

### **Pacing a canoe slalom race run.**

Prior to racing it is a good idea to test what pace is achievable for a race run. It is vital that the athlete has a very good idea of what overall speed is possible and has a good feel for what level of fatigue is acceptable while still being able to perform at a high technical level. If the athlete goes off the start line too fast it is often seen that they will not make the entire run without fading badly towards the end. On the other hand, if they go off too slowly they will give away vital time that they cannot make back later in the run. Problems with fatigue can lead to catastrophic errors in both technique and judgement. The only way to achieve efficient pacing is to practise different strategies and this will vary considerably from course to course.

Probably the most basic and widely used strategy is going off the start line hard and trying to hold on when fatigue sets in later in the run. This sometimes works on easy technical courses or even where there may be technical difficulties at the top of the course and the end is relatively easy, but in many cases it leads to disaster. [One only has to look at international 800 metre running event to see that this rarely works to produce the best time, even in a comparatively none technical event.] It is not just a question of physical fatigue but also of mental tiredness during the run. The athlete often tries to perform extreme moves and makes errors and bad decisions or just changes the run plan because "it seemed like a good idea at the time". With hindsight, these decisions are often viewed as stupid, but at the time an oxygen-starved brain plays tricks with an otherwise rationale brain that any other time makes generally correct decisions. This means it is not a great idea to have to make major technical and line decisions during the run, this is not to say that plan "B's" and reactions do not come into play often in a major way, but plan as much as possible of what can be planned and stick with it. If deviations from plan and mistakes are made, accept it and get the run back on track, its rarely a good idea to try to make up for any mistakes by changing the plan for the rest of the course. A key word to use here could be "NEXT" to focus the mind on what is to come and keep the run going, there is plenty of time after the run to think about what happened.

One problem when working on pacing is that physical fitness and particularly anaerobic fitness and power can be quite different at various times of the year depending on what training phase the athlete is in. This is not to say pacing of race runs cannot be worked on at any time of year, but it does mean that final assessment of possible strategies for a particular event can only be fine-tuned in the final peaking period prior to the event. This is because this will be when the athlete should be at their best physically, technically and mentally.

If firm decisions about pacing are made while the athlete is in a heavy training phase and consequently when the athlete is tired, they will probably tend to resort to a conservative pace and result in under performance. Good pacing of a run is probably one of the most difficulty things to get right, but it is one of the most vital components of great race day performances. It is also something all but a few elite slalom athletes get right. The aim is to use all the attribute the athlete has to the best of their ability, to push as hard as they can where it is technically and physically efficient to do so, but not to blow up or run out of gas in the process. At top level elite, athletes are very closely matched in terms of physiological

attributes, it is the athletes that use these in the most efficient way that will more often prevail.

The fact is that any race run will consist of hard and light paddling and gliding, where no additional paddling is of any benefit. Race pacing can be part of any technical; whatever the length of the course. Ask what return do you get and for what physical exertion? Also balance this with the risks of technical mistakes. The aim of technical development work needs to be, not only to find ways to go fast, but also to find ways to do it efficiently in terms of the power and energy used. With the use of video, times and assessment of exertion on runs it is relatively easy to see what returns are gained and for what effort. A common conclusion is that if the boat does not go any faster on a certain gate sequence or sprint with more power, then why try to make it do so? The ultimate run will never be zero, point zero, zero, every move will take some time to perform. If the boat does go faster with more power, ask whether it is of major benefit in terms of the run as a whole. Every stroke used on the course will have a cost in terms of fatigue it is basically a matter of assessing the benefits of each one. Ultimately it will be a question of informed judgement to find out what works best for each individual athlete. When assessing the race course be aware that there are many places where full power will not produce time gains and may well lead to technical difficulties. This is often the case on approaches to tricky upstream gates, where accuracy and controlled glide into the gate is often favourable. This can also apply to approaches to difficult offsets and many other more technical moves.

