18 CANOE SLALOM RACING

3… 2… 1… Go! Ten strokes to the first drop – jump right, land left and drive hard at left pole on gate one – aim to flick off big wave en route to gate two – wetter than intended but still OK – high into gate two upstream and squeeze out tight – good start – track hard across river – shoulder under right pole on three – roll off diagonal – dry bows and a touch of upstream edge on the lift into upstream four – sweep fix and away – arms feel strong – fight to hold a straight line for tricky offsets five and six – just OK… late on the jump into seven and lose touch with entry pole – half a sec gone but fast exit helps retrieve – stuff high into upstream eight on single stroke – sneak out tight and we're back on track – pull hard away – first crunch move – tight offset nine to eleven needs a hard pivot at nine just to make the full spin at ten – 'tight as', but great exit through eleven – halfway… fast and clean so far!

This is canoe slalom racing 2006 style…

The Olympic discipline of Canoe Slalom has to be one of the most spectacular and exciting canoeing disciplines for paddlers and spectators alike. Racers must negotiate a time trial course of up to 25 gates as quickly as possible with penalty seconds added if they hit or miss a gate. Depending on the level of competition, races are decided on either a single run, the aggregate of two runs or the best of two runs and can be held on any kind of water from the flat right up to grade 3+.

▶ So What Makes Slalom Different?

It's a time trial event that races over a different course every time. Each new race is a new challenge of river characteristics, river levels and gate placements that racers have to pit their wits against and 'do battle with'. Good course design will be a test of the physical, the technical, the mental and the tactical, as well as being just cool to paddle.

▶ Why Cool?

In the most basic sense, slalom takes all its moves from a white water river play environment, linking selections of them together into measurable tests graded for whatever ability levels are involved. It also has endless choices and variables.

It offers a great way to develop boat, blade and physical skills as well as watermanship, whatever your paddlesport discipline. It demands 'on the spot' decisions and reactions to all manner of unexpected situations, requiring a determined focus and an instinctive 'flair' for athletic ability, at times using the water, at others combating and defying it.

Who Can Race And In What?

Canoe Slalom UK has a national ranking system split into divisions for all abilities.

There are 4 individual classes, 2 for kayak and 2 for canoe to choose from:

- Men's Kayak (MK1)
- Women's Kayak (WK1)
- Men's Canoe Singles (C1)
- Men's Canoe Doubles (C2)
- All 4 cater for junior right through to veteran competition.

In addition to the above classes there is Slalom Team Racing where three boats race together over the same course, timed from first starting to last finishing. It is possibly the most visually impressive, spectacular and FUN class of them all.

GB Slalom Medals

Over the past thirty years Great Britain has developed a winning history in Canoe Slalom, consistently placing its paddlers in the world top ten since the early 1970's, and this against all the odds considering the lack of consistent and accessible white water on offer. GB paddlers have developed reputations for being technically excellent and physically well prepared. The major world opposition comes from the Alpine countries: France, Germany and Italy, also the recently emerging Eastern block countries of the Czech Republic, Slovakia, Slovenia, Poland, and the USA, Canada and the Australians.

Artificial Or Natural?

Increasingly since the 1980's artificial slalom courses have taken over from natural river sites. An Olympic sport 5 times since 1972, three of these five courses have been run on man-made channels with pumps recirculating the water. Advantages here are that they can be built near large centres of population with the design of the river features absolutely controlled. With multi-user features coming as standard this has made a big impact on 'access' with rafting, freestyle and recreational users benefiting as well as world class slalom racing.

Rule Changes And Links To Freestyle

Over 1989 - 2004 the running time for international canoe slalom dropped by 50% from an average 200secs to somewhere in the region of 85-95secs. Improvements and adjustments both in the rules and in boat design have resulted in a much more attractive event for paddlers and spectators alike. More of each race is on white water and at many venues spectators can see most of the race from start to finish without moving.

Over this same period a typical slalom boat has changed shape dramatically with the biggest change coming in 2005 with a cut in the minimum length of 0.5m. The full impact of this has still to be felt but already technique and the possibilities for new moves are changing slalom forever and interestingly bringing slalom moves more into line with freestyle techniques.

GENERIC DEVELOPMENT IN SLALOM

LONG TERM PADDLER DEVELOPMENT (LTPD)

Slalom is committed to the best principles of LTPD which is crucial to the development of a balanced and successful slalom athlete, in it for the 'long haul' whether it be for elite performance or 'canoeing for life'. The development of a robust white water skill base does not happen overnight and can only be achieved through a well structured, varied and wide ranging programme commitment over a period of years.

The importance of the FUNdamental movement skills and their transfer into basic paddling during the Paddlesport Start and Development stages is key to the development of a young slalomist and provides the bedrock to developing moving water skill, white water confidence and gate technique that underpin later success in slalom. The key 'slalom window' here is predominantly in the age range 9-15 years. If variety of canoeing 'movement experience' is missed out on in these years, the ceiling of potential will have been lowered and is virtually impossible to make up at a later stage.

We are not talking slalom competition here. Experience indicates that a range of experiences involving WW touring, play, games, polo, surf, canoe as well as kayak, in addition to short course mini-slaloms and the new X Stream Challenge opportunities can all provide essential and relevant multi-discipline input and make for a natu-

ral LTPD progression, an 'in house benefit' for canoeing that not many sports can match.

As we move on into this chapter to focus on the specific slalom development of the 'Training to Train' & 'Training to Perform' stages - namely Technique and Skill Development, Physical Development, Planning & Mental Skills Development, Tactical and Racing Skill Development - it is important to be aware of the generic template of the recommended training progressions as they apply from the FUNdamentals stage to the onset of puberty by the end of the Start and Development stages. Areas not covered here will almost certainly lead to remedial work or compromises at a later stage.

See Chapters 1 and 10 and BCU LTPD document.

GOAL SETTING AND EFFECTIVE PLANNING

Success in slalom cannot be achieved without good goal setting and planning skills. The following points underline how they underpin the whole slalom coaching process and are key factors in developing performance for both coaches and paddlers.

- They allow the paddler to take responsibility.
- They promote a philosophy of 'athlete driven… coach steered' and will define a coach-athlete relationship.
- They underpin any evaluation and planning process.
- They support the reviewing, replanning and restating process.
- Whilst being essentially individualised they can also have a powerful 'team effect', tapping into group support systems not normally associated with either slalom or paddlesport.

Goal setting and planning - see also Chapter 1, pp. 19, 35-36; and Chapter 3, pp. 3-5.

Goal setting can also have a positive impact on mental skill development by:

- Boosting confidence
- Enhancing motivation
- Reducing anxiety
- Focusing attention better
- Promoting a positive attitude and self image.

See also Chapter 3 'Planning & Mental Skill Development'.

MAIN GOAL TYPES WITH SLALOM EXAMPLES

Outcome/End Goals

End goals are the 'end result' or the dream.

Examples of these might be to win, to medal or to make national team selection. They can be motivating and inspiring and are essential and necessary over the long term. Everyone should have them – coach and paddler.

The downside with end goals is that they are not always in the athlete's control and can therefore be demotivating and create anxiety when not achieved or are perceived to be unrealistic.

Performance Goals

Performance Goals are measurable benchmarks linked clearly to outcome goals and process goals.

Examples of these might be beating previous personal best times on a time trial / set course or posting a set number of clean runs over an identified period. In essence they are easily measurable, personal benchmarks within a paddler's control.

Process Goals

Process Goals are task-related, focussing directly on the 'individual how' and they should relate directly to the 4 core elements: Technical, Physical, Mental and Tactical requirements of reaching Performance goals.

Achieving process goals should always be 'Within the paddler's control'.

Examples might be:

- Developing specific stroke sequences or key blade understanding.
- Developing a robust race day routine that you own.
- Improving balance/stability on a particular lift in the weights room.
- Improving the number of competitive first attempts.

GETTING THE BEST OUT OF YOUR GOALS

- Revisit goals regularly.
- Constantly seek to link outcome goals to performance and process goals.
- Face up to replanning where necessary.
- Restate for motivation and encouragement.
- Seek a group 'buy in' for a powerful dynamic and motivating effect.
- Allow the athlete to take responsibility.
- Maintain a constant focus on what 'performing well means for the paddler'

FUNCTIONAL STABILITY AND FLEXIBILITY FOR SLALOM

Acknowledging this key area of slalom development – BCU World Class Slalom has followed up the programme of research instigated by Sprint Racing and Joanne Elphinston (see Racing Chapter). Outlined below are the key areas relevant to slalom and short boat WW paddling in general.

To follow up this section properly it is essential for coaches to attend a L1 Functional Stability workshop and obtain a copy of the CD resource "Functional Stability for the Paddling Athlete" (info for both on the BCU website).

The general thrust here is to develop a more functional approach to conditioning, in turn enabling a more holistic approach to a paddler's overall strength, power and flexibility development.

Slalom coaches are in the business of preparing paddlers to carry out a high skill, whole body activity with complex linked movements occurring from hands through to feet. A common misapprehension, amongst short boat paddlers in particular, is that what goes on under the spraydeck is 'not that important'. Nothing could be further from the truth.

Functional stability for paddlesport is important for two reasons:

- Performance optimization – best results for least effort.
- Reduction of injury risk – body structures working in their optimal range and position.

