



TEMPO TRAINER PRO REFERENCE GUIDE

FINISinc.com



A NOTE FROM TIM ELSON

The Tempo Trainer Pro (TTP) is a popular, simple waterproof metronome that emits a beep corresponding to designated increments of time. When used correctly, swimmers are capable of learning a consistent, rhythmic, evenly-paced swimming style that carries over phenomenally to racing. The Tempo Trainer Pro has the ability to supplement the most creative and challenging workouts to help swimmers improve performance. We recognize that often the hardest part of using this device is getting started with specific workouts. In this reference guide, we hope to offer advice and insight from well-respected swimming minds to fully explain this device and optimize its usage.

Years ago in the swimming world, maximizing distance-per-stroke (DPS) was the real buzz phrase. In reality, DPS by itself does not mean anything - even the longest, most beautiful stroke in the world will not be successful without the appropriate stroke rate.

There are infinite uses for the Tempo Trainer Pro and we welcome new suggestions for implementation every day. The potential for a tool that allows swimmers to find optimum balance of stroke rate and stroke length is truly limitless.

Thank you for your interest in the Tempo Trainer Pro. To learn more, contact your local FINIS representative or visit FINISinc.com.

Warm Regards,

Tim Elson
Vice President

FEATURES & BENEFITS

ADJUSTABLE

Tempo adjustable by 1/100th of a second

PERFECT FOR PACING

Eliminates lulls during workouts and races

3 MODES

Single beep, triple beep, strokes/strides per minute
**More detail on next page*

MULTIPLE SPORTS

Applicable for swimming, biking, running and more

CONVENIENT SIZE

Easily secures beneath a swim cap or goggle strap



SYNC BUTTON

Synchronize to a pace clock or stop watch

REPLACEABLE BATTERY

Extends lifespan

AUDIBLE BEEP

Loud enough to hear in and out of the water

DRYLAND CLIP

Removable clip secures to clothing



LEARNING THE BASICS: 3 MODES + SAMPLE SETS

SYNC BUTTON

Pressing the Sync button (in any mode) will reset tempo and synchronize the TTP with a pace clock or interval.

MODE 1

Allows swimmer to set a tempo using a very specific amount of time, down to 1/100th of a second. These small adjustments can translate into big changes in stroke length and efficiency over time.

SAMPLE SET 1:

1 x 25 Freestyle - Set at 0.40 seconds

- Hand hits the water every 4/10th of a second
- This is a high turnover for most people

1 x 25 Freestyle - Set at 0.80 seconds

- Notice the difference in speed
- Reach and rotate, paying attention to DPS
- After observing a slower and faster pace, swimmer can find the ideal setting for stroke efficiency

1 x 25 Freestyle - Set at 0.42 seconds

1 x 25 Freestyle - Set at 0.78 seconds

Continue adding and subtracting 2/100th of a second per 25 yards/meters until swimmer finds the perfect combination of stroke rate and DPS to elevate quality of swimming.

SAMPLE SET 2:

4 x 25 Dolphin Kick - Set at 0.45 seconds

- Keep up with the tempo while kicking evenly in both directions
- Emphasizes the up-kick and strengthens core and legs
- Using the FINIS Foil monofin enhances this drill

LEARNING THE BASICS: 3 MODES + SAMPLE SETS

MODE 2

Allows swimmer to set a pace adjustable by full seconds rather than fractions of time. This mode is most commonly used as a pacing tool for longer swims or during sprint sets to determine benchmarks. Ranges from 1 full second to 9 minutes and 59 seconds.

SAMPLE SET:

- For a goal pace time of 1 minute per 100 yards/meters, set the TTP to triple beep every minute
- Set TTP to triple beep every 15 seconds to make sure pace is on track every 25 yards/meters
- Try 100's, 50's and 25's at this pace
- Perfect pace training for a taper workout

MODE 3

Calculates strokes-per-minute. Set the desired number of strokes-per-minute and the TTP will automatically calculate how often to beep at that rate.

SAMPLE SET 1:

- Instruct swimmer to start using their desired stroke rate, set TTP to reflect pace
- Hold this pace for an extended period of time, anywhere from 10-30 minutes
- Simulates a distance race pace that is ideal for open water swimmers, triathletes or Endless Pool training

SAMPLE SET 2:

- When training for a 200 yard/meter event, use the TTP to practice consistent pacing for 50 yard/meter segments
- Set the TTP to the desired pace for a series of 50's to maintain consistent speed while focusing on technique and feel



For the most secure fit while swimming, place TTP beneath swim cap.



