

Slalom E-Book

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Section III - Technique

Introduction

This section presents some technique videos to study, which the British Canoe Union has kindly allowed us to use, as well as some other runs found on the internet. But before we get to those, here is some preliminary information that affects technique, some things to think about as you study the videos.

Essential Facilities

In order to work on technique (or on the other aspects of your training, for that matter), you'll need certain facilities. Unless you have them, all the hard training in the world may not be enough.

Since it is not easy to find all these facilities all in one place everywhere in the world, you may need to think hard about how to solve this problem, particularly if you want to become very good at this sport. You may have to move, for example.

Here is a listing of those facilities, listed by stage of the athlete's development:

BEGINNER

Definition: From learning the very basics until you can complete an easy class III whitewater course without missing any gates, even though you may not do them all directly and may make some loops. You may not be fast and you may take a lot of penalties, but they're all "inside touches" (that is, you're inside the gate when you hit) and you don't take any 50s. Ideal age for starting the sport is 10 years old or less and under ideal circumstances a boater might reach the upper limit of beginner at around age 14-15.

Ideal facilities:

- * In the first year, (the assumption is you're 10 years old or less at this stage), access to a boat and equipment whenever you want it. But after that, you own your own boat and equipment.
- * A coach who is very knowledgeable about slalom and its technique. That includes a thorough understanding of how to progress youngsters through their development to advanced athletes.
- * Access to video.
- * Access to easier beginner races.
- * Chance to watch good boaters.
- * Chance to be in workouts with at least good intermediate boaters.
- * Frequent access to class II whitewater gates as opposed to just flatwater gates.
- * Access to whitewater race courses, preferably artificial courses, at least once or twice a week.
- * Learn more than one canoeing or kayaking discipline.
- * A parent or club or someone else who is willing to drive you around a lot.
- * Appropriate strength/power training for the athlete's age. For instance, a 10 year old beginner has a different capacity than a 16 year old beginner.
- * The whole program is viewed as a great source of fun. This may be something the coach has to oversee, making sure the kids have a lot of fun with friends, both in the boat and out of the

boat.

Minimum facilities.

- * In the first year, access to a boat and equipment whenever you want it. But after that, own your own boat and equipment.
- * Access to flatwater gates 3-4 times a week.
- * Someone to watch, guide you. Doesn't have to be a slalom expert or a real coach, but just someone who is motivated to help you and to learn about the sport -- maybe a parent.
- * Access to class II, maybe class III whitewater on weekends.
- * Videos of someone good to watch.
- * The whole program is viewed as a great source of fun. This may be something the coach has to oversee, making sure the kids have a lot of fun with friends, both in the boat and out of the boat.

INTERMEDIATE

Definition: From being able to complete a class III whitewater course without missing any gates to starting to race internationally, say, in ICF class C races, Junior World Championships, but not yet in World Cup, World Championships Senior or Olympics. Ideally, athlete would be about 15-16 years old.

Ideal facilities:

- * Daily access to artificial course whitewater gates.
- * Daily access to Class I-II water gates (to do endurance "loops" on)
- * Year-round supervised strength/power training.
- * New boat for at least every other season.
- * A coach for at least 50% of workouts.
- * Occasional video.
- * Someone to drive you around a lot.
- * At least one international trip per year.
- * Frequent workouts with better boaters.
- * An introduction to sports psychology.
- * An introduction to sports nutrition.

Minimum facilities:

- * Occasional access to artificial course whitewater gates.
- * Daily access to Class I-II water gates.
- * Year-round strength/power training.
- * Occasional workouts with better boaters.
- * A coach for at least 25% of workouts.
- * Access to materials on sports psychology and sports nutrition.

ADVANCED

Definition: Member of national team, participating in Junior World Championships, World Cup, World Championships, or even Olympics. Ideally, athlete would be around 17 years old.

Ideal facilities:

- * Daily access to artificial whitewater gates.
- * Daily access to Class I-II water gates.
- * Year-round supervised strength/power training.
- * New boat and new equipment for each season.
- * A coach for at least 60% of workouts.

- * Frequent video.
- * Multiple international trips per year.
- * Frequent workouts with better boaters.
- * Someone willing to drive you around or you have your own driver's license.
- * Some kind of sports psychology training
- * Advanced knowledge of sports nutrition.

Minimum facilities:

- * Frequent access to whitewater gates.
- * Daily access to Class I-II water gates.
- * Year-round strength/power training.
- * Occasional workouts with better boaters.
- * A coach for at least 50% of workouts.
- * Access to materials on sports psychology and sports nutrition.

