Surf Swimming

Coaching Manual 5th Edition

Contents

Surf Swimming - Technique

Surf swimming, like its still water counterpart, is a technically demanding sport. Unlike still water swimming, surf swimming can be termed an 'open skill' as the water conditions are not controlled and are constantly changing. The swimmer must adapt to these conditions. Each person's technique will differ markedly depending on his or her body type, flexibility and 'affinity' with the water.

Unlike many other disciplines, absolute power and strength are of little value to any person if their swimming technique is not efficient in the 'wet' part of the stroke. This is where the arm is driving through the water, as opposed to the recovery part of the stroke. This has been evident with a number of elite level Olympic swimmers displaying somewhat unorthodox techniques in the recovery part of the stroke, yet still managing to record fast times due to their wet stroke being more technically correct.

Listed below are three phases the swimming stroke can be broken into. The first phase, includes the hand entry, glide and catch. This phase is considered to be the most different between surf and still water swimming techniques. In the surf the swimming stroke is completed in turbulent water, making it essential for the swimmer to complete this phase precisely if they are to set up the remainder of the stroke correctly and efficiently.

Detailed information on the basic skill of swimming and technique analysis can be found in swimming specific manuals. References for these manuals are listed in the reference section at the beginning of this manual.

Phase 1:

Hand Entry

- The fingertips should enter the water first with the hand flat or facing slightly outwards
- The hand should enter in line with the shoulder on the same side and should not cross the midline
- The fingers are not allowed to fold over when hitting the water, but the hand, arm and shoulder should be relaxed

The Glide

- Once the arm has entered the water, the arm and shoulder should be pushed forward but should not cross the midline of the body at any stage
- The leading arm should not be straight throughout the glide, but remain partially bent at the elbow
- The arm and shoulder should remain relaxed but should not be allowed to 'break' or 'fold' to improve the streamlining of the arm and to avoid excessive bubbles around the hand
- The swimmer should start to roll the body further towards a side-lying position

The Catch

- As the opposite arm is commencing the release part of the stroke, the forward arm should be commencing the catch
- The wrist is held firm and flexed downwards keeping the elbow bent
- The body should continue to roll to be able to successfully transfer the weight of the stroke onto the larger muscle groups around the torso (i.e. shoulder, back and chest muscles)
- The catch is important because it sets up the rest of the stroke, and is especially important in surf swimming due to the turbulent nature of the water

Phase 2:

Downsweep

- With the elbow still flexed, the hand is accelerated downwards and slightly outwards
- At this point, maximum body roll should be achieved
- The hand is held flat or very slightly cupped and should not be allowed to bend

Insweep

- After the downwards sweep of the hand, the hand commences an inward path
- The hand is brought back towards the midline but should not cross the midline of the body
- The arm achieves maximum flexion of approximately 90º directly beneath the line of the same shoulder
- The body should be almost lying flat in the water at this stage of the stroke

Acceleration

- From the mid part of the stroke, the hand is accelerated towards the feet
- The body should start to roll the opposite way following the opposite hand, which should now be entering the water in the hand entry phase
- As the hand accelerates to the end of the stroke, the elbow extends to a straightened position at the end of the stroke

Phase 3:

Release

- Once the elbow is straight the hand should be in a position where the thumb is touching the outside of the thigh and should be facing upwards
- The body should continue to roll in line with the "catch" phase of the stroke of the opposite hand

Recovery

- The recovery part of the stroke may be altered to suit the prevailing surf conditions z A normal relaxed high, bent arm approach may be employed in smooth conditions z A more forceful straight arm recovery style may be used in rough or very choppy conditions
- This part of the stroke is of the least importance technically but is still important in terms of energy efficiency and conservation
- Whatever recovery style is employed, the shoulder, arm and hand should be as relaxed as possible

General components:

Body Position

- A streamlined position should always be maintained to ensure optimal efficiency in the water
- The swimmer should not allow their bottom and legs to drop down, and a horizontal position should be maintained in the water at all times
- The body should not be allowed to twist, or deviate from side to side. Swimmers should visualise a line running through the length of their body, which they should rotate around.
- The body should be allowed to roll freely in order to effectively transfer the weight of each stroke onto the more major muscle groups around the torso
- The head should not roll with the body
- A steady head position looking forwards and downwards should be held while the body is allowed to roll from side to side

Kick

- The feet should not be pointed and should be horizontal or flat and face slightly inwards
- A "6-beat" kick (6 kicks to every stroke) should be used for sprint swimming

- A “4-beat” kick (4 kick to every stroke) should be used for longer swims
- Surf Swimming Technique - Drills

Breathing

- A bilateral breathing style is preferable in surf swimming so swimmers can see both sides of the field and oncoming waves
- The breath commences with the head turning as the opposite arm glides towards the catch phase
- As the catch commences, the head turns and breathes
- The head should return to the neutral position as the recovery hand passes directly over the shoulder and the ‘wet’ hand passes under the shoulder