KEY AREAS

It is often impossible for athletes to develop beyond certain points technically - in training and in competition - without a sound level of functional stability in the following two key areas:

- **Shoulder** - If the paddler cannot lock the blade at the catch and hang onto that blade without the shoulder area stability breaking up, they will not be able to improve their skills and maximise good technique and performance when racing in any discipline.
- **Trunk** - If the trunk area is weak and unstable, then the power generated by the body will not be transmitted into either effective forward movement of the boat or the dynamic rotational manoeuvres required in slalom and the other short boat disciplines.

Functional stability can also influence speed, power, strength, flexibility and technique and should form an integral part of a slalomist's preparation from the very earliest stages. Paddlers with poor functional stability will borrow muscles whose prime role is in movement to prop up their stability. These 'movement muscle groups' will fatigue early because they are also heavily involved in stabilising the body rather than just in moving the boat.

ACHIEVING CORRECT POSTURE FOR PADDLING KAYAK

By Tim Deykin - Lead Physiotherapist, BCU World Class

This section will focus on the key areas of posture that go into paddling a kayak efficiently. The origins of this work are in slalom boats but there are wider implications for all kayak paddlers especially those of closed cockpit boats where the fittings dictate a tight body position with the knees low and spread apart.

KEY AREAS

The kayak paddling position should show:

- A mild curve in upper back (not hump).
- A shallow hollow in lower back.
- The pelvis in neutral or anterior tilt (forwards).
- An overall impression of sitting tall and upright but with gentle lean forwards coming from hips (not from back).

Photos 1 and 2 Correct kayak posture

To achieve this position (form) you need to be able to anteriorly tilt pelvis.

This can be limited by three parameters:

1. **1.** Tight shortened muscles.
2. **2.** Weak lengthened muscles.
3. **3.** Poor equipment selection (ergonomics).

The predominant reason in over 90% of cases is parameter 1: Tight, shortened or stiff hamstrings (posterior thigh muscles).

Next but equally as important is 2: Weak core stability exacerbated by:

- Weak lower back muscles.
- Weak postural abdominal muscles.
- Weak gluteal muscles (buttock).

For closed-deck kayaks short, tight or stiff adductor muscles (inner thighs) or stiff hips may also pose a restriction in anterior pelvic tilt (i.e. with feet together and knees out to side).

Finally 3: Poor equipment selection, in particular:

- Seat fittings.
- Foot rest for toes only and not heel.
- Back support or back strap to support anterior tilt of pelvis.

Deck or cockpit is too low for amount of flexibility in hamstrings, adductors and hips.

COMMON FAULT STAGE ONE

Due to any one or combination of the above, the pelvis cannot be maintained in an anteriorly (forwards) tilted or even neutral (vertical) position for forward paddling. Posterior tilt of pelvis sets lower back into a forward curve rather than a shallow hollow, and the upper back continues with an increase of its curve into a marked hump.

The natural position of the head and neck on top of the upper back in this position would be looking down into your lap, so to look forwards in the direction you're going, you have to lift up your head, creating an angle between the back of the head and upper back. (Equivalent of sitting upright in a chair and looking right up at the ceiling!) The effect is of the head and chin poking forwards.

As the upper back is no longer upright but curved forwards, the shoulder blades which follow the line of the upper back are also angled forwards, so the paddler tends to hunch up the shoulders to effect the stroke. This has the resemblance of the arm action of climbing up a ladder.


3


4

Photos 3 and 4 Stage one fault


5


6

Photos 5 and 6 Stage two fault

COMMON FAULT STAGE TWO

It is suspected that this arises as a result of a failed attempt to correct the Stage One fault, when the paddler tries to sit up straight and not slump.

The muscles of the hamstrings are very large, and can be considered as a very stiff set of springs, pulling on their attachment to the sitting bones which in turn pulls the pelvis into a backwards tilt. The lower back muscles in comparison (and the core stability muscles also) are much smaller and thinner in size, and can be considered comparatively as weaker springs. As in the Stage 1 fault they cannot maintain the shallow hollow in the lower back against the strong pull of the hamstrings.

However, your upper back muscles tend to be functionally stronger than your lower back muscles, and can pull harder into extension, so much so that the mild hump disappears and it becomes a shallow hollow instead! Don't forget that this is happening whilst the lower back has changed its hollow to a curve! So consequently the lower back is pulled back into its pelvic tilt whilst the upper back compensates and hollows out.

It gives the overall appearance of being upright, but the two curves of the back have been reversed, limiting optimal function of the back into rotation, and changing the quality of the platform upon which the shoulder blades work, so limiting the effectiveness of the transmission of force from paddle to trunk to boat.

This tends to be more common in females and hyper-mobile adolescents, whilst the upper back is still flexible enough to be able to reverse its curve.

WHY ARE THE HAMSTRINGS SO SHORT AND TIGHT?

Several factors can contribute to short hamstrings:

1. **1.** Postural factors
2. **2.** Underlying nerve sensitivity
3. **3.** Genetic

▶ Postural Factors

This is the predominant cause of shortened hamstrings, and happens very simply as a result of poor posture when standing, and subsequently whilst walking.

The hamstrings are used inappropriately to do postural holding instead of the gluteal (buttock) muscles and they become weak. They are key to the control of pelvic tilt, and are very important in making the connection between boat and opposite shoulder/arm.

The gluteal (buttock) muscles are essentially postural holding muscles, to help you stand your trunk and pelvis on top of your hips. If you feel them whilst standing up and they feel mushy, then they are most likely not working. But this would make you fall over, (and you obviously don't), so you must be using something else in instead.

Now feel your hamstring muscles whilst standing, and notice how tight they feel compared to your gluteal muscles. Your body recruits your hamstrings which are really designed to be mover (walking/running) muscles and to work powerfully. However they are now working with a sustained contraction leading to an increased 'resting tension' and ultimately shortening.

▶ Sensitised Sciatic Nerve

Normal healthy nerves can be twisted and stretched momentarily, without damage or producing any nasty symptoms. Nerves have to bend and stretch where they cross around the outside of a joint like the elbow.

The nerve becomes sensitised by chemicals (inflammatory agents released from unhealthy or injured tissues) which make the nerve unable to tolerate stretching anymore. In large quantities these chemicals also cause pain and swelling. In fact even before it gets much of a stretch, it asks the brain to help by getting surrounding muscles to remain short and resist any forces to stretch them. So the hamstring automatically stays tight and the harder you try to stretch it, the harder it will fight back so as not to allow the underlying nerve to be stretched.

▶ Genetic Factors

You may simply be predisposed to having short hamstrings, as an inherited trait from your parents.

HOW TO STRETCH THE HAMSTRING MUSCLES AND THE SCIATIC NERVE

Now that you have evaluated the posture and determined that the hamstrings are limiting good posture and form, it is likely that you will need to give advice on how to elongate them. In order for you to stretch the hamstrings you must isolate them, and avoid stretching adjacent parts of the body instead. As such, the normal bend and reach your toes is not a useful exercise, as it encourages upper and lower back stretching more than hamstring stretching, rather like when you sit in a kayak and try to lean forward just by bending your back.

1. **1.** Set-up and Pre-load
2. **2.** Muscle Stretch
3. **3.** Nerve Stretch

▶ Set-Up And Pre-Load

Arrange chairs, stool or other suitable weight-bearing surface as in Photo 8, so that you can sit on only one of the sit-on bones in your buttock and the other buttock is over the side of the chair. Put the leg of the side you are sitting on (on-chair side), out in front of you with the heel on a surface of similar height, knee locked-out straight and toes pointing away. Then position the thigh of the other leg (off-chair side) pointing down to the floor with the knee, which is bent, and with toes on the floor.

▶ Muscle Stretch

As you sit up tall, tighten the thigh of the leg that is up and feel the stretch in the back of your thigh. At the same time, use the foot of the leg which is down to assist in pulling the thigh backwards and behind you. Bending at the ankle increases the intensity of the stretch on your hamstrings (the muscle stretch).

▶ Sciatic Stretch

To put some stretch on the sciatic nerve all you need to do is pull your toes of the straight leg up towards your shin. The stretching sensation will rise to another level, but will ease immediately you point your toes down again. Keep sitting tall, without slumping, and attempt to hold stretches for longer periods of time. Start at 15 seconds and gradually increase to a minute or more!

Photo 7 Starting position to stretch hamstring muscle.

Photo 8 Loading stretch hamstring muscle.

Photo 9 Adding tension on the sciatic nerve.

Photo 10 Measuring hamstring and sciatic nerve stretch.

You can measure your progress by estimating the angle at the hip with the knee locked out straight. Marking some lines at 10˚ intervals on a wall with tape will help you estimate the angle of leg raise. Assistance is needed to lift up the leg as in Photo 10.

OBSERVATION OF PELVIS, LOWER AND UPPER BACK

It goes without saying that it is unrealistic to try to see what is happening through a thermal, a cagoule, and a buoyancy aid. We need to expose the back to view from the rear and from the side to see how it is working. This brings with it its own problems in relation to Child Protection and Privacy especially with young girls, boys and females etc.

It is ***only*** an ***observation***, and therefore there must be no physical contact whether accidental or with intent to make contact. If you are at all unsure, then ***STOP*** immediately, and explain that you are not comfortable in continuing the observation.

If you would like a professional to assist you with the observation, then it would be best to seek the expertise of a Chartered and State Registered Physiotherapist or Graduate BSc Sports Rehabilitator. You can find an accredited list on the internet under CSP or BASRaT.