VERY ADVANCED

Definition: At overall World Cup, Senior World Championships, Olympics, makes top 20 in K1 or C1, top 15 in K1W, top 10 in C2. Ideally, athlete would be around 18-19 years old.

Ideal facilities:

- * Daily access to artificial whitewater gates.
- * Daily access to Class I-II water gates.
- * Year-round strength/power training.
- * 2 new boats and new equipment for each season.
- * A coach for every workout the athlete wants.
- * A personal coach present at major races if the athlete wants it.
- * As much video as the athlete wants. Individual one-on-one video sessions with the coach.
- * Warm weather whitewater gate training on artificial slalom course during the winter.
- * Multiple international races per year.
- * Multiple training camps per year.
- * Frequent workouts with other top boaters.
- * Works with sports psychologist.
- * Supervised, individualized sports nutrition monitoring.
- * Has access to a car.
- * 100% funding: all equipment paid for; all training camps, race trips, paid for plus a monthly living stipend.

Minimum facilities:

- * Same as above, except with the following modifications:
- * Only one new boat a year.
- * Only frequent video, not as much as athlete wants.
- * Year-round strength/power training.
- * Less funding.
- * Warm weather whitewater gate training during the winter, but maybe not on an artificial course.

ELITE

Makes a final more than once at a World Cup race or the World Championships / Olympics. Ideally, athlete would be around 20 years old.

Ideal facilities:

- * Similar to Very Advanced, above, except also has:
- * Higher stipend.
- * Trains full time for many months at a time. If in school or has a job, they are designed to fit in around training -- that is, it's possible to leave them for extended periods of time.

Minimum facilities:

- * Same as above, except with the following modifications:
- * Only one new boat a year.
- * Frequent video.
- * Strength/power training sessions not necessarily supervised.
- * More modest stipend.

MEDALIST

Definition: Wins medals in overall World Cup, World Championships or Olympics. Ideally, athlete would be around 21-22 years old and continue into the 30's.

Ideal facilities:

- * Similar to Ideal Elite, above, but very individually tailored, if the athlete wants it that way.
- * Trains full time as much as athlete wants.
- * May have own car given by the Federation.

Minimum facilities:

- * Same as Ideal.

Equipment

* Know your boat well. The best boaters don't just sit in their boats, they "wear" them like tailored clothing. And it takes years to really learn how a boat performs in all situations. This is an argument for not switching boats all the time. Small changes within a line are OK, but making radical changes a lot is not.

* Make sure your seat is balanced properly. Many a good design has been underutilized simply because the seat wasn't in the right place and the boater didn't realize it. This especially applies to C2s, but it also applies to C1s and K1s.

* You need to know your paddle well. Should a kayak paddle be a bent shaft or a regular shaft? And what is the ideal offset of the blades? As for whether it should be bent shaft or not, there is no objective evidence I know of to say that it should. Bent shafts do some things better but some things worse and to date, there doesn't seem to be any proof that overall they are better or worse.

* As for the offset of the blades, over the years, people have moved pretty steadily to less and less offset. It started out at 90 degrees in the 1970s but is now down to 60-65 degrees in some cases. Best to experiment and find an offset that you quickly feel very comfortable with. Many people make the mistake, I think, of saying when they get a new paddle, "Gee, the blades are offset more than I'd like, but I'll just get used to it". That means they end up hesitating just a little bit, holding back just a little bit, because the feel is not quite right. Best to spend a lot of time right in beginning to get a paddle you feel really good about.

Technique – Background

- * The tendency is to want to look for rules, general principles that make it easier to grasp what's

going on. And in the beginning, there are some that make sense to follow. But the problem with slalom is there are many exceptions to the rules! For instance, beginners are taught to “lean downstream” to keep from tipping over in the oncoming water. Or to lean into the turn on eddy turns. Or that backstrokes are bad. Well, all those things are only sometimes true. So, approach a “rule” with a bit of skepticism; it may be all right for now, to get you through your current phase of development, but maybe after that it should be reexamined.

* Technique changes every few years, so that what was once considered good technique might now be considered bad technique. It usually changes the most after a major rules change or especially a change affecting the design of boats and equipment -- such as we’ve just had. So, those are times to be especially alert to new ideas.

* What may be the best technique for one individual might not be the best for all individuals. Differences in body segment lengths, arm and back strength, height, and body weight can all make a difference.

* Furthermore, what may appear as the ideal technique because some World Champion does it that way, may not be the best technique for you right now, simply because you are not skilful enough to do it yet -- or more precisely, do it well consistently, and under pressure. A classic example is whether to do a downstream gate in an eddy reverse or direct. Maybe direct is fastest so that’s what the top boater does. But it may be too risky for you and doing it reverse is actually better for you right now. So knowing what your limitations are at any given moment is just as important as knowing what the ideal is to work towards in the future.