Swimming Technique Checklist	Yes	No
Fingertips enter the water first, with the hand in line with the shoulder and not crossing the midline		
The swimmer allows the body to roll towards a side-lying position, transferring the weight of the stroke to the larger muscle groups		
Maximum body roll should be obtained as the arm is accelerated down and outwards (downsweep)		
The hand is accelerated towards the feet from the mid part of the stroke onwards		
When the stroke is completed and the elbow is straight, the thumb should touch the swimmer’s outer thigh		
The swimmer’s body should continue to roll into the opposite side-lying position for the next stroke		
A streamlined position should be maintained by the swimmers at all times		
During the kick, the feet are horizontal and not pointed towards the bottom		

Drills

- Surf swimming drills can be completed in the pool, flat open water or in the surf
- Drills should be a part of every session regardless of the training location
- All drills should be aimed at strengthening and correcting / improving the different phases of the surf swimming technique
- Surf drills can be done initially in small surf (for wave catching) or in a river or bay setting (for wading and porpoising to ensure that the correct technique is learnt from the beginning)
- Surf drills in more testing conditions should only be done once they have been satisfactorily completed in smaller surf
- For pool drills, catch up or layout freestyle can be used. This is where the stroke rate is decreased and each subsection of the technique can be worked on
- “Sculling” techniques, where swimmers only kick and make small circular movements with their hands to propel themselves forward are useful to help swimmers get the feel of the water
- Kick and pull buoy sets in the pool can also be used to help focus on that particular area of their technique

Drills Checklist	Yes	No
Drills are done in every pool and every surf swimming session		
Use of sculling technique in the pool to help the swimmer gain a better “feel” for the water		
Swimmer’s surf skills and drills are initially completed in small surf and progressed later to more testing conditions		
Kick and pull buoy sets used to concentrate on improving specific areas of technique		

Training Sessions

Swimming technique is the major component that determines the speed of the swimmer, most of the sessions should be done in a swimming pool. This allows the swimmer's technique to be improved and worked on as their endurance, speed and cardiovascular fitness levels are improved.

A yearly coaching strategy for a surf swimmer should follow a step-by-step periodised approach that allows the athlete to build an adequate level of fitness and endurance followed by speed, while always ensuring that technique is of paramount importance. Training programs will need to be individually tailored to the athlete depending on such variables as their age, past competitive experience / years of training and the motivation to train. The training program will also have to take into account the ability of a person to access any or all training facilities or training times, especially if they have outside work, school or university commitments.

Out of all the surf lifesaving disciplines, swimming is the one that is most affected by an athlete having time off after the competitive season. The usual decrease in fitness levels and gains in weight affects the swimmer more than other athletes because it changes their body position in the water. This can affect the 'feel' a swimmer has for the water. Serious swimmers should have only the most minimal time off (for example, two weeks) after the finish of the competitive season. This does not mean that the athlete has to return to full training straight away, but they should be kept at around three sessions per week in the pool of relatively light intensity and low to moderate duration in order to help them retain their feel for the water and also help to reduce any weight gains.

A 48 - 50 week yearly periodised program can be developed by structuring the swimmer's training around the outlines given below with time frames varying depending on the competitive level of the swimmer and their motivation to return to training.

Base Preparation: (32 - 38 Weeks)

- Transition (4 - 12 weeks)
- General Preparation (12 - 20 weeks)
- Specific Preparation (8 - 12 weeks)

Competition Phase (12 - 16 Weeks)

- Early / Pre-Competition phase (8 weeks)
- Main competition Phase (4 - 8 weeks)

Base Preparation (32 - 38 Weeks)

Transition

- Incorporate as many different activities as possible to help avoid physical and mental burnout (i.e. boxercise, aerobics, mountain bike riding, etc.)
- Specialised programs to help overcome any diagnosed weaknesses or injuries should be implemented here
- Re-evaluation and establishment of future training and competition goals can be set after considering the previous year's results and outcomes
- Can include some 'sport-specific' skills and drills such as porpoising in the pool or touching the bottom at intervals during long swim

General Preparation

- The intensity during the general preparation phase should be kept from low to medium (i.e. <75% MHR)
- The duration of training loads and volumes can be progressively increased to high levels once the athlete has adapted to the current training levels (i.e. the periodised approach)
- Emphasis should be placed on the development and maintenance of technique at higher training volumes and intensities, with any major faults being corrected
- The progression of the general physical capacities (endurance, speed, strength, etc) should be emphasised in this early phase
- z No progression in any physical capacities should occur at the expense of correct swimming technique
- z This phase can also start to incorporate some surf swimming sessions at the beach if weather and other conditions permit