USING CRITICAL SWIM SPEED (CSS)

BY PAUL NEWSOME OF SWIM SMOOTH

On January 13, 2012, 127 athletes from Swim Smooth Perth Squad were tested for Critical Swim Speed (CSS) pace per 100m using the 400m and 200m time trial method. A 10-week CSS Development Program was then designed with the goal of improving swimmers' performance by reducing the CSS time per 25m by 0.5% a week. The FINIS Tempo Trainer Pro was used as a way for swimmers to accurately control pace. The swimmers' typically swam 2 to 3 times per week averaging 2.5km to 4km per practice. One session each week focused on adapting to progressively faster CSS times. 79% of the swimmers reduced their CSS time by an average of 3%. The greatest improvement was an impressive 14%!

Swim Smooth Perth Squad continued implementing the FINIS Tempo Trainer Pro into swimmers' workouts for the next five months to accurately gauge pace over a set distance. The TTP was set to beep once every 25m, i.e. to swim 1.40 per 100m, it should be set to beep every 25 seconds (4 x 25 seconds = 100 seconds = 1.40). The red world record line overlaid at the Olympics is a good way to help visualize this – viewers are able to watch how pace can be the make-or-break during competition and long-term improvement.

A great feature of the TTP is that it can set pace precisely down to 1/100TH of a second, opposed to full second increments. CSS pace might seem easy at first for swimmers who are experienced with interval training. However, it is important to remember that interval training typically involves rest and recovery sets. CSS develops a strong 1500m pace by reducing recovery and focusing on the energy systems that are used in distance swimming, not sprinting.

On the next page are the key steps highlighting the ideal 10-week CSS Development Program.

STEP ONE

Complete a 400m and 200m time trial then calculate CSS starting pace using the calculator at www.swimsmooth.com/training or the free App, Simulator+, created by Steve Casson (Swim Smooth-Certified Coach).

STEP TWO

Calculate 10-week CSS Development Program using the spreadsheet at http://www.swimsmooth.com/pauls_images/CSS_Development.xlsx or by simply reducing 25m CSS target by 0.15 seconds per week.

STEP THREE

Dedicate one practice each week to training with the Tempo Trainer Pro. Warm up with 600m to 1000m; be sure to include drill progression and descending sets to get heart rate up. Start the "Control Set", 6 to 10 x 100m, holding each CSS pace and taking 1 beep recovery between intervals. The challenge here is pacing accurately as the pace will initially feel slightly too easy.

STEP FOUR

Use the sample sets (right) outlined by week as the main set in a workout.

For more information on Paul Newsome's 10-week CSS Development Program, please visit www.swimsmooth.com

WEEK 1: 2-BEEP RECOVERY SET	<ul style="list-style-type: none"> • 200m • 300m • 500m
WEEK 2: 10 SECOND RECOVERY SET	<ul style="list-style-type: none"> • 10 x 100m
WEEK 3: 3-BEEP RECOVERY SET	<ul style="list-style-type: none"> • 2 x 500m
WEEK 4: 2-BEEP RECOVERY SET	<ul style="list-style-type: none"> • 4 x 100m @ 3 seconds recovery • 3 x 100m 4 seconds faster • 2 x 100m 5 seconds faster • 1 x 100m SPRINT!
WEEK 5: STRAIGHT SET	<ul style="list-style-type: none"> • 1 x 1000m
WEEK 6: 1-BEEP RECOVERY SET	<ul style="list-style-type: none"> • 200m • 300m • 500m
WEEK 7: 1-BEEP RECOVERY SET	<ul style="list-style-type: none"> • 400m • 100m • 400m • 100m
WEEK 8: DESCENDING RECOVERY SET	<ul style="list-style-type: none"> • 2 x 200m @ 2-beep recovery • 3 x 200m @ 1-beep recovery
WEEK 9: 2-BEEP RECOVERY SET	<ul style="list-style-type: none"> • 400m • 300m • 200m • 100m
WEEK 10: 1-BEEP RECOVERY SET	<ul style="list-style-type: none"> • 100m • 200m • 300m • 400m



ONE TOOL, COUNTLESS SOLUTIONS

BY TERRY LAUGHLIN

I am a confirmed minimalist when it comes to training tools. You will never see me using a pull buoy, paddles or kickboard. However, I value one tool so highly that if I could only choose one, it would be the Tempo Trainer Pro (TTP). Here is why I would choose the TTP over a pace clock or sports watch:

TTP IMPROVES RHYTHM

Consistent rhythm is an essential skill of successful swimming. It is the quality that harmonizes various elements of the stroke.