You will need to ascertain permission and informed consent. This should be in the form of signed consent by those over 18 years of age. For those under 18 years, informed consent will be needed by parents or guardian. It should be arranged for a convenient time when parents or guardian are able to attend, and it would be advisable to record their presence at the meeting. For those over 18 years, they too should be

given the opportunity for them to bring parents or a close friend. You must make clear the reasons for wanting to make these observations, and explain the reasons before you start. It would be sensible to document these clearly. Only do the observations of what you have said you are going to do, and do not deviate from the planned actions.

The place of the observation should be clearly defined, private, warm and with adequate lighting.

THE CORE ELEMENTS OF CANOE SLALOM

Canoe Slalom is a highly technical sport which also demands high levels of strength, explosive power, endurance and mental toughness.

1. Technique And Skill Development

Effective technique - Development of strokes, boat line, pacing, edging, trim, in a dynamic yet controlled and repeatable way.

Watermanship - understanding of the shape, feel and possibilities of a white water environment. Developing and maintaining a high white water confidence.

2. Physical Development - Strength, Power, Speed And Endurance

Physical ability to develop & deliver skilful slalom performance in training and competition environments.

3. Planning And Mental Skills Development

Psychological abilities – Visualization, Concentration, Mental toughness. Maximising strengths and minimising the effects of individual weaknesses.

Goal-setting, preparation, planning and review.

4.Tactical And Racing Skill Development

Decision making - Which technique? Where? Tactical awareness in different formats.

Reactive ability – Applying successful plan B's and C's to unexpected situations.

Best practice in the key areas of nutrition, health, rest/recovery and the more general areas of lifestyle support such as family, school/college and work are also essential in preparing athletes for a successful long-term career in slalom.

The following sections will look at each of the key core elements for canoe slalom in more detail.

TECHNIQUE AND SKILL DEVELOPMENT IN CANOE SLALOM

Canoe Slalom is an open skill sport where a wide variety of techniques are brought to bear in a skilful way on a constantly changing white water environment. A successful slalomist must be technically, physically, tactically and mentally prepared to respond to whatever the river and the course design demands.

This choice of 'how fast' versus 'how clean' remains a compelling one for any level of slalomist.

COACH'S TIP

• An individual's physical build (predominantly height and length of levers) will define that individual's paddling technique and be a key determinant in the focus of physical preparation. The wide variety of solutions available in slalom make it possible for a wide range of body types and paddling styles to be catered for. Within the basic defined developmental framework for slalom, as outlined in this chapter, a coach must always be ready to develop strengths and limit weaknesses by individualizing both the approach and the preparation.

The Technical Demands of Slalom can be broken down into developing understanding of:

- Water shape, strength and direction.
- Course design/character/demands.
- Stroke sequence/key stroke around slalom gates.
- Boat position/angle/trim/lean.
- Body position and function.
- Impact of boat speed.
- Rhythm/tempo.

Traditionally the introduction of the basic slalom techniques of forward paddling, turning and steering, basic flat water gate sequences, take place on flat water – both with and without gates. This allows the key basic principles to be felt and understood, and remains an important part of day-to-day slalom training at all levels.

From the start there should be an early focus on the stop/start element inherent in slalom. This looks at the effectiveness of 8 -10 stroke accelerations and force production from single stroke whilst retaining good technique. Careful, regular coach observation and use of video is important here with work done both with and without gates.

FORWARD PADDLING IN A SLALOM BOAT

- See also the new Slalom Technique DVD available through the BCU website and Chapter 20 under 'Racing Stroke'.

What Is The Importance Of An Effective Forward Stroke In Slalom?

- Up to 80% of any course is broken down into forward strokes.
- Most of these strokes are re-acceleration strokes to move the boat forward again after completing technical slalom gate moves.
- Good forward paddling technique can deliver more power for less energy, especially when fatigue sets in near the end of a competition run.

Below are some key considerations for the slalom kayak and canoe stroke.

The Forward Stroke In Kayak

▶ Boat

- Flat boat whenever possible with rock-solid edges.
- A well adjusted footrest - tight but allowing some movement to prevent cramping.
- Knees out wide with strong grip upwards and inwards.
- Loose hamstrings are vital to facilitate good boat grip and a relaxed effective paddling action (see also section on Functional Stability).
- Have a close-fitting backrest, flexible enough to allow layout over the stern when necessary.

▶ Body

- Visible torso rotation, with power derived from major back muscles before arms.
- Core stability central to maintaining good posture in boat with forward lean from cocking the pelvis and not by bending the mid and upper back.
- Top arm – fairly straight, some bend to allow efficient mechanics.

▶ Blade

- Paddles – stiff shaft for 15+ years. Younger juniors need a more flexible shaft.
- Paddle length and grip - no less than a third of total paddle length between hands.
- Blade size – very individual, important to assess/measure, through visible fatigue and feedback over full course efforts and longer, (reassess regularly with juniors).
- Neck of blade to travel through water (visually assess).
- Clean entry of blade, driving downwards at the catch.
- Vertical stroke to side of boat - optimal pull of blade through water.
- Exit of stroke at latest by hip.

Key Elements – Forward Stroke For Slalom Canoe

▶ Catch

- Fully submerged blade.
- Blade vertical and as close as possible to boat.
- Back straight.
- Torso rotation, with lower arm fully extended.
- Bent top arm (pushing down).
- Form the 'A' shape with boat, paddle and body.

▶ Pull

- Vertical paddle.
- Pulling with back and arms.
- Winding in the torso twist.
- Rigid set lower back.
- Back then arms apply force to the paddle, gripping through the water, thrusting all the power from the paddle through the knees into the boat, trying to push the boat past the paddle.

- There should be a strong focus on visible size of impulse –fast and powerful – allowing the blade to apply real 'grip' to the water.
- Exit of stroke at latest by hip.

Boat

- Keep the boat even, with as little rocking as possible.

Back Posture

- Back should remain solid and straight throughout the stroke.
- The forward lean coming from the hips and not from the mid or upper back.
- Posture the same as when lifting a heavy weight or squatting weights in gym.

Onside And Offside Issues For Canoe

Onside

- For more advanced paddlers the boat can be steered back onto the onside stroke by putting a little offside edge on at the end of the stroke, thus reducing the need for cross-bow strokes.
- 'J' stroke should be a fluid component of stroke, left as late as possible to effect maximum pull along stroke.

Offside

- Strong trunk rotation essential with good top arm flexibility.
- Well-developed core stability needed to facilitate this cross-bow rotation.

DEVELOPING THE BASIC SLALOM STROKES AND TECHNIQUE MODELS

Revised and updated in 2005 these models cover the basic boat lines, stroke patterns and key blades for the main upstream and downstream moves in slalom. Starting with basic strokes and drills, moving onto basic flat water gates and progressing onto white water gates, they underpin all the basic technique moves of canoe slalom and represent a common agreed start point for skill development in slalom.

Slalom Technique DVD & Website

All the above strokes, models and progressions (Basic strokes, flat water gates and WW gates) are now available on DVD via the BCU website. Using new rules 'short' slalom boats and covering Kayak, C1 and C2 - top GB and international paddlers demonstrate all the key techniques and moves involved in slalom. Coaching bullet points and sequence descriptions plus a comprehensive glossary and notes section make this a 'must have' coaching and paddling resource for 2006.

Technique models are also available in diagrammatic form in the *Slalom Coaching Manual* via BCU supplies.

Also check out the website:

www.slalomtechnique.co.uk

where most of the DVD content is available to view online via flash viewer and still shots with bullet points. Essential viewing for coaches Level 1-4.

Visit www.bcu.org.uk for more information.

CONTROLLING ROTATION

Slalom boats by definition are designed to turn quickly and easily. White water river environments and slalom course designers combine to test not only turning skills but also the skill of negotiating a course on moving water without over-rotating.

The developing slalom paddler very soon learns that it is this understanding and feel of the creation and control of rotation that is one of the key skills to racing 'fast and clean' in slalom.

The term commonly used in slalom is 'keeping the bows downstream' and is very similar to the skiing term 'keeping your shoulders facing down the hill'.

BASIC STROKES AND BEHAVIOURS

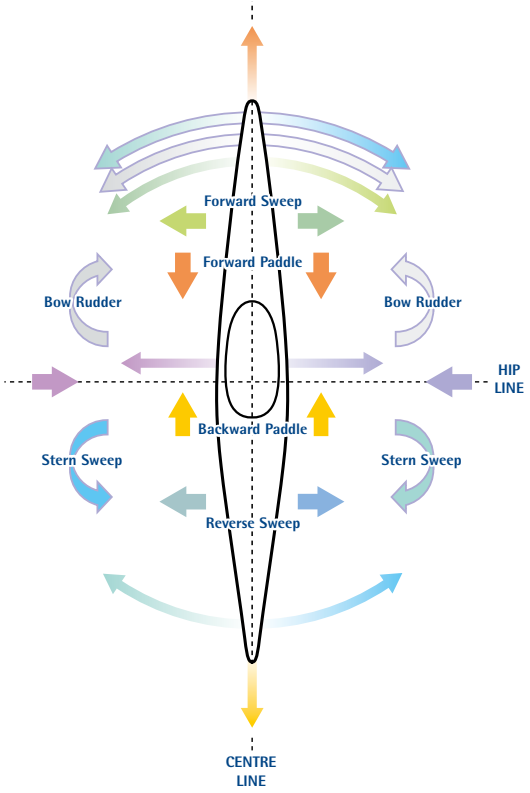

Fig. 1 Basic Strokes and Behaviours

It is fundamental to understand and feel that what slalomists do is either:

- Pull the boat past the Blade.
- Pull the boat towards the Blade.
- Push the boat away from the Blade.