Specific Preparation

- Training volume and intensity are progressively increased to mirror those required in a surf race
- Emphasis from general preparation to more sport specific preparation
- More sport specific drills (i.e. surf drills) should be implemented
- Development of skills and/or physical capacities will vary depending on the need of the individual (i.e. may need more skills work, or may need more fitness and speed work)
- This phase can build on previous work done in the surf. 2 - 3 sessions per week may be done in the surf for an hour or more

Early / Pre-Competition Phase

- Intensity should remain high, while training volumes may be reduced
- Maintenance of the physical capacities (i.e. endurance, speed) obtained throughout the year should occur
- Technique should be maintained to an optimal level and should be evaluated under race conditions
- Skill levels are important. Drill sessions can be effectively used to increase a swimmer's skill level and act as a recovery session

Main Competitive Phase

- There could be a refinement of technique if necessary, although no major changes to technique should occur in this phase
- Both low intensity/medium duration and high intensity/low duration sessions can be used
- Implementing recovery sessions can help the athlete's body prepare for the cycles used leading into the more major competitions
- The "taper" or "race preparation" should be used very sparingly if it is to be successfully implemented
- When at competitions, long warm ups and warm downs should be completed

Competition

Training Checklist	Yes	No
Only minimal time off after a competitive season to help maintain the swimmer's feel for the water		
A transitional phase which employs numerous cross training activities should begin the season		
Re-evaluation of previous season's results and next season's goals should be established in the transitional phase before planning and commencing a more serious training regime		
Yearly program to be based on a periodised plan for all components (i.e. speed, endurance etc.)		
Technique is of most importance throughout the year as it directly relates to swimming speed		

The following sections of a surf race have been broken down so each section can be analysed and worked on individually. Training sessions should also work on the transitions between all sections and not just on each section alone. Simulating a race start, a "sprint out the back", or back into shore are excellent ways of practicing the overall components of the surf swim race.

Starting

- Take note of the water depth and how many paces can be taken before wading and/ or porpoising
- Check for pot holes, rocks or other places to avoid
- Check the direction of the current
- Adopt a stance similar to a standing (crouching) running start with weight on the front foot.

Wading

- Clear the knee from the water at the side so the thigh is horizontal to the water.
- Swing the leg around to the front keeping the thigh horizontal to the water.
- When the leg comes around the front, throw the foot out and place onto the sand ready for the other leg to repeat the process.
- Shoulders move from side to side to help the legs clear the water.
- Arm movement is similar to running only higher and wider for balance.
- Wading along a shallow sand bank or river is a good way to learn correct technique.
- It is also important to run in and out of the surf to get used to such variables as an uneven bottom, potholes, waves and an unexpected change in the water.


Porpoising

- The swimmer wades until the water is at waist depth or they are no longer able to wade effectively
- The swimmer drives off the legs diving forward going to the bottom at 45o.
- The swimmer digs their hands into the sand
- Bring the feet forward to where the hands are and drive forward pushing off with the legs coming up at 45o
- After surfacing take a breath, bring the hands forward and repeat the motion without pausing


Diving Under a Wave

Dive deep and early, the wave should not hit your feet

- Dig hands into the sand and pull yourself to the bottom
- Stay close to the bottom and hold on with hands and feet until the wave has passed
- If it is too deep breaststroke down as deep as possible
- When the wave has passed, push upwards with feet or breaststroke and dolphin kick to the surface
- Surface hands first


Riding a Spilling Wave

- Swim flat out; once you feel a lift from the wave start one arm paddling with a high leg kick, applying your weight on the stationary hand
- Once on the wave:
  - apply your weight on both hands which are out in front
  - continue with a high kick
  - keep your body rigid
- To take a breath turn your head to the side and take a stroke with one arm

Riding a Plunging Wave

Once on the wave hold back so as to come down the wave with or behind the foam by placing the:

- Arms under the body, pushing on the hands
- Head up, feet slightly down to drop weight back
- When you drop to the bottom of the wave:
- Take a butterfly stroke to help stop the fall
- One arm swim (or paddle) and high leg kick till out in front of the foam

Catching a Broken Wave

Catching a broken wave is THE hardest skill for any surf swimmer to master but it can often mean the difference between winning and coming in mid-fi. When attempting to catch a broken wave the swimmer should try and increase their speed by increasing their stroke ratio and by changing to a 6-beat kick. The goal is to match the speed of the wave and also to get the body as high in the water as possible prior to the wave hitting.

A good technique for helping gain this initial push from the wave is to lift up one foot only moments before the waves hit the swimmer so that the downwards kick of the swimmer is actually against the wave. As the wave hits put one arm out in front applying weight to the hand.

