

Coaching Model and philosophy for BIRKENHEAD SWIMMING CLUB incorporating TRAINING YEAR PLANS for teaching and skill development level.

There are five factors involved in the overall performance of a swimmer and each can be specifically though not exclusively trained for. There will always be an overlap at the very least between adjacent areas if not on a wider basis on occasions. These areas are also interdependent on one another to some extent and must be utilized together to produce good racing performance. They all need gradually and progressively to be built up to provide the swimmer with the optimum chance to reach as high a standard of performance as they can.

1. Technique (Skill) [REC, EN1, EN2]

The ability to perform the strokes/starts/turns in a mechanically sound and efficient manner, with as little waste of energy as possible, on a continuing basis while fatigued. The maximum proportion of energy should be directed to propelling the swimmer forward. Achieved by specific coaching (and lots of reminders!!!) and by working with drills during swimming fitness work. This is a long process and can only be achieved with the active help of the swimmer, they must accept the need to change the stroke, do the drills or change consciously for some weeks/months before the change will become embedded as the preferred movement pattern.

2. Basic Swimming Endurance (Endurance) [EN1, EN2, EN3]

The bottom line!!! The speed a swimmer can maintain over continuous swimming or short rest repetitions is directly decided by this level of fitness. This factor is most susceptible to improvement and has to be worked on to a major extent throughout the year. Improvement is achieved by swimming at and above threshold pace. Basically this is what we test in T20s and use to grade our lanes. It is not effective to break these types of set with extra rest or going to the toilet etc., as this will almost certainly negate any positive effect from the set.

3. Basic Swimming Speed (Maximum Speed) [RP + weights/land training]

The swimmer's ability to swim as fast as possible over a short distance. It is in proportion to strength and how good the swimmer's stroke mechanics are. Improved by skill work, weight training and sprints at maximum effort. The stroke used in these sets should be the one that we wish the swimmer to use, long, good stroke mechanics and keeping hold of the water, beware the thrash when instructing on these sets! i.e. Lots of energy expenditure, but hardly any of it propelling the swimmer forward.

4. Swim Speed Endurance (Lactate tolerance/production) [SP1, SP2, SP3]

The ability of the swimmer's muscles (and some would say brain) to withstand the accumulated acidosis that results from swimming above threshold pace. Training for this area makes heavy demands on the swimmer and is not done in any quantity until they are maturing and have a good volume of basic swimming endurance "under their belt". Achieved by repetition training; high intensity, medium recovery. Got to do it and it hurts, encourage all the time, use sets that reduce in distance or kid the swimmer another way that the set is getting easier. Time the swims if the same length and feedback to swimmer to hold the pace.

5. Pace Judgement (Correct speed) [SP2, RP]

This area is enhanced by using the pace clock and by the use of decreasing sets, timed by the coach, with feedback to the swimmer allowing them to gauge how accurate their own pace is becoming. Define the pace you want and feedback to the swimmer, too fast is a problem as well as too slow, we want the swimmer able to control and know their pace.

The above factors need to be combined at the correct time and in the correct proportions to ensure that they have the optimum effect on each swimmer's performance as they progress through our squads and lanes.

Factors for maximum effect of training sessions

Warm up should be 10 minutes long and virtually or actually continuous swimming, normally allow 5 minutes at end of the session for swim down or spare time to complete the session if running behind. Combine this with stress on the basic push & glide, underwater kick, streamlining essential to all good strokes. Standard warm up to be used.

In every session and at all levels there should be one set that aims to markedly improve basic swimming endurance (EN3), this must be done above threshold pace and last at least 25 minutes. It will normally consist of a set of swims between 50 (+20) and 200 (+1:00).

In every senior/intermediate session there should be a lactate set (with only four sessions a week and less than 100% attendance, there is no problem of recovery). It will normally be race distance or close to it with rests at 1x or 2x swim time, eg 5x100 on 3mins from a dive flat out.

Where possible, in sessions of more than 1 hour, recovery REC or EN1 sets should follow an EN3 or lactate SP set before any more hard work. All other sets should be at endurance levels EN1 or EN2 and incorporate some skill development, except for the odd sprint set RP.

Skill development should not be done individually. If it really is necessary to improve a skill with one swimmer at a time; set the others a practice to do in the lane. Eg If doing tumble turns one at a time, tell other swimmers to do breast stroke turns to deep end, change the one swimmer once done. If diving find a way to have a continuous return and retry, by using outer lanes for instance.