These are key to acceleration/deceleration, and creating and controlling rotation in slalom.

What about strokes where neither boat nor paddle appear to move? These are holding strokes and their role is:

- To decelerate.
- To control rotation.
- To counteract water flow.

Different types of strokes turn the boat in the same directions. Who or what decides? This is the challenge of slalom!

THE KEY BLADE PRINCIPLE

Because a slalom boat is hardly ever going in a straight line, the principle of 'Key Blade' is crucial. For virtually every position on a slalom course (or river for that matter) the dominant blade will provide the most effective control. Watch C1 paddlers; if they are 'on track' with the boat running well then they will be on the key blade whether it's onside or offside. Every coach's toolbox should contain the question, 'If you could only have one blade in that position…which would it be?' Eventually as paddlers get more skilful they will be able to answer correctly before their first attempt.

COACH'S TIP

• Every aspiring kayak paddler in any discipline or class should paddle a C1 to better understand the key blade principle (and to improve white water confidence). With two blades to choose from and the frequent encouragements to 'keep paddling' it's all too easy for kayak paddlers to be on the wrong blade at the wrong time.

When developing the basic slalom models or working out any slalom sequence, matching or planning every stroke is not as important as recognizing the key blade and 'feeling' when to either move off it or repeat it. Incorporate single blade work into your tech sessions on a regular basis – only when paddlers feel it will they believe.

FLAT WATER VERSUS MOVING WATER TRAINING

As soon as possible all basic techniques (forward paddling and gate work) should be introduced into moving water situations so that the ability to apply them in a changing environment starts to develop. This is especially so for the development of edging, leaning and trimming skills and the understanding of how to create and control rotation.

SOME USEFUL TECHNIQUE PROGRESSIONS

The basic technique models should be developed with juniors to allow further progressions as seniors. From very early on the coach/paddler relationship should aim to develop a toolbox of skills, allowing paddlers to choose the appropriate technique - with/without the coach - developing ultimately paddler responsibility for decision making.

- Focus on a sound understanding of the three key stroke areas of Power, Turning and Linking/ Slicing stroke.
- Develop an understanding of the interplay of boat line, pacing and key blade.
- Develop basic skills on flat or easy moving water to groom technique.
- From early on practise choosing, holding and retrieving the 'racing line' on a course, with choices/decisions being reviewed and evaluated by how fast and how clean (times and penalties).
- Gate work – start with single gate moves then slowly building complexity of sequence.
- Experience the feel of 'holding the line, using the inside poles, pivoting around poles to allow swift exits, torso moves where the body movement is radical but does not adversely affect the run or the trim of the boat.
- Focus on keeping body lean within the balance of the boat, the boat remaining balanced without losing the edge or requiring blade support.
- Try to paddle (and feel) wider lines first then tighten up to notice/believe any difference.
- Practise the ability to have a plan A / plan B option of equal commitment and be able to deliver in a race setting without any visible difference.
- Groom techniques through short sequences and build these skills into longer runs (halves and fulls in training) and then into race situations (simulated and real).
- A key role of the slalom coach is to facilitate choice/understanding/feeling of most effective options on a sequence with the emphasis on efficiency, maintenance of boat speed and reducing the number of strokes.
- Never lose focus of single stroke power and efficiency with regular assessments over 8-10 strokes maximum.

See testing protocols in Physical prep section.

PRACTICE STRATEGIES FOR YOUR COACHING 'TOOLBOX'

Methods for structuring technique work or practice are normally grouped into three pairs of areas (see also Chapter 1 p. 31):

- Massed Practice – where the rest interval between practices is short or non-existent (less than 1:1).
- Distributed Practice – where rest is more frequent or longer (over 1:1).

These two methods focus on the recovery interval as the key variable. See Physical Preparation section for more info on the interplay of the training variables.

- Blocked Practice– execution of one technique repeatedly (maybe up to 50 times) with a small amount of variation say in direction or pace.
- Random Practice – the deliberate mixing of a variety of techniques throughout a session.

These two methods are both task focused – the first overloading just one move or technique with a little variation – the second focusing on as mixed a variety/combination of techniques/skilful applications as possible.

- Constant Practice – where the same move or specific technique is repeated in the same uniform way a high number of times.
- Variable Practice – where the execution of a technique is deliberately varied throughout the practice session.

These two focus on the execution of the task. The first looking for as exact a grooving/repetition of the technique as possible – the second providing varied and challenging environments for the skilful application of a technique.

Applying the correct practice method is crucial in targeting / isolating particular techniques without them getting too boring and repetitive.

WATERMANSHIP AND WHITE WATER CONFIDENCE

As indicated in the earlier section on LTPD, it is important to underline here the vital development for slalomists (particularly in the J12 - J16 age range) that must take place away from slalom gates on just about any type of moving/white water in pretty well any kind of appropriate boat. There are no short cuts here and failure to put in these 'white water minutes' will severely limit any future development in slalom. white water touring, freestyle, white water racing and surfing offer these key opportunities to a balanced slalom development as well as bringing real variety and enjoyment.

TECHNIQUE DEVELOPMENT VERSUS SKILL DEVELOPMENT

Slalom is a highly technical discipline and it is important to understand the distinction between techniques and skills. The two are often used interchangeably and can at times cause confusion.

Techniques - the specific strokes and patterns of movement that are canoe slalom.

Skills - the effective application of those techniques in a slalom environment.

- To improve techniques 'develop the action'.
- To improve skill (i.e. to become more skilful) we need to develop the ability to perceive a need and apply the correct technique.

Slalom competition by definition tests both techniques and their skilful application. However a common pitfall in training for slalom is to persistently practise slalom, which by its very nature links and combines all varieties of move to 'test out' the racer.

In training, coaches should ensure:- Adequate time is spent on individual technique themes so that sufficient mastery takes place before it is exposed to a typical slalom race environment. A key aspect of this for coaches is ensuring that the correct practice strategy is applied.

▶ Contextual Interference (CI)

This is similar to random or variable practice and is a term used to describe ways in which a coach might vary or interfere with the 'task' to better promote learning, feel or awareness.

Slalom examples of this might be:

- Paddling sections of courses with eyes closed, (improves kinesthetic awareness).
- Restricting the use of either blade (helps better understand the key blade).
- Use a different class of boat (C1 instead of K1).
- Denying use of a particular stroke on a sequence (key blade awareness and breaking of comfort zones).
- Controlling the number of strokes used on a sequence (developing either stroke efficiency, quickness of transfer, acceleration and pacing skills).
- Not allowing any visual preparation of a course at all (overload instinctive reactions and plan B's).
- Deliberate last-minute changes of plan to test a paddler's race-day routine, (mental skills overload).
- Overloading of race facilitation or simulation strategies, personalized commentary, loud music, etc. (mental skills overload).

COACH'S TIPS

• Combining practice strategies can also be useful – so for instance distributed and constant can be used in a 'carry back' situation where the aim of the session is to repeat a hard technical white water move a number of times but with a carry back recovery to work ratio 4:1.

• Achieving balance in the 'practice mix' with clear links to the session/programme aims is vital to successful slalom coaching (see Chapter 1, pages 31-32).

• Use goal setting to be clear whether the aim is to learn/consolidate a technique or to become more skilful at applying it in a slalom context. This is a vital consideration when planning and periodising technique training.

• Remember… to develop the specific actions consider - massed, distributed, blocked, constant practice strategies.

• To develop the perception/skilful application consider - random, variable, contextural interference strategies.

AS A SLALOM COACH – WHAT DO YOU DO NOW?

Whilst slalom coaches might touch on all of these at some stage – especially if they have a wide range in paddler age and ability - random and variable practice strategies are probably the most common. With slalom being such an open skill (i.e. the conditions, requirements, environments are never ever exactly the same) and slalom gates difficult to re-set in the same position – they are liable to get over-used. Consider trying some of the following:

- Varying approach and exit lines to the same gate or 'task'.
- Using different types of eddies to focus on the same upstream technique.
- Courses that have combinations of different moves - as in a race.
- Progressive courses where paddlers repeating a move immediately is not possible, (see sample sessions section).
- Deliberately setting particular moves at the end of a course (or session) to provide a physical overload and adaptation.

IDEAS FOR TECHNIQUE/SKILL DEVELOPMENT SESSIONS

- 1. Coaching is usually a lonely business – how much do you know about how other coaches do run their tech sessions? Preferences for what works/doesn't work are closely guarded secrets – the 'black art' of slalom if you like. Go out of your way to observe (not assist) other coaches and vice versa. Insist on a debrief/feedback opportunity. Be as descriptive as possible in your feedback, rather than evaluative and critical. The process is guaranteed worthwhile.
- 2. Course design and choice of white water environment – how planned and systematic are you? Ask yourself how many times do you return to the exact same move or skill on your next tech session/or block of sessions? Have we got the balance right between practice strategies? How often do you use the gate positions already set?
- 3. Devise your own test courses or sites where you can reset the same or very similar character of moves. Only in this way can you set about evaluating training progress in slalom.