Key Points:

- Increase swimming speed before the whitewater hits by increasing stroke rating and changing to a 6-beat kick
- Goal is to be travelling at same speed and to be as high in the water as possible when the whitewater hits
- Lifting a foot just prior to the whitewater hitting so that downward kick pushes off the wave itself can be a useful way to help gain that extra push from the wave and keep the arms free to pull through
- Catching a broken wave is the hardest skill to perfect and so should always be practiced when doing any surf based swimming sessions or skill sessions

Directional Strategies

The swim events differ from other surf life saving disciplines in that the competitors normally cannot see where they are going for more than a few split seconds at a time, both on the way out and on the way in. For this reason it is often useful to pick out large landmarks on or behind the beach (i.e. tents, trees, buildings) that line up with the finishing flags, allowing the swimmer to head in the correct direction.

Large landmarks can also be used by the swimmer to know where rips, holes and sand banks are, for the best place to come in through the break, or places to avoid. This strategy can also be used if the first turning buoy is hard to see whilst swimming. The swimmer can look behind, back to the beach, at a large landmark that is in line with the first turning buoy to check if they are roughly on the correct course

Key Points:

- The swimmer picks out landmarks on or behind the beach to aim for that are directly behind the finishing flags
- Landmarks or markers are also picked to indicate rips, holes or rocks around the swim course to help indicate the best possible direction for both the journey out to the buoys and back to the beach
- Markers behind the buoys or landmarks on the beach which line up with the first turning buoy are noted

Making a Race Plan

This is due to the fact that surf swimming is somewhat unique in that the swimmers are not really able to see where they are going and have to rely heavily on landmarks and fellow competitors (who may also be off course!). Prior to the race the swimmer and coach should devise a plan. The best way is for the swimmer and the coach to sit in or near the competition arena and watch as many races as possible preceding their event. This allows an analysis of the directional strategies used by other swimmers and to gauge their success. Ideally, this should be done before each and every race, or failing that, as conditions change

For example, after watching several races in the arena your swimmer is about to compete in, it may become clear that there is a benefit in running along the beach to take advantage of a rip rather than entering the water directly in front of their starting position. Or, maybe those who are swimming in the rip are receiving no real advantage. It is only through observing several races that trends will become apparent

To aid in the swimmer's understanding of how the water is moving the swimmer should note the speed and direction of the current by standing in the water. Where possible the warm up should be completed in or next to the competition arena. This may often be difficult to do especially due to restrictions at major competitions.

Therefore, a light swim or warm up before the first event of the day is an excellent way to test the prevailing conditions within the competition area.

A unique separator between surf swimming and still water swimming is how a competitor should approach the race. In still water swimming, most swimmers attempt to 'negative split' where the second half of the race is actually faster or equivalent to the first half. In surf swimming, swimmers are expected to start the race as fast as possible to avoid being caught in the pack, and to have the first chance at the waves after turning the buoys.

Key Points:

- Both swimmers and coach watch as many races before their own race to analyse the success of directional strategies used by other swimmers
- A race plan should be developed by the swimmer and the coach after watching previous races
- The current and conditions of the day should be tested in the competitive arena, and as close to race time as possible
- Competitors should aim to start the race as fast as possible

Warm up / Warm Down

All the best laid plans and training efforts can be undone if the swimmer is not ready to exert maximal effort once the gun is fired. This can be difficult as competitors can be marshalled and required to wait in a pre-race area without being allowed the opportunity to complete another warm up. It is for this reason that a full and extensive warm up must be completed before the swimmer is marshalled for the event. After this point, stretching and loosening up/preparation exercises can be completed to keep the swimmer as 'race ready' as possible.

The same problems and difficulties can also be encountered between races if there are several on the same day or multiple races in a small interval. For this reason it is advisable to complete a 'warm down' to help remove the build up of lactic acid and keep the swimmer prepared for the next race

Warm Up	Warm Down
Dynamic and passive stretching routines	Static stretching
Short burst sprints	Light massage
Exercise routines	Warm clothing/ not being allowed to cool down
Swimming pulleys/ cords	Walking/ very light jog (active recovery- no more than 5-10 minutes)

Equipment

Usually, the surf swimmer has to worry about little other equipment than that which they race in (club cap and costumes). If goggles are chosen to be worn they should be checked to ensure that they are in working order. Goggles should also be worn during training, so the athlete is comfortable with them under race conditions. If a swimmer competes in belt races they must ensure that the reel is in good working order, the line is not tangled or frayed and is clean from sand and grease. The belt itself must be in proper working order with the harness straps free from any tears and the quick release pin and holder in the waist strap of the belt are working correctly.

Key Points:

- Swimmer has team / club costumes and club cap and back-up pair if necessary
- Goggles are in good working order. Straps not likely to break and pieces not leaking
- Competition cap strings are not frayed or torn
- Belt, line and reel are clean, free from any damage and in correct working order
- Belt straps are not frayed or torn
- Quick release pin on belt is fully functional