* Even among really skilled boaters there may not be “one best way” to do a move. So, over the years what you need to do is practice several different ways to do it and then in the race just chose the one you feel the most comfortable with at the time.

* Top champions may not be able to explain to you what they’re doing or why they’re doing it -- unless they’re really forced to think about it. That’s because they learned it so long ago it’s just habit for them now and they don’t think about it any more. They get into a situation and instinct takes over. Repetition is what makes this possible. In the beginning, when you learn a new technique, you think about it consciously. But then as you repeat it over and over again in training, you drive it into you subconscious, ceasing to think about it any more, and just doing it automatically.

Technique Pointers

* It’s easier to make a fast boater clean than a clean boater fast. Most of the top boaters in the world got fast first and then learned to clean it up at the high speed later, rather than the other way round. One reason for this is that the techniques for going fast are different from the techniques for going slow. If you first learn to go slow and clean, you then have to learn to forget all the habits built around that approach before you can learn the techniques for going fast. Especially today, with short courses and small penalties, you can’t win unless you’re fast enough to win. You can only be so clean but you can always get faster! So, I would say that once you learn the basics in slalom, pretty quickly you want to factor in a real concern for speed in your training. And one good way to do that is to experiment under the stopwatch to figure out the fastest way to do a move.

* Probably the best way to learn technique is to see in the flesh a really good role model and then have a coach help you copy what you’re seeing, by videoing the top boater and then you

and analyzing the video with you, among other things. Next best is to have videos of really top boaters to watch on your own, which is what we're doing here. As you study these videos, however, here are some important concepts to think about:

* Being at home on whitewater. The first thing you'll notice about a really good boater is how at home he or she is on hard (class III-IV) whitewater. It's a matter of learning how the boat reacts in all kinds of whitewater. Therefore, when you're starting out, lots of river running, enders, paddling all kinds of boats, handsrolls and just general playing are extremely important for learning balance and boat control. You have to constantly press yourself to do new things on the water.

* Have a good feel for "fast." Note how top boaters are able to sense when the boat is going fast and when it isn't, and when it isn't, doing something about it -- some quick acceleration strokes, more upstream lean to make them squirt out of a pivot turn faster, and so on. Beginners and even intermediates often think that just because they're paddling furiously then the boat must be going fast when in fact, it isn't. Or sometimes they just don't see opportunities to accelerate the boat. Other times it's just the opposite; the boat is already going fast enough but they think it needs to go faster and they spend unnecessary effort that only gets them into trouble.

* Get a good grip on the water. This has to do with the paddle in the water. The most obvious example is on the forward stroke. Basically, you want to think about grabbing a piece of water with your paddle and then pulling your body up to it, not just putting the paddle in the water and pulling it through the water. It's a subtle difference, but an important one. In essence, if you think about pulling yourself up to the blade, not only will you use your arms and back, you'll also use your torso, hips and even push with your legs or knees.

* Don't abuse the water. Another aspect of getting a good grip the water is not ripping the blade through the water so fast that the forward side of the blade actually breaks contact with the water for a split second and there is a lot of splash. Instead, you want to maintain that grip on the water; put the blade in the water and then accelerate the pulling pressure all the way through the stroke. It all happens very quickly; I'm not talking about slow movements here. But it's the way it happens that is important, always keeping that grip on the water. That's what makes a good paddler's technique look so smooth.

* Smooth turns that keep up speed. In many turning moves the key is to avoid sharp, jerky changes of direction, substituting instead smoother, more gradual ones which keep up momentum better. Upstream gates are a good example. On a good one, a boater keeps the boat moving round the turn, while a not-so-good boater has a lot of stopping and starting, which is slower.

* Watch there the head and blades stop moving. One way tell whether a paddler could be going faster is simply watch for where his head stop moving forward and ask why. There may be a good reason for it, but it could also be a place where more speed can be obtained by keeping it moving forward longer. It's the same thing with the paddle blade(s); it needs to keep moving, also. There is a "hierarchy of strokes" in slalom and you want to be working towards the top of it as much as possible. The top of the hierarchy is forward paddling. Next fastest is feathering. Then draw strokes. Then comes bracing. And finally comes backstrokes. Try to avoid brace strokes or prolonged feather or steering strokes and paddle forward instead. See if you can avoid a backstroke, altogether, but above all, if you have to do one (and sometimes it's best to), get it over with quickly so you can resume forward paddling.