11

Photo 11 Devise your own test courses or sites

- 4. Numbers of course and reps – when as a group did you last revisit these and ask yourselves why you use the numbers/multiples you do?
- 5. How often do you play around with the rest intervals on technique sessions? (Massed vs distributed).
- 6. How does your session structure differ when coaching new techniques in comparison to remedying/changing old ones?
- 7. Be imaginative on your race simulation/contextural interference sessions.
- 8. Check out what methods are used in similar technically-based sports such as skiing, sailing, cycling, etc.
- 9. Periodisation: A lot of time can be spent planning a training year for physical development. How much time do you spend on planning technique development over the year? How many times do you revisit/review the tried and tested formulas of your normal speed tech, speed league, quarters, halves and fulls? Are there alternatives/new ideas/adaptations of these to consider? See also sample sessions in the following section.

As ever with all best coaching practice, goal-setting should be at the heart of good technique and skill development, with the specific needs of the paddler calling all the shots.

PHYSICAL DEVELOPMENT FOR CANOE SLALOM

This section concerns the physical preparation necessary to develop and deliver skilful slalom performance in training and competition environments.

THE IMPORTANCE OF WARM-UPS AND WARM-DOWNS IN SLALOM

See also Chapter 2 p. 76 and Appendix A.

Warm-ups and warm-downs are crucial in the delivery of consistent performance whether in racing, training or testing. As we have seen, a time trial event such as slalom requires 2-3 repeated efforts throughout a day (each needing the paddler to be 100% ready on GO!) with a fair amount of inactivity in between. Every individual will be different and require different types of warm-up and warm-down both in content, timing and duration and the 'start of day warm up in particular will need to be different to any subsequent warm ups in the day. In training the intensity and type of the session will be a determinant factor in the make-up of each warm-up and warm-down.

Neglecting warm-ups and warm-downs in slalom can result in:

- Failure to produce best form in a race.
- Poor quality training for the early part of each training session.
- Delayed recovery and underperformance in any subsequent performance, or session.
- Overall increased injury risk.

Essential elements for warm ups should be:

- Warming up body - increase body temperature and blood flow.
- Preparing muscles for the appropriate level of use in session.
- Coordination warm-up - speed of movement and range of movement.
- Technique preparation.
- Sharpening mental focus on session or race.

Essential elements for warm-downs should be:

- Essential physically and mentally.
- Aids dispersion of chemicals in body (especially upper body.)
- Lowers body temperature in a controlled way.
- Allows arousal to drop and regain mental calmness.
- Opportunity to recall and reinforce good technique.
- Allows focus on fluids and food replenishment.

CANOE SLALOM TRAINING TYPES

Two types of training develop the physical side of canoe slalom:

- Water-based training - with or without slalom gates on either flat water or white water.
- Land-based training - predominantly strength/power development and conditioning; flexibility and functional stability development, or general aerobic development.

This section will focus on these two training types, examining the key physical elements involved and in particular the significant amount of crossover involved between the various training types.

THE INTERPLAY OF THE KEY TRAINING TYPES INVOLVED IN SLALOM

The Training Types table over the page is designed to illustrate and simplify the complex relationships between training sessions, water types, power demand and metabolic stimulus (energy training systems) in canoe slalom. The aim of this table is to help the coach and athlete understand the typical demands and possible stimuli arising from carrying out training of the types described. The variable nature of white water means that this chart should only be used as a guide.

What Are Training Stimuli And Why Are They Important?

Training Stimuli is the term used to describe the training demands imposed by any training session.

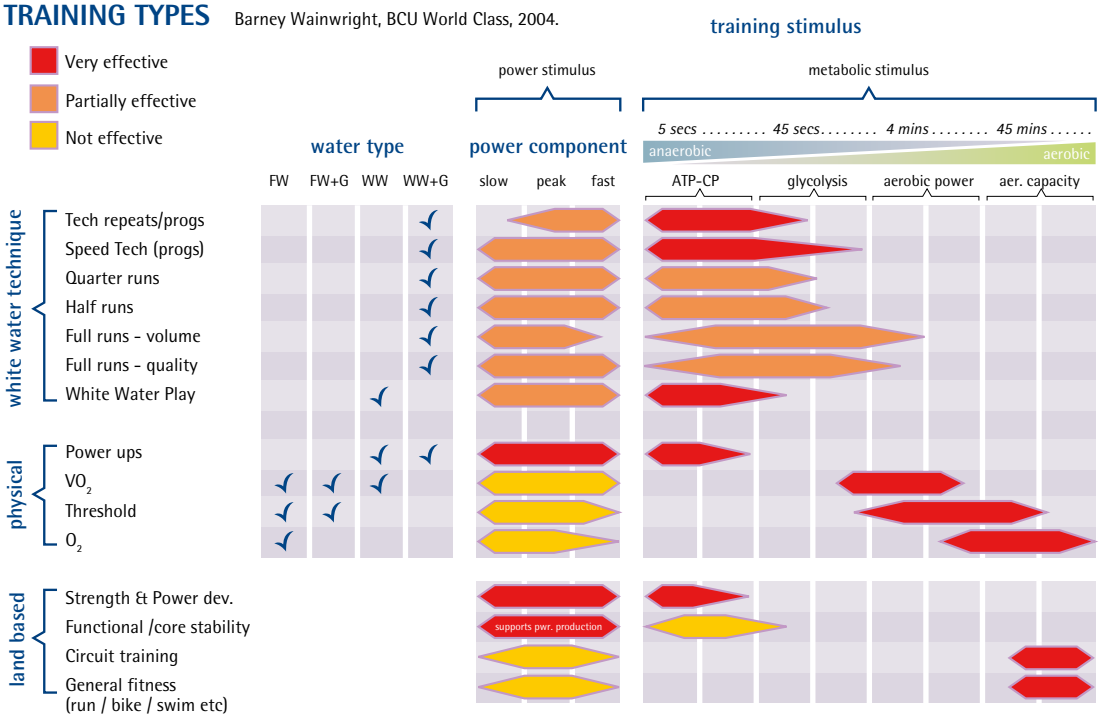

Table 1 Training Types

Simply speaking they are the demands put on the paddler to elicit a training response or adaptation.

Key variables to provide these demands are:

- Length of effort in time and distance.
- Number of repetitions and sets.
- Intensity of effort.
- Frequency of effort (recovery).
- Technical demand of the gates (tight or open).
- Physical demand of the gates and water (slow/peak/fast power; anaerobic; O2).
- Tactical/strategical/mental demand (race simulation or training volume).

These stimuli are the building blocks of any slalom training session and define the aim of that session (see also Chapter 2).

▶ The Challenge In Defining The Training Stimulus

Slalom training types allow much variation in the actual stimulus. For example a particular 'Tech Progs' training session may consist of gate combinations that create a stimulus more towards the fast power component than the slow power component.

Or on a more physically demanding 'Tech Progs' course the rest interval between sections may be short, moving the metabolic stimulus more towards aerobic power and away from an anaerobic stimulus.

Due to the nature of the sport and the water environment it is often found that two athletes carrying out the same training session can actually receive very different stimuli for adaptation. For this reason the training should be carefully planned for each individual where possible and observed or monitored in order that any differences in planned stimulus against actual stimulus can be evaluated then adjusted in the future training plan.

The chart should ideally be used to obtain an improved understanding of the potential stimulus that the different modes and types of training currently used in Canoe Slalom have upon the athlete. Careful consideration should be given when planning training cycles or individual training sessions, and also during the training session itself to make sure that the correct stimulus is provided as part of the short and long-term development of the athlete in question.

As the athlete adapts and develops, modification to the chart on an individual basis will be required. More demanding and specific training sessions will be required to further develop physical abilities alongside techniques and skills that have become enhanced.

Achieving the correct balance of all the different components is both the skill and art of canoe slalom coaching, but the careful planning and recording of training sessions and athletes' progressions will certainly help in understanding as much of this complex process as possible.

▶ The Importance Of 'Power'

This applies both in slalom performance and in any short burst paddling activity such as canoe polo, freestyle or white water play.

Slalom has more recently been described as a power sport, or more specifically a sport where the mechanical power that can be produced has a large influence upon the performance. We must be careful not to be confused by the different meanings that power can convey in relation to slalom or any form of canoesport.

Power can refer to the ability of the metabolic system to provide rates of energy production. The amount of energy which the body can provide at certain rates over durations of time is often referred to as power and can be measured via physiological assessments as anaerobic power or aerobic power (see Chapter 2 Physiology).

Power is also used to refer to the type of mechanical work that the body can generate. For canoesport this specifically refers to the speed and magnitude of force that can be produced in a single paddle stroke or a series of paddle strokes. The result of this is the power. As we have already seen in slalom there is a spectrum of mechanical power requirements that is determined by the white water, the moves, the strokes and the speed at which the paddler wants to travel.

Very simply, mechanical power is a product of the speed at which the blade is being moved and the amount of force being applied to the blade during this stroke. At times, for example when paddling upstream or crossing the flow, on an individual stroke the speed of the pull will be high, but the actual load on the blade will be relatively low. In other circumstances (for example - a holding bow rudder or the first 4-5 strokes re-accelerating downstream after breaking in) the speed of the pull will be quite slow but the load on the blade will be high. The power produced may be exactly the same in each of these circumstances, but it was created by two different loads and speeds on the paddle. You can soon see that in Slalom there are many situations on white water where the combinations of these two factors that influence power are very different.