TTP TEACHES ACCURATE PACE

A sense of pace is usually thought of as a trait you already have or acquire through endless repetition. The TTP is a fast and almost effortless way to keep distance-per-stroke (DPS) consistent and synchronize to the beep. If DPS and tempo remain steady, so does pace.

TTP 'CRACKS THE CODE' ON SPEED

Save a stroke or a few hundredths of a second in tempo—you swim faster. Add a stroke to any length and your pace will slow down. Pretty soon you have a constant, clear awareness that any pace is the certain result of a particular strokes-per-length (SPL) and tempo. Once you realize this, you will never again make the mistake of thinking that how fast you swim depends on how fast you stroke.

TTP ALLOWS COMPLETE CONCENTRATION

Swimmers usually leave one end of the pool thinking mainly about getting to the other end. The TTP teaches swimmers to experience every length as a series of precisely timed intervals. A tiny stroke error is noticeable in that exact instant; it costs an extra stroke - an extra second- to reach the other end. These errors are almost always the result of a moment's inattention. This is powerful motivation to stay focused.

TTP CHOOSES SPEED WITH MATHEMATICAL PRECISION

The physical ability to choose and improve pace and speed leads to the psychological sense that you have complete control over it. This creates a huge boost to confidence and motivation.

TTP TRAINS THE NERVOUS SYSTEM

When practicing with the TTP, you learn how quickly your nervous system can adapt to the right stimulus. There is often a noticeable adaptation to a particular pace in as little as 10 or 15 minutes. When you begin using it, you find yourself making thrilling progress in just a week's time.

SAMPLE SETS:

The sample sets below were done in a 50-meter pool and include tempos and stroke counts. Stroke counts will be lower in a 25 yard/meter pool. Swimmers may adjust tempo or chose to cut the repeat distances in half (i.e. substitute 10 x 25 for 10 x 50, or 25+50+75+100 for 50+100+150+200).

SET #1: CONSTANT DISTANCE, INCREASE TEMPO

Problem: Stroking faster is the universal response when swimmers try to increase speed. However, as stroke rate increases, swimmers typically move water backwards instead of propelling themselves forward. This causes the swimmer to tire easily and makes it difficult to get faster.

Set:

10 x 50 @ 1.19-1.10 (Mode 1)

- Increase tempo by .01 each 50
- Count strokes-per-length (SPL) and rest 10 beeps between swims
- This set teaches swimmers to keep stroke length constant while increasing stroke rate. Focus on SPL as tempo increases.

Results:

35 SPL @ 1.19 (45.3 seconds)

37 SPL @ 1.10 (44.0 seconds)

ONE TOOL, COUNTLESS SOLUTIONS

BY TERRY LAUGHLIN

Two extra strokes would have resulted in a slower time – a common mistake when swimmers stroke faster.

At 1.19 tempo I had a sense of leisure in each stroke. As tempo increased each 50, I focused on that same sense of relaxation and timing for each stroke. The small .01-second increment made this easy to do. Even though the tempo changed considerably over 10 x 50, the repeated small increase allows your nervous system to easily adapt.

SET #2: CONSTANT TEMPO, INCREASE DISTANCE

Problem: Try to maintain a constant SPL during a practice. This is particularly valuable for distance swimming.

Set:

50+100+150+200 @ 1.10 (Mode 2)

- Count SPL and rest 10-15-20-25 beeps between swims
- This set teaches swimmers to minimize change in average SPL. Focus on the feel of your stroke and keeping average SPL within 1-2 strokes.

Results:

- Started at 38 SPL; never exceeded 39 SPL
- Pace was almost the same on the 200 as on the 50
- Teaches swimmer the feel of a certain SPL so that it can be easily repeated

Regardless of whether I am swimming a single length or 20 lengths in a row, my thoughts are only to execute strokes of unvarying quality and match each to the beep of the Tempo Trainer Pro. The result is that I swim at a constant pace yet my thoughts never stray from the stroke I am taking.

For more information on Terry Laughlin's training program, please visit www.totalimmersion.net



For the most secure fit while swimming, place TTP beneath swim cap.

REFERENCE CHARTS

BY ERNIE MAGLISCHO

Whether you are a swimmer or coach, these charts enable helpful, instant guidelines for determining stroke rates of every event.