* First decide where the boat should be. In settling on the proper technique for a gate

combination, first decide where the boat should be in all phases of the sequence. Then, pick the most efficient and economical number of strokes to put it there. Pay particular attention to achieving fast exits from gates. Be sure to look for ways in which the water can do the work for you.

* Speed, angle, trajectory. As you watch boaters do a particular gate combination, consider these three things, for most problems have to do with them. First, examine the speed with which the boater goes into the move. Was it too fast or too slow? Then look at the angle of the boat in the sequence -- was the boat angled in the right direction? And lastly, look at the trajectory of the boat. Angle and trajectory are two different things. The boat can be angled in one direction but actually moving in a different direction -- sideslipping to the left, with the bow angled right, for example. Did the boater pick the proper trajectory for the sequence in question?

* Work on quick acceleration. In talking about getting a good grip on the water and being smooth above, I was speaking about most of the paddling on the course, what has sometimes been called "the traveling stroke." But there are also times on a slalom course when the paddler has lost speed and needs to accelerate the boat quickly. And this time, he uses a different stroke, more with just the smaller muscles like the hands and arms because they can move the quickest. The best boaters are often able to accelerate the boat with one or two strokes like this (in the case of a tight sequence), or through a high stroke rate (in the case of a wide-open sequence). In other words, at times like this, key bursts of power may be more important than smooth paddling. This ability to "shift gears" on a course may sound easy to do, but in my experience most people tend to paddle the entire course at one speed, the speed they leave the start gate with.

* Get extension on your strokes. Like so many things in slalom, this isn't always true, but it often is. Quite often the top boaters get tremendous extension on their strokes because they have the flexibility to do it, the balance control to do it, and can exert great strength in awkward body positions. As a result they can often achieve with one stroke what it takes others two or three strokes to achieve. A good example might be a draw stroke to turn the boat. Someone with good extension might be able to get the blade way away from the side of the boat, all the while holding the paddle shaft pretty vertical because he is stretching the upper arm way out to the side, and feeling the stretch way all the way down his back. As a result, he gets the boat round with one good stroke because he has more range of motion to work with. But the next boater doesn't get this extension and it takes him two or three strokes, and a lot more time.

* Summation of forces. This is related to extension. Essentially it means getting all the muscles of your body into the stroke and not just a few of them. A good example is forward paddling. Good boaters use their torso muscles as well as their latissimus muscles, and even a pumping motion with their legs, whereas not-so-good boaters use just their arms. Another example is turning the boat. Again, not-so-good boaters use just the arms. But good boaters use waste and even leg muscles to twist the boat around, as well as the arms.

* Learn consistency. The best boaters are consistently good, not just good on one run or once in a while, but most of the time. To be consistently good with a particular technique, you need to know that you can execute it under all circumstances. not just as a one-off in practice with a lot of rest and no one looking. So, as you learn a new technique, the first step is to be able to do it at all, with a lot of rest between efforts. Then, you start to be able to be more successful than that. Maybe you can do it 5 times out of 10 tries. But that means it's probably still not good enough to do in a race. The odds of success just aren't good enough yet. Before you can use it

in the race, try repeating it several times nonstop as part of gate loops in training sessions. If you can keep doing it correctly as you get more and more tired, then you can succeed in doing it in the race.

* “The track.” The gates on a slalom course can be viewed as mere way stations on an invisible track that runs down the river. The idea is to go as fast as you can without falling off the track. In other words, you have to have perfect boat positioning all the way down the course, not just in the gates. Many boaters don’t observe this principle, looking at a slalom course as just 15-20 gates. They tend to deal with one gate at a time and don’t pay enough attention to water formations and the overall trajectory the boat should take for optimum speed over the entire course. Consequently, while they may negotiate all the gates fine and have a clean run, they are too slow to win. To do it right they have to constantly think ahead two or three gates, setting up in this one so the next one or two will go optimally. So, rather than negotiating 20 gates, it’s really more like negotiating 90 gates. For top boaters, what happens in between the gates is every bit as important as what happens in the gates.