The faster you want to travel over a particular section or course, the more mechanical power must be produced. However, the additional power may not be spread evenly over the duration of this section as some stroke may require more power than others.

These different types of power on the spectrum can also be thought of as being slow power at one end and fast power at the other end. This refers to the speed of the pull or to application of the force (see Table 1 Canoe Slalom Training Types).

▶ Using The Slalom Training Types Table

(N.b. Use The Table From The Left-Hand Column.)

Column 1 lists the main training types and the main sessions in each. Note, under white water technique 'progs' is short for progressives. Also flat water gates have been included in the physical section although it is recognised that in the early stages of development this will contain a high technical component.

Column 2 lists the four main water training types in with ticks to indicate where the session outlined in column 1 would normally take place: flat water, flat water gates, white water and white water gates.

Columns 3 & 4 show a 'training stimulus continuum' for assessing slalom sessions. The third column shows the power component split into three levels. By using a colour coded system (red = very effective; orange = partially effective; yellow = not effective) it shows how effective a particular session is in developing slow, peak and fast power.

The centre and right of the continuum covers the metabolic stimulus (energy training systems) This is time-based from 0 seconds to 45 minutes and shows the relationship of anaerobic and aerobic work to the key energy systems of ATP-CP/glycolysis/aerobic power/aerobic capacity. Again using the colour coded system the table shows how effective a particular session is in developing a particular energy system for slalom.

SAMPLE SESSIONS FOR SLALOM

Sessions To Develop Fitness

▶ Power Ups

- 12sec max course on WW with 1 or two upstream gates (left/right for balance).
- 2-4 courses with 2-4 repetitions on each.
- At least 2min rest between efforts.
- Maximal intensity.

Notes: The key to this session is to adjust pace for the move then to re-accelerate.

This should not be used as a learning technique – the power must be delivered in the optimal direction. It can be used to consolidate or 'groove' good technique.

Penalties count! Finish session when fatigued or when technique breaks down.

▶ VO_2 Sessions

- Perform a 5min loop on flat water at max effort - Rest for 5 min - Repeat 3-5 times.
- Perform a 4 min loop at max effort - Rest for 4min - Repeat 3-5 times.
- Perform a 3min loop at max effort - Rest 3-4 min - Repeat 4-5.

▶ Threshold Sessions

- 6 - 8 flat water loops - Approx. 6min loop - 60sec rest between loops.
- 10 x flat water loops - 9min loop - 60sec rest between loops.
- 30 - 40min constant flat water paddle - Taking first 5 mins to steadily work up to threshold HR.
- 6 - 8 x flat gate loops (easy open course) - 6min loop - 60sec rest between loops.
- 6 – 8 x white water 5min loops (very open course, 2 ups max) - 60sec rest.
- 4 x white water loops (open course, 2 upstreams max) - 9min loop - 60sec rest between loops.

▶ O_2 sessions

- Recovery O_2: 45 - 60min, very light pace - HR 140-150 bts/min.
- Steady State O_2: 40 - 60min - HR 150-155 bts/min.
- Extensive O_2: 40-50min HR 160-165.

Sessions To Develop Technique

These are the names and details of the most commonly used gate training sessions in canoe slalom. The multitude of terms and names given to sessions can be confusing so an attempt has been made here to reduce some of the 'jargon' and start the process of agreeing a common terminology.

▶ Tech Repeats

These are short courses usually between 10 and 25sec in length – normally with a specific technical theme. They are used for learning or consolidating techniques. Coach and paddler will agree a set number of reps (repetitions) that are repeated before changing to another course. Recovery is normally long – up to 10 times longer than work. Depending on the river conditions paddlers will either paddle back to the start (circulate) or get out of the boat and walk back to the start (walk-backs).

▶ Tech Progressives (Progs)

These are similar to tech repeats but with 2 or more courses paddled consecutively before walking or paddling back to the start. These are also used for learning and consolidating techniques but put more pressure on the paddler by not repeating moves straightaway.

The following group of sessions are all based on a normal full length slalom course (18-25 gates with a running time somewhere between 85 – 105 secs for the fastest MK1.

▶ Speed Techs/Progressives (Progs)

This is a full course split into fifths or sixths (course lengths varying between 10-20sec) so that it provides a complete mixture of course types and challenges. Some open, some tight, some rough and some flatter. Often done in the build-up to races it challenges the paddler to paddle fast and clean. It can be very competitive if done in a group and penalties should

always be recorded. Coaches often add the 5 or 6 course totals together to give an aggregate score for each run.

▶ Quarter Or Half Runs

As the name implies these are full runs split into quarters (25-30sec approx) or halves (50-60sec approx). They can be paddled progressively or as repeats depending on the aim of the session. Progressively means far more pressure technically and physically; repeats less demanding technically and more speed based.

Half runs whether repeat or progressive put serious pressure on the anaerobic system.

▶ Full Runs – Quality

These are simulated race day practice and can be based on any of the formats outlined in the Tactical and Racing Skill Development Section. Single run, 2 run aggregated or 2 run with best run counting. Rest between runs should be 30 to 90min depending on time available and there should be a full competition warm-up and course preparation routine. As well as the technical, the physical and the mental this session tests the tactical challenge of putting a competitive run down 'on the board' in the allotted number of attempts.

▶ Full Runs – Volume

These are full runs (rest in the 8-15 minute range) repeated anywhere from 3-8 times. These put particular pressure on the technical and the physical plus the mental challenge of sustaining full run consistency when fatigued. They are a key indicator of a paddler's ability to be competitive in slalom.

▶ WW Play

This is an informal session with or without gates where the emphasis is on play, experimentation and confidence building. Often pushing the boundaries, it can be in slalom boats or play boats, kayak or canoe. Emphasis should be on the 'relatively' unplanned and on having FUN. Generally there should be long recoveries between efforts.

▶ MEASURING PERFORMANCE

There are many reasons why one might choose to test or assess the athlete:

- To see changes in aspects of physical ability over a period of time to assess the effectiveness of the training undertaken during this period.
- To be able to make comparisons between athletes to help understand the differences in performance between them.
- To help identify physical areas of strength or weakness.
- To try to identify whether an athletes changes in performance are due to physical or technical reasons.

The test that is used is determined by the information that is required. Where possible the tests should be as specific as possible to the event while still allowing you to isolate the aspects of performance that you are interested in. They must also be sensitive enough so that real changes in physical ability can be observed. Tests can either be water-based or land-based (see also Chapter 2).

Outlined below are two effective and simple slalom specific boat-based tests that most people with access to a stretch of flat water should be able to carry out (and easily re-test). They are ideal for a typical flat water club site. These can be timed electronically with beams to 100ths of a second or hand timed to 10ths of a second.

THE 20-100 TEST

Rationale This test was designed to stress the body in a similar way to that which is experienced in a slalom race. It consists of repeated high intensity efforts with some recovery as well as a series of boat accelerations from stationary. It is an excellent indicator of ability to perform in a slalom environment and may also be of interest to similar short boat 'burst activities' such as canoe polo and freestyle.

Protocol To carry out the test you will require 3 buoys or posts. They should be used to mark out a 20m distance and then a further 30m beyond this to create a 50m straight section.

The protocol for the test is shown below:

Protocol For 20-100 Test

Effort distance	Rest Interval
20m	2 minutes
20m	5 minutes
20m	10 seconds
20m	10 seconds
20m	10 seconds
20m	10 seconds
20m	10 seconds
100m (to 50m buoy and back)	5 minutes
20m	10 seconds
20m	10 seconds
20m	10 seconds
20m	10 seconds
20m	10 seconds
20m	finish

Table 2 Protocol for 20-100 Test

The three 20m sprints at the start of the test are opportunities to record a fastest 20m time, and as such there is sufficient rest between them for a full recovery. The third opportunity is then part of the next section of six 20m repeated sprints. Each of these has a quick turn, with the sprint going back in the other direction.

The 100m effort starts after a 5min rest and is an all-out effort without any pacing, turning around the buoy at 50m. Another set of six 20m sprints then follows after the 100m has finished with a 10sec rest.

TIMING PROTOCOL FOR THE COACH

For each sprint there is a verbal start command 3-2-1 go! (paddler's hips sitting stationary level with the post or buoy with the finish as the paddlers hips cross the finish post or buoy) This can be quite difficult with only 10sec between efforts and needs practice. It is in the best interests of the paddler to be as consistent as possible when lining up at the start.

The time for each 20m effort should be recorded as well as for the 100m effort.

Below are some times from the Great Britain National Slalom Teams that can be used for comparison purposes. The total test time is the sum of the first six 20m sprints, the 100m effort and the second set of six 20m sprints. It excludes the first two 20m sprints even if one of these is the fastest 20m sprint of the test. Check your paddlers out against these times, keep a record, do some training then re-test. If the times improve then see if your paddling performance improves as well.

Protocol For 20-100 Test

Class/Age	Fastest 20m	Fastest 100m	Fastest total
Senior MK1	5.8secs	33.3secs	114.9secs
Junior MK1	6.3secs	34.5secs	119.8secs
Senior WK1	6.5secs	37.6secs	129.0secs
Junior WK1	7.4secs	42.1secs	141.5secs
Senior C1	7.0secs	40.2secs	135.0secs
Junior C1	7.5secs	44.0secs	142.0secs
Senior C2	6.1secs	36.0secs	119.9secs

Table 3 GB squad times for comparison purposes

For further information on training the physical in slalom contact: The National Development Coach (moving water) c/o BCU HQ, Tel: 0115 982216 E mail – alan.edge@bcu.org.uk.

