similar to rhythm but less mechanical. Focuses on the smoothness of the stroke.

The only way to discover the right mix for you is to experiment. But you can only do this when you have some degree of integrity in your stroke. You need to be competent enough to be able to maintain a given stroke count for at least 10mins – we'd suggest you have established a stroke length of 1m per stroke for men and 0.9 for women. (Allow 3- 4m for the push off.)

Before you think we're going to leave you hanging, there are several ways to find your best SL/SR balance...

## I. Swimming golf

Warning up front: this involves a bit of mental arithmetic – not always easy when you're working near your maximum heart rate! Here's how it works...

Add your stroke count to your time for a given distance to give you a score (par). Now try to lower that score by reducing your stroke count and/or time. You may initially try to lower your par by using fewer strokes, but the glide that crept in between strokes caused your time to increase by 4secs when you only reduced stroke count by two. The overall effect being a slower, albeit more efficient swim.

The table entitled Swimming golf (see page 2) will allow you to benchmark your swims and give yourself some real feedback. It's particularly gratifying when you change something which, although may not have felt comfortable, yielded a drop in stroke count, time, perceived effort or all three. When this happens you know you're doing the right thing. There's even a perverse pleasure when the opposite happens and it all goes pear shaped because you now know not to do that again.

## 2. Swimming ladders

Swim four single lengths to establish a stroke count. Add the stroke counts and divide by four to find your average for the set.

Then swim 20 x 1 lengths as below with 10-30sec rest intervals depending on your fitness level. Repeat one, two or three times as required. For the purpose of this benchmark, A = average as established by the first four lengths as above.

Let's say that A = 19 strokes per length. On the first length you're aiming for A-1 (18 strokes), on the second length A-2 (17 strokes) and so on down the ladder. You then work back up again until you're back where you started. Then, add strokes to the length (A+1, A+2...) and work up and back down until you once again return to the starting point. You won't always be able to add or subtract strokes but that really isn't the point. The object is (on the way down) to change one thing per length that improves your efficiency, for example head position, elbows up or fingertips down and so on.

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## The Holy Grail of Sessions

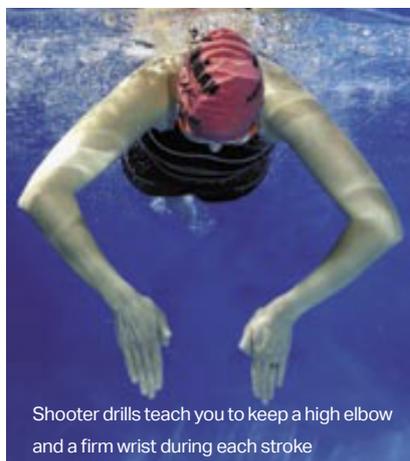
This is one of the best sessions out there for developing feel, rhythm and flow in your front crawl. (See parts 1, 2 and 3 for drill descriptions and Fistglove information.)

### Warm-up

(Swim with your fists if you don't have Fistgloves available from Tribal)

Rebound practice (see part 1). Bobbing practice (see part 1).

- 2 x 1 length nose-down torpedo with snorkel.
- 2 x 1 length nose-down arms extended with rotation. Extending arm goes 10-15 cm (4-6in) deep as your body (hips and shoulders) rolls.
- 4 x 1 length shooters (see part 2). Focus on maintaining high elbows throughout the action.
- 8 x 1 length alternate shooters. As above but with emphasis switched to the elbows of the individual arms. Also, make sure you see your hand under your face before making the simultaneous catch and drive (with the recovering hand) and turn of the hip.
- Rebound practice. Bobbing practice. (Use your hands – Fistgloves off)
- 4 x 1 length shooters. Focus on maintaining high elbows throughout the action.
- 8 x 1 length alternate shooters. As above but with the emphasis switched to the elbows of the individual arms. Also, make sure you can see your hand under the face before making the simultaneous catch and drive and turn of the hip.