For more information, please visit www.FINISinc.com/Tempo-Trainer-Pro or refer to the publication, "Swimming Fastest", by Ernie Maglisco.

CHART 1		
	MODE 1 SEC/STROKE	MODE 3 STROKES/MIN
MEN		
50 Free	.45 - .54	56 - 67
100 Free	.60 - .54	50 - 56
200 Free	.59 - .70	43 - 51
400/500 Free	.65 - .79	38 - 46
800/1000 Free	.70 - .77	39 - 43
100 Back	.63 - .57	48 - 53
200 Back	.68 - .71	42 - 44
100 Breast	1.08 - 1.15	52 - 55
200 Breast	1.43 - 1.58	38 - 42
100 Fly	1.07 - 1.15	52 - 56
200 Fly	1.11 - 1.33	45 - 54

CHART 1		
	MODE 1 SEC/STROKE	MODE 3 STROKES/MIN
WOMEN		
50 Free	.44 - .50	60 - 65
100 Free	.54 - .57	53 - 56
200 Free	.56 - .63	48 - 54
400/500 Free	.55 - .71	42 - 55
800/1000 Free	.56 - .68	44 - 54
100 Back	.54 - .60	50 - 56
200 Back	.71 - .75	40 - 42
100 Breast	1.13 - 1.28	47 - 53
200 Breast	1.33 - 1.76	34 - 45
100 Fly	1.07 - 1.15	52 - 56
200 Fly	1.11 - 1.33	45 - 54

CHART 1

Lists the range of stroke rates for male and female world class swimmers in each event.

CHART 2

Standard stroke rate conversion table with three different modes.

CHART 2		
MODE 3 STROKES/MIN	MODE 1 SEC/CYCLE	MODE 1 SEC/STROKE
20	3.00	1.50
21	2.86	1.43
22	2.73	1.36
23	2.61	1.30
24	2.50	1.25

CHART 2		
MODE 3 STROKES/MIN	MODE 1 SEC/CYCLE	MODE 1 SEC/STROKE
25	2.40	1.20
26	2.31	1.15
27	2.22	1.11
28	2.14	1.07
29	2.07	1.03
30	2.00	1.00
31	1.94	0.97
32	1.88	0.94
33	1.82	0.91
34	1.76	0.88
35	1.71	0.86
36	1.67	0.83
37	1.62	0.81
38	1.58	0.79
39	1.54	0.77
40	1.50	0.75
41	1.46	0.73

CHART 2		
MODE 3 STROKES/MIN	MODE 1 SEC/CYCLE	MODE 1 SEC/STROKE
42	1.43	0.71
43	1.40	0.70
44	1.36	0.68
45	1.33	0.67
46	1.30	0.65
47	1.28	0.64
48	1.25	0.63
49	1.22	0.61
50	1.20	0.60
51	1.18	0.59
52	1.15	0.58
53	1.13	0.57
54	1.11	0.56
55	1.09	0.55
56	1.07	0.54
57	1.05	0.53
58	1.03	0.52

CHART 2		
MODE 3 STROKES/MIN	MODE 1 SEC/CYCLE	MODE 1 SEC/STROKE
59	1.02	0.51
60	1.00	0.50
61	0.98	0.49
62	0.97	0.48
63	0.95	0.48
64	0.94	0.47
65	0.92	0.46
66	0.91	0.45
67	0.90	0.45
68	0.88	0.44
69	0.87	0.43
70	0.86	0.43
71	0.85	0.42
72	0.83	0.42
73	0.82	0.41
74	0.81	0.41
75	0.80	0.40

TESTIMONIALS

I love using the Tempo Trainer Pro, it is a great way for me to reset my stroke count and make sure I am working at the correct pace. When I am having a tough training set it really helps me maintain the focus on pace and stroke count, so I can maximize my workout.

—NICK GRAINGER, 2015 WORLD CHAMPION

Since the origin of the FINIS Tempo Trainer Pro, the device has been an integral part of our swimmers' development. We use the TTP on a daily basis, for all groups and levels, to help our swimmers become much more intelligent and aware of their stroke rates. By utilizing the TTP in conjunction with stroke counts and splits, coaches can achieve dramatic results with higher quality training in a very cost-effective manner.

—RON HEIDARY, HEAD COACH, ORINDA AQUATICS

The Tempo Trainer Pro is really effective in setting up my ideal stroke rate in the water. What makes it even better, is that I also get to use it while running to set up the perfect run cadence, which is vital in triathlons.

—HENRI SCHOEMAN, PROFESSIONAL TRIATHLETE

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