PLANNING AND MENTAL SKILLS DEVELOPMENT

This section focuses on the key areas of preparation, profiling, planning and review, goal-setting, developing better concentration and attention skills, developing mental rehearsal and imagery skills, developing the ability to deal with high pressure situations by 'stepping back' and dealing with race day nerves.

PREPARATION, PROFILING, PLANNING AND REVIEW

See first Chapter 1 pp. 16-20.

The starting point in any planning and preparation process has to consider: What are the essential elements in your discipline's profile? What are the strengths and areas of improvement of your performer's profile? What are the time frames for action?

The main areas involved will be :

- Physical
- Technical
- Attitudinal
- Psychological
- Lifestyle

At its simplest planning is a series of inter-related goal setting exercises with the following key points to be observed.

The coach must act as a collection point of all the information needed to profile and plan effectively. This can involve:

- Creating an athlete development pathway identifying where they as an athlete want to end up (long term/outcome goal) and where they've come from.
- Agreeing exactly where they are at that point in time (not always easy).
- What they want from their paddling (often different from what they think they want).
- Agreeing what is realistic yet challenging by referring to any Paddler Development Model (PDM - see section below).
- Agreeing how and when to review, evaluate and re-plan or restate.

This process creates a profile of all the issues that could impact on performance and feeds them forward into the long-term plan for the athlete's paddling career. A PDM is essential in this process as a proven pathway of performance, based on what has produced successful medal winning performance in the past.

MENTAL SKILLS DEVELOPMENT

Here we are considering maximising strengths and minimising the effects of individual weaknesses, goal setting, attention and concentration, mental toughness, mental rehearsal and visualization, stepping back, dealing with race day nerves (see also chapter 3).

As mentioned earlier, goal setting can also have a positive impact on mental skill development by: boosting confidence, enhancing motivation, reducing anxiety, focusing attention better and promoting a positive attitude and self image.

▶ Concentration And Attention

Despite recognizing its importance as a key slalom skill, development of concentration is often left to chance.

The key to concentration is awareness. If a paddler can be completely aware of what he or she is doing or aiming for there is much less chance of 'losing concentration'.

The aim is to control distractions which represent wrong focus at the wrong time. This is especially so if it is known what they need to be aware of at any particular time.

Attention is the act of directing awareness, and can be usefully labelled either internal, narrow external or broad external.

Internal attention is when we predominantly notice our bodies, feelings, or thoughts. It can help to monitor effort or pacing by allowing awareness of fatigue or acid build-up. Our thoughts and inner dialogue can help or hinder depending on what sort of messages we give ourselves, and feelings can be a useful indicator of how we are dealing with the demands of an upcoming race.

Narrow external attention is like a spotlight that illuminates a small area very brightly to the exclusion of all else. Studying a particular move from the bank, or targeting in on the bottom of a pole when approaching a break-out are times when we use this type of attention.

Broad external attention occurs when we are taking in the 'big picture' and need to be aware of overall considerations. When you first arrive at a new race-site it is likely you will be in this mode, taking in as much information from as many sources as possible. This is of course useful, but care must be taken as it's sometimes easy to get swamped by too much information, just as it is possible to miss important detail.

Stress and anxiety tend to change our ability to use these different attentional styles. Under stress (however caused) we often narrow down, as though we are wearing blinkers. Also, we can become too concerned with our inner feelings and get sidetracked by fears of illness or feel weak and unprepared because of 'churning guts'.

Some ideas to incorporate into your training:

- Learn to be aware of where you direct your attention. On flat water sessions deliberately switch your attention around; e.g. for 10 strokes notice your breathing (internal), for 10 strokes the bow of

your boat (narrow external), for 10 strokes look as far ahead as you can (broad external). Notice how this affects you, and whether you tend to get stuck in a particular style, or whether you lapse in your efforts to maintain a style.

Become aware of the important cues you use when paddling on gates. What specific part of the gate do you look at when approaching an upstream? Where do you look on the exit? At the start of a full-length run, is your attention focused internally or externally? Is this consistent ?

Monitor your inner conversations. What sort of messages do you give yourself? Are you 'present' or 'off on a daydream'. Notice this at different times of the day, not just when training. Are you thinking about training over lunch, then... wondering what's for tea half way through a session?

Mental Toughness In Slalom

It's vital in slalom to develop the ability to paddle towards the next gate as if it were the first gate off the start, in other words to remain at all times in the 'here and now'.

This is achieved with a combination of super-effective concentration - having the right attention on the right things at the right time - and well planned process goals that maintain a narrow focus, keeping the next cue or trigger much stronger than anything else. In this way, with practice, it will not be possible to recall events or penalties from a run until after the finish. Nothing is stronger than what is next.

It's also very effective in developing a 'never quit' mentality, a golden rule of any time trial.

Mental Rehearsal And Imagery

These are fundamental skills of racing slalom successfully. Some key principles are:

Physically relax first.

Use all your senses: vision, sounds, feelings, taste and smell.

The image may be outside looking in, or inside looking out. There are no rights or wrongs, so discover which is best for you or which method works best when.

Always try to think through or 'see' the actions at the right speed. A watch can be used to check accuracy but recognise that it is a skill to be learned and developed so don't expect to be too close to start with.

Sometimes it is appropriate to slow down the action - to identify a crux move or new technique.

Always focus on what you want to do. Try to "re-edit" errors once only and then focus on the positive 'getting it right' image.

If necessary, break a complex course down into sections first, but try to finish with a complete 'full run' image.

You have to believe in the image, so what you are rehearsing needs to be within, not beyond, current abilities.

Short regular practice is best. On and off the water right from the start of learning to paddle.

Stepping Back

There are times when we each get 'caught up' in what it is we are doing, sometimes this is helpful if it means we are concentrating and focusing effectively on the job, but sometimes it means we are lost in anger, worry, or just daydreaming. One way of dealing with this is to practice 'stepping back' or to use the jargon misidentifying from how we are feeling or behaving and consider what options we have.

Japanese samurai warriors used this as part of their lifelong training for battle; when scared or fearful they were instructed to think, "There is a warrior who is scared, what should he do now?", rather than "I am scared!". This allows a clearer understanding of what is happening, and allows you to control the feeling rather than allowing the feeling to control you.

To give an example: During a training session you set yourself the goal of paddling 100% clean. The session starts well, but in the second course you start to have trouble with a move and hit a pole. There is no way to recover and the goal of 100% clean is lost; worse, you're having increasing trouble getting the move, you get more and more upset and your paddling gets worse. A vicious cycle erupts; the original mistake leads to anger or disrupted concentration, which leads to more errors, which leads to worse anger.

Stop, take a moment just to settle and relax. Take a few deep breaths and get centred to recover your composure. In your imagination pretend you are an impartial observer and ask, "What is happening here?" Don't be judgmental at this point,

with an answer like "That idiot just ruined his session" - that is not what's needed now.

- Describe the situation to yourself as clearly and calmly as you can, e.g. 'The paddler in the yellow boat hit the left hand pole of the gate with his paddle as he left the gate. He stopped paddling and started to beat the front of his boat with his fist".
- Then ask yourself how is the person feeling or responding, e.g. "He is angry and upset because it was important for him to have a perfect session". Then, still acting as though you were watching this scene as an observer, ask yourself what options does the paddler have e.g. "He can get off and finish the session now or he can repeat the move having learned from the previous run and continue".
- Don't get caught up with 'Why?' questions. They are more likely to drag you back into self-blame or analysis which is less useful in terms of creating a change in your attitude.
- Once your attitude has changed you'll be in a better position to look at the reasons for any mistake.
- Stepping back gives you the option to break out of a vicious cycle. The vicious cycle need not be caused by anger. It may be worry, distracting thoughts, fatigue; anything that disrupts your attention. Its easy to practice stepping back because you can do it anytime and anywhere, driving your car, watching T.V , eating. The more practiced you are the easier it will become at times when you are really worked up, such as important races or the weeks up to selection.

To summarise the stages in Stepping Back:

1. Recognise that something about your mood, attitude or performance is inappropriate or unpleasant:
2. STOP! Take a few breaths and centre yourself.
3. Use your imagination to view the situation as an educated but neutral observer.
4. Ask 'What is happening here?'
5. Ask 'How is that person feeling ?'
6. Ask 'What options does he have to move on from here ?'
7. Don't ask 'why?' - it doesn't lead to new options as easily.

BUILDING BLOCKS FOR SUCCESS

Pay attention to detail - before and on race day. There are several areas that they will have dealt with well before the big race arrives. This might include:

- Don't be fazed by race day - no matter what's at stake.
- Be fiercely competitive and determined to always give the max in training and racing.
- Have realistic goals that maintain a focus on what's most important. Don't create unnecessary stress.
- Know how to maintain concentration on and off the water, and how to refocus when necessary.
- Develop the ability to look at moves on a course and work out what will be the best way to tackle them. Use visualization and imagery on the moves and relate back to practice and training. Make sure you've been there before (or very close).
- Know/practise how to get useful information from coaches, splits and video analysis that is available. Control it, to be right for you.
- Maintain an outer calm and confidence when performing - even when you aren't.

Get on with other paddlers so that they aren't distracted by team hassles.

- Manage your time and lifestyle so they are in top condition to race.