The primary use of any physical effort should always be to keep the boat on the planned line. Once that is achieved then it should be to power the boat fast on that line. If too much exertion is done too early on, or too greater power applied during the run, the primary demand to keep the boat on the planned line will not be achieved later in the run and questions need to be asked about the level of exertion being used.

Maintaining momentum is almost always favourable to slowing and having to reaccelerate which is costly in energy. It can take a lot of work to re-accelerate up to a reasonable speed and may take many meters to do so. A good demonstration of this is to have one boat sitting still and another to cruise past, as both boats come into line the static boat starts, it will be seen that the already moving boat has a tremendous advantage. Smoothness of stroke and turning the boat during the run is almost always preferable to a jerky style of paddling, gentle use of edging if also preferable as this also helps maintain momentum. The gentle and intelligently controlled application of power strokes can aid with the economy of effort during the run. When the boat needs to turn apply only enough power to make the required arc at speed, too much will simply overturn the boat which simply requires more effort to correct and will also translate into a loss of time and energy. Acceleration away from up-streams, particularly tight ones with tight exits is often essential and the use of a short burst of power is often needed to get the boat up to speed, but be careful not to extend this application of power for too long. Quick changes of strokes in upstream gates, which aid rotational momentum, can give a good advantage.

Momentum is King! Crosses and places where the boat is effectively on a tread mill are definitely places where speed is essential as the less time spent paddling against the current the more of a return for effort is gained than when paddling downstream, as while going

downstream the boat will always be on its way to the finish line. Experiment on loop courses of three to four laps that total around ninety- seconds. Take split times, try different paces and analyse the results. Take the most account of the results of the first runs of any session as this will be the one that most compare to a race-run. This is because the first qualification run and the semi-final race-runs are done without practice on the course and also because this is when the athlete will be at their freshest. Keep a close eye on how fatigue affects any particular technique, look for anything that breaks down on a regular basis when tired. The final grooving of any technique work should include testing it in a fatigued state, until this has been done the technique has not been fully learnt or tested. Ask if there needs to be a difference in technique if a hard move is either at the beginning of a course or at the end, there almost certainly will be, define what this is? Try splitting full runs into split sections of thirds or quarters for times and experiment with various strategies. Try even-pacing and try building the intensity and pace steadily throughout the run. The steady building of intensity through the run has often produced very good results as it allows for good control throughout the run but also finishes with the athlete fully exerted at the end of the run, thereby often making full use of the athlete's physical abilities.

Another session to work on for pace development is to split a full length course into various section and have a short rest between them. This allows the athlete to go a little faster than a normal full run but still it is practised in a state of fatigue. The length of rest between sections can be varied to either allow more speed or increase the endurance demands of the session. Care needs to be taken to not try and progress in physical demands at too faster rate as this type of training can take a great toll on the body.

The easing of pace within the run, prior to a technically difficult section, is another option that can be used to good effect. This essentially gives a short break within the run and if done on a fast downstream section little time will be lost, if any, and the returns for performing well or not blowing out a technically difficult section can be great. This is best done by maintaining forward paddling for control, but reducing the amount of power to each stroke, these are sometimes called filler strokes.

The final strategy for any athlete will very much depend on their technical ability, levels of fitness and above all their confidence and ability to paddle difficult courses in a state of serious fatigue. Their strategy will certainly depend on the position of the gates and other difficulties of any particular race course. Many athletes can perform great moves as part of short course workouts but not so many can produce anything close to this when very tired towards the end of a race-run. For this reason, it is questionable what benefit there is in doing a lot of short course technique and speed-work. It certainly has its place in any training program but it is often over-used and can produce an over-confidence in technical ability, due to it being very different to doing moves as part of a race run, as a large proportion of any race-run is performed in a state of fatigue.

Many events are won or lost for various reasons but a main one is technical errors due to fatigue and this can often be avoided by better judgement of pace. When an athlete has performed well they often feel they could have gone harder, I always wonder if they really would have done better for it!

Thank you for the input and discussions with Campbell Walsh (Olympic Silver Medallist) and Danielle Molmenti (World and Olympic Champion) in the writing of this article.

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