Material available also on <http://www.slalomtechnique.co.uk/>

C1

- Basic stroke technique – level 1
 - [Forward paddling](#)
 - [Bow rudder zig zag drill](#)
 - [Turning sweeps](#)
 - [Reverse pivots](#)
 - [Bow draw pivots](#)
 - [Cross-bow pivots](#)
- Basic gate technique – level 2
 - [Onside staggers](#)
 - [Offside staggers](#)
 - [Onside spin](#)
 - [Offside spin](#)
 - [Onside Upstream](#)
 - [Offside upstream](#)
 - [Onside 'S'](#)
 - [Offside 'S'](#)
- Advanced gate technique – level 3
 - [Onside staggers](#)
 - [Offside staggers](#)
 - [Down in eddy - Trailing reverse](#)
 - [Down in eddy - Stern sweep](#)
 - [Onside Upstream](#)
 - [Offside upstream](#)
 - [Onside 'S'](#)
 - [Offside 'S'](#)
 - [Punt](#)
 - [Full run](#)

C2

- Basic stroke technique – level 1
 - [Forward paddling](#)
 - [Acceleration drill](#)
 - [Onside pivots](#)
 - [Offside pivots](#)
- Basic gate technique – level 2
 - [Onside staggers](#)
 - [Offside staggers](#)
 - [Onside spin](#)
 - [Offside spin](#)
 - [Onside Upstream](#)
 - [Offside upstream](#)
 - [Onside 'S'](#)
 - [Offside 'S'](#)
- Advanced gate technique – level 3
 - [Onside staggers](#)
 - [Offside staggers](#)
 - [Down in eddy - Trailing reverse](#)
 - [Down in eddy - Stern sweep](#)
 - [Onside Upstream](#)
 - [Offside upstream](#)
 - [Onside 'S'](#)
 - [Offside 'S'](#)
 - [Punt \(Bow man\)](#)
 - [Punt \(Stern man\)](#)
 - [Stopper upstream](#)
 - [Full run](#)

K1M – K1W

- Basic stroke technique – level 1
 - [Forward Paddling](#)
 - [Pause and Catch Drill](#)
 - [Acceleration Drill](#)
 - [Edging Drill](#)
 - [Zig Zag Bow Rudders](#)
 - [Turning Sweeps](#)
 - [Reverse/bow draw Pivots](#)
 - [Bow draw Pivots](#)

- Basic gate technique – level 2
 - [Staggers - Slice Through](#)
 - [Staggers - Reach Through](#)
 - [Staggers - Shoulder Drop](#)
 - [Back ferry](#)
 - [Full spin](#)
 - [Regular Upstream](#)
 - [Fix Upstream](#)
 - [Reverse pivot](#)
 - [Slice 'S'](#)
 - [Sweep 'S'](#)

- Advanced gate technique – level 3
 - [Slice-through staggers](#)
 - [Reach-through staggers](#)
 - [Shoulder-drop staggers](#)
 - [Down in eddy - Trailing reverse](#)
 - [Down in eddy - Stern sweep](#)
 - [Deep in eddy - regular](#)
 - [Deep in eddy - reverse stroke](#)
 - [Slice 'S'](#)
 - [Sweep 'S'](#)
 - [Sweep Fix](#)
 - [1 Stroke Upstream](#)
 - [Punt](#)
 - [Stopper upstream](#)
 - [Full run](#)

SOME RUNS TO STUDY

The following are videos of runs posted on the internet and therefore easy to access. Simply click on the one you want to see.

K1

CIPRESSI, Stefano

[World Championships 2006 in Prague](#)

BILLAUT, Julien

[European Championships 2004 in Skopje](#)

DOERFLER, Fabian

[World Championships 2005 in Penrith](#)

LEFEVRE, Fabien

[World Championships 2006 in Prague](#)

[French Championships, 2006](#)

[World Cup 2006 in Athens](#)

[Pau in 2006](#)

[World Championships 2005 in Penrith](#)

SCHMIDT, Thomas

[World Cup 2004 in Augsburg](#)

WALSH, Campbell

[World Championships 2006 in Prague](#)

[Training in Penrith in 2005](#)

[European Championships 2004 in Skopje](#)

[World Cup 2004 in Athens](#)

[World Cup 2004 in Augsburg](#)

COMBOT, Sébastien

[World Championships 2007 in Foz do Igacu, Brazil](#)

K1W

DUKATOVA, Jana

[World Championships 2006 in Prague](#)

PENNIE

[World Series #1 in Penrith](#), top

[World Series #1 in Penrith](#), bottom

BONGARDT, Jennifer

[World Championships 2007 in Foz do Igacu, Brazil](#)

C1

BELL, Robin (with Martikan and Estanguet as well)

[World Championships 2005 in Penrith](#)

ESTANGUET, Tony

[World Championships 2006 in Prague](#)
[French Championships 2006 in Bourg St. Maurice](#)
[Pau in 2006](#)

MARTIKAN, Michal

[World Championships 2005 in Penrith](#) (top half)
[World Championships 2005 in Penrith](#) (bottom half)
[World Championships 2007 in Foz do Igacu, Brazil](#)

C2

HOCHSCHORNER, Pavel -- HOCHSCHORNER, Peter

[World Championships 2007 in Foz do Igacu, Brazil](#)