Shooter drills teach you to keep a high elbow and a firm wrist during each stroke

### Main set

(Swim with your fists if you don't have Fistgloves available from Tribal)

- 40 x 1 length on 60secs (less if the pool is shorter than 25m). Begin with your Tempo Trainer set to a rate that is as close as possible to your current stroke rate and, if you feel in control, reduce by 1/100th every length. If you feel that you're chasing the beep or your stroke's becoming ragged, then maintain the tempo until you feel confident enough to decrease the time again. Repeat as necessary. Here's the breakdown of the 40 lengths:
- 1-12 – Fistgloves, snorkel and Tempo Trainer (TT).
- 13-20 – snorkel and TT.
- 21-24 – just TT, breathing every fourth stroke to your comfortable side.
- 25-28 – snorkel and TT.
- 29-32 – just TT, breathing every fourth stroke to your comfortable side.
- 33-36 – snorkel and TT.
- 37-40 – just TT, breathing every fourth stroke to your comfortable side.

Note: maintain stroke length at a minimum of 1m per stroke (0.9m for the ladies).

### Technique focus

During the 40 x 1 there are four things that you should focus on. You should focus on these one at a time and not let anything else enter or disturb that focus:

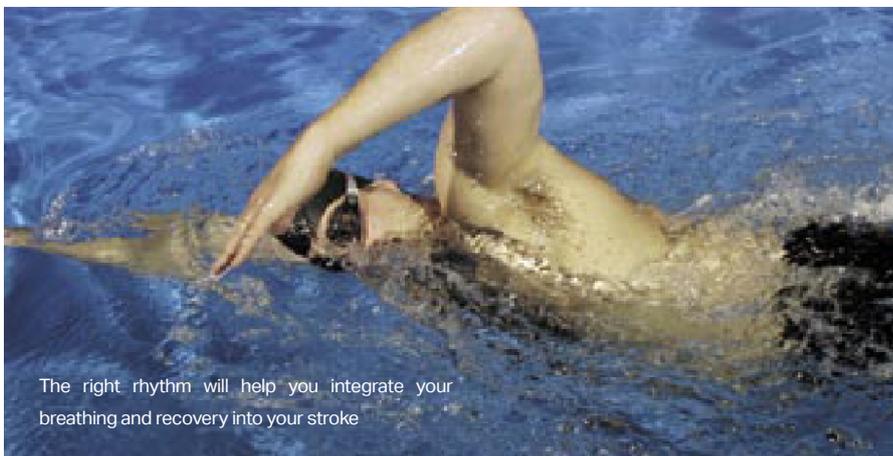
1. **Front Quadrant timing or  $\frac{1}{4}$  catch-up:** Your leading arm stays out in front (weightless and slippery) until the fingertips of your recovering hand enter the water. At this point you drive the recovering hand forward by rotating your hips and gaining a strong hold/catch with your leading hand and arm.
2. **Entry point:** Make sure you enter the water halfway between your head and your extended arm at shoulder width. Enter with your middle finger first and your elbow higher than your shoulder.
3. **Connect:** Extend your leading arm forward until your shoulder connects to your cheek. Keep your head perfectly still unless breathing.
4. **Give it up at the back:** The last 10-15cm (4/6in) of the underwater phase should soften in preparation for a smooth, elbow-led recovery. Lead the recovery with the back of your hand. Remember: the recovery is 'curvilinear' – the first half, until entry, is a quarter curve. The action on entry is to drive forward at shoulder width to make the connection as in point 3.



The Tempo Trainer is a great gadget for ensuring you stick to a pre-determined stroke rate

### Practical pointers

- As your competency increases, this rate will steadily come down but do not be tempted to start the next session with the rate you finished with on the previous session.
- Challenge your stroke integrity at higher rates but do not become a 'slave' to the beep and follow it blindly. Make sure you are always (just) in control of it.
- Everyday will be different. Some days you may have to start slower; on others you may get the rate up higher. Expect this and you won't be disappointed.
- Always, always do your best to maintain the integrity of your stroke. If your stroke count goes up by more than two or three per length, then slow down the rate, sort out the DPS and then try to lower the rate systematically once more.
- Don't reduce the TT by more than 1/100th at a time unless you got it very wrong at the beginning.