Planning the swimming year

Year is broken up into five, ten week cycles (cycle 5 is longer to allow for Xmas break & club champs)

For year	Cycle 1	Cycle 2	Cycle 3	Cycle 4	Cycle 5
2017	02 January	27 March	29 May	31 July	09 October
2018	01 January	12 March	21 May	06 August	15 October
2019	01 January	11 March	20 May	05 August	14 October
2020	06 January	16 March	25 May	03 August	12 October
2021	04 January	15 March	24 May	02 August	11 October
2022	03 January	14 March	23 May	01 August	10 October
2023	02 January	13 March	22 May	31 July	09 October
2024	01 January	11 March	20 May	29 August	17 October

Inside each 10 week cycle is the same cycle of skill improvement and fitness load increasing gradually over the 10 weeks. Eg:

Week	1&2	3&4	5&6	7&8	9&10
2017 Date	31.07.17	14.08.17	28.08.17	11.09.17	25.09.17
Emphasis	IM	Butterfly	Backstroke	Breast	FC

The starts and turns should be completed inside the part of the cycle dealing with that stroke. Cycle to increase in effort over the ten week cycle, this is done by increasing distance swum, reducing rest, increasing swimming speed and increasing repetitions. All the above skills should be incorporated into fitness sets wherever possible, be inventive about this! And don't forget to keep reinforcing what you've taught all the time!

Attached please find a training table initially prepared for the candidates for the club coach award. The different types of session and the parameters of that session are defined here, please utilize in accordance with the guidance given above.

Name of type	A1	A2	T	VO2	Lac Tol	S+P	Lac P	HVO
Description	Recovery and warm-up REC	Basic Endurance EN1	Threshold Endurance EN2	Overload Endurance EN3	Lactate Tolerance SP1	Race Practice SP2	Lactate Production SP3	Max Speed ATP-CP RP
RATIOS Work/Rest	>8:1	>6:1	Varies 2:1 or 3:1 @ 100 7:1 or 10:1 @ 400	2:1 or 3:1	1:2 or 1:3	Variable	1:4 or 1:5	>1:12
% of max speed	>70%	70 - 80% 2 - 4 seconds per 100 slower than threshold	80 - 85% at threshold pace	85 - 90% 1 - 2 seconds faster than threshold	95%	Variable	98%	100%
Heart rate average	120+	130 - 150	150 - 180	180 - 200	190 - 200	190 - 200	180 - 200	160 - 180
Beats below max	60	50	15-20	10-15				
Total set distance	Variable	2000 - 8000	2000 - 4000	1500 - 2000	300 -1000	Race dist x ?	200 - 500	200 - 300
Total set time	Variable	20-120 minutes	30 minutes	20 minutes				
Work element duration	20 - 120 mins				1-3 minutes	Race time	40-90 seconds	10 - 15 seconds
Repeat Distance	Virtually continuous	Any	25 - 3000	50 - 2000	25 - 200	Race distance or less	25 - 100	10 - 50
Rest Interval	Very short	5 - 30 seconds	10 - 45 seconds	30 - 90 seconds	50s 30-60secs 100s 1-3 mins 150s 3 - 5 minutes 200s 4 - 6 minutes	+5 - +20 at splits 2 - 5 mins between sets Active recovery	50s 1 - 3 minutes 100s 2 - 5 minutes Active recovery	10-30 secs 15s-1 min 20s-1½ mins 50s- 3 mins Active recovery
Number of reps	Variable	Many	Any	Any	Multiple sets of 6-8 for 25 or 50s One set of 4-8 for over 75s	3 - 6	3 - 6	10s 20-30 20s 6-10 50s 3-6
Swimmer exertion! Scale of 1 - 20	<14 very comfortable	14/15 Comfortable	16/17 Working hard	18/20 Very hard	19/20 Very, very hard!!	18/20 Very Hard	18/20 Very Hard	Plenty of recovery
Stroke	Any	Mainly FC & BC using stroke & stroke drills	FC IM 1 st stroke	FC IM 1 st stroke	All	Race stroke	All	All
Example sets	1500 mix swim, pull, kick	8 x 400 +30	24 x 100 +30	6 x 200 +60	5 x 100 on 4 mins	3 x 100 +5@ 25 No 1 stroke On 4 mins	8 x 50 on 3 mins	10 x 25 dive on 3 mins