The right rhythm will help you integrate your breathing and recovery into your stroke



Good connections: keep driving your stroking arm forward until your shoulder connects with your cheek



Practise getting streamlined in the water with nose-down torpedo drills (see part 1)

### Progressions

Note: only move to the next point when you feel comfortable; only change one thing at a time

Breathing:

- Start as above by breathing every four strokes to your normal side.
- Breathe every third stroke to alternate sides.
- Breathe every second stroke.
- Breathe every fourth stroke to your less comfortable side.
- Return to every third stroke.
- Every second stroke to your least comfortable side.
- Back to every third.
- Breathe on every second stroke to your left on the odd lengths and to the right on the even lengths.

Remember: though your overriding goal is flow and rhythm, and although it's nice to be able to breathe comfortably to either side, it's not the end of the world if you don't.

### Distance and time

1. When you feel comfortable, reduce the interval time by 5secs. Do this until you're doing the set on 35sec intervals.
2. When comfortable at 35secs for 25m, increase the distance to 50m and increase the time to 80secs. Reduce the set to 30 x 50m.
3. Reduce the interval in 5sec increments, again until you're down to 60secs.
4. Increase the distance to 100m and the time to 2:20mins. Reduce the set to 15 x 100m.

5. Reduce the interval in 5sec increments to 2mins.
6. Increase the distance to 200m and the time to 4:40mins. Reduce the set to 10 x 200m.
7. Reduce the interval in 5sec increments to 3:50mins.

# TRIBAL Swim Coaching

On the way back up, retain the things that improved your efficiency but gradually increase your stroke rate. For example...

A-1; A-2; A-3; A-4; A-5; A-4; A-3; A-2; A-1;A-0; A+1; A+2; A+3; A+4; A+5; A+4; A+3; A+2; A+1; A+0.

What you're looking for here is the stroke length where you feel fast but also like you could swim forever – the equivalent of the runner's high. It's likely to be the rate that lets you feel the most 'at one with the water'.

### 3. Tempo Trainer

The Tempo Trainer is a waterproof metronome that's used to set the rhythm of your arms. It's attached to your goggles or placed under your hat and produces an audible beep. You can set the timer to beep anywhere between 0.2 and 10secs and subsequently time your hand entry to the beep. There's also another mode that can be used to set intervals in the absence of a pace clock.

As a coach, I absolutely love the Tempo Trainer. It keeps you focused and ensures you remain rhythmic and flowing in the water. But, best of all, it allows you to develop your 'gears' in the water in much the same way as a cyclist can switch gears to go faster.



With a bit of practice, you could easily be in the top 10% of triathletes exiting the swim

## Be positive

All the practices above will lead you to a more coherent stroke, obtaining the feel, rhythm and flow to partner your DPS. One more practical method to improve all four is by integrating the workout in the Holy Grail of sessions box (page 3) into your weekly training programme. You'll need to have read the previous three episodes to understand the drills.

As we've stressed throughout this four-part series, there's no such thing as a perfect swimmer – they don't and will never exist. There are great swimmers though, and every year they spend thousands of hours trying to perfect and control the minutiae of their stroke to find a tenth of a second that will make the difference between gold and nowhere at the next Olympics.

But here's the good news: you are a triathlete. All you have to do is swim under 25mins for 1,500m and you'll be in the top 10% of swimmers out of the water at pretty much any race in the UK. And that's a very achievable target provided you don't become overly obsessed with swimming technique. Keep it simple. Don't try to run before you can walk. Master balance and streamlining; develop the propulsive phase; relax in the recovery phase; and crank up the rhythm.