▶ Race Day Butterflies - What Are They And How Can We Manage Them?

A natural physical response to an important situation – especially in a day long time trial environment such as slalom – where there is a lot of time to kill or fill. The gap in your mind between the present and a (catastrophic?) future. Excitement and energy.

Every competitor gets the nerves - some regularly, some once in a while. They needn't prevent you from enjoying racing and performing at your best. Here are some strategies to deal with them:

- Re-frame – put a positive personal spin on them by acknowledgment and acceptance - e.g. welcoming them as a sign you're ready to race.
- Learn how to quickly calm yourself through centreing. Use of a central breathing pattern from your stomach to regain/take control. This can also

be used with a strong positive personal image/ memory.

- Concentrate fiercely on the 'here and now' - your breathing, your movements, your immediate activity.
- A well prepared and individualized race day routine is essential here.
- Have clear process goals that are within your control and focus on the important things you need to do.
- Prepare for race day in your mind - use imagery to imagine yourself dealing with the race the way you want to, feeling strong and confident.

Finally, remember the difference between amateurs and professionals - amateurs can perform well when they're feeling great, professionals can perform well no matter how they feel.

TACTICAL AND RACING SKILL DEVELOPMENT

In this section we will cover tactical challenges of a time trial race demands of the different slalom formats, getting the best out of demonstration (demo) runs, having an effective race week/race day plan, using a stopwatch in training and on race days, the role of the coach on race day, mental skills on race day, use of video on race day and taking and evaluating split times.

THE TACTICAL CHALLENGES OF A TIME TRIAL

Slalom is a time trial event that races over a different course every time with races decided on either a single run, the aggregate of two runs or the best of two runs. The demands of time trials are quite different to any other race format - especially when aggregate runs are involved. Below are just a few 'golden rules' for coaches and paddlers to consider:

- In a time trial it's not possible to see how the other competitor is doing compared to you. It is vital that a paddler races their own run and retains a focus only on what they are doing and not what others may or may not have done. (Even if they have watched an opponent before their run it is risky to make assumptions over the outcomes of an aggregate format.
- Never ever quit on a time trial. Someone could always do worse than you. Be tough and paddle towards that next gate like it's gate one. From the very start this rule should be applied in all technique training. Never quit; complete the move; finish the course whatever – these are key slalom mantras.
- Time trial racing means long race days with a lot of boats doing the same thing. It is not easy to be competitive racing on your own and completely unsupported. Time trials challenge the competitors to organise how they will plan their day and who will help:
  - to gather feedback, (watching, videoing or timing).
  - to rest, relax encourage and support them.
  - just to 'be there for them' in an 'expected' and normal way.
- Mental pressures and expectations in time trials, whilst more indirect and less 'in your face', are nevertheless just as intense. In a two run time trial a simple way of putting pressure onto other competitors is to put a competitive run down on the first run. It might not be the fastest or the winner but it serves the purpose of putting the onus and the pressure to produce onto opponents for the second and final run. Route decisions, risk v time to be gained, quality of feedback gathered, confidence in and knowledge of a paddler's ability are the key paddler/coach challenges here.

Demands Of The Different Slalom Racing Formats

Coaches and paddlers must be alert to the different challenges of the slalom race formats especially in the UK where there are several to deal with. Outlined below are the main race formats and some tips on preparing for them.

ICF Championship Race Format

This is used for all major championships and is prevalent in most countries other than the UK. Day 1 is a two run aggregate qualification race with between 20-40 boats per class, advancing to a 1 run semi-final in the morning of Day 2 and then the top 10 boats in each class going forward to a final run on the same course. Semi-finalists are scored on just one run and finalists on 2 runs aggregated. Up to 6 course changes are made by the course designers for the semi and final runs.

The key challenges of this demanding format are:

- Taking maximum feedback from the demo runs on both the qualification and semi/final days. For early boats off these can be the only chance to assess the course - see the section below on using demo runs well.
- Being solidly consistent in qualification to avoid the big 'blowout mistake'. In training there's no avoiding volume full run skills here, where hours of white water gates grooving skills over full race run length at just under maximum pace will develop the consistency needed to 'feel in control' of qualification.
- Going fast enough in qualification to avoid too early a start number in the semi-final. If you start early then later starters can watch you on the new course.
- Taking qualification seriously enough to maximize familiarity with the sections of the course that remain the same for both days. A lot of the course stays the same so in effect you have 2 practice runs before the semi and final runs. Expectations should be high on these sections.
- Being prepared for the sudden death qualification of 40 to 10 in the semis. This requires much preparation in training with considerable emphasis on bankside preparation, 'getting it right first time' and risk-taking whilst retaining control. Lots of 1 run races, changing the course slightly every run and running some courses 'blind' (i.e. with no visual prep) will all build up the necessary skills and confidence to handle the 'semi-final guillotine'.
- Being controlled enough on the final (4th) run of the event to place a competitive final aggregate result. This final run brings the technical pressure of paddling some familiar sections fast and clear for the 4th time, of repeating the new 3rd run moves as well as dealing with the physical demands of the 4th run in two days. With these pressures top notch runs in the final aren't always needed to win the medals.

▶ Single Run Race Format

Used only in the UK for senior selection purposes and equating closely to the demands of the ICF Championship Semi-final, this format places maximum pressure on 'getting it right first time' with no second chance. It is also a key part of training and preparation for the ICF Championship format.

▶ Super Final Format

Used only in the UK for some domestic races and in 2005/2006 for Junior selection. This format has three runs in a day, first two are qualification with up to 50% qualifying through to a 'winner takes all' 3rd run on a course with up to six changes. This format allows a classic 1 day race (see below) to be run for UK ranking purposes alongside a qualification format race.

▶ Classic Format

A conventional two run race day with both runs aggregated. This is still the most common format in the UK and has been in use since 1997.

▶ Div 1 Format

A three run race day with practice run, followed by two race runs, best of the two runs to count. This is very much how slalom has been for the past 30+ years. With varying types of practice conditions at the lower divisions it is the standard format for all UK Slalom Divisions 1-4.

GETTING THE BEST OUT OF DEMONSTRATION RUNS

At all races without official practice (in the UK – Premier and above) the organizers must provide boats normally from each class to demonstrate the course in sections. This has two purposes: i) To allow the course designers/jury to approve the course. ii) To allow competitors (especially the early start numbers) a view of the course being paddled. Coach and paddler must have a clearly planned approach as to how information is to be gathered. Here are a few options to consider:

- Make sure you have walked the course before demos so that you already have a clear idea of the areas of particular interest, (particularly important if the paddler has an early start number).
- Decide early which bank will be best to watch from. Which view of the key moves is best?
- If there is access to a video camera try to get someone else (coach/parent/support) to video the sections of most interest. It's important that the paddler (and coach if possible) gets the chance to watch demos 'live' without being tied to a camera position.
- Careful note needs to be taken of the quality of paddler doing the demos. Are they giving appro-

priate information on the key moves. The coach might need to 'translate' the demo performance into what is realistic and what isn't. Some moves can be made to seem hard or easy. Be vigilant, coach and paddler should be crystal clear about current race capabilities.

- Have a stopwatch ready to measure any options of the route that the paddlers might demonstrate. Beware of 'big penalties' distorting the split time (see section on taking split times below).
- Coach and paddler need a clear rendezvous soon after demo runs to look at the video and discuss issues arising from the demos that will affect the race plan.

HAVING AN EFFECTIVE RACE WEEK / RACE DAY ROUTINE

By definition slalom race days are long with lots of time to fill between extremely active, high stress competitive race moments. Without a well-planned, tried and tested, personalized and flexible race routine, performance 'on the day' will be compromised. Devising a winning routine starts in training and at less important races –sometimes taking several years to refine. It should cover the 4-5 days prior to the race, race day and the journey home and should consider most of the following:

- All meals during this period – especially the evening meal prior to race day. Most paddlers will be 'on the road' – what are the plans to avoid 'junk'?
- All training during this 'taper' period (see physical preparation section).
- Transport to and from the race.
- Accommodation at the race.
- Who will be travelling with and there for the paddler at the race.
- Race day warm-ups and warm-downs - where, when and how?
- Who will carry the boat to the start/from the finish?
- Race run times - how early in the list? Impact on breakfast and warm-up? Effect on demos?
- How is it intended to watch demo runs and with who?
- When to walk the course - and with who?
- When will the race plan be fixed (everything that you have decided to do from start to finish of the course – key strokes and boat positions, pacing, plan B's etc.) Minor adjustments can still be made after this but the major decisions will have been taken.
- When to look at video and splits - and who with.
- Where to spend 'down time' before and between runs – and who with.
- Does the plan accommodate all possible weather conditions?

Why such a detailed plan? Well, part of it is because all possibilities need considering if you're serious about performing well, such as being able to answer "What if?" with "So what if?". However there is also a subtler reason that is connected with retaining control in stressful situations. A strong, personal race day routine that a paddler has confidence in can reduce stress and race-day nerves, prevent distractions and help keep a firm focus on the key race day goals.

▶ Race Day Goals

Goal setting comes into its own on race day. In the week before a race, coach and paddler should revisit and restate the goals for the race, revising and updating them if necessary. This is one of the key mental and tactical skills at a paddler's disposal for coping with all the varied pressures of race day. Get the process and performance goals for a race right and there is every chance of staying in control and producing a personal best performance. (See also section on goal setting at the start of this chapter).

▶ Use Of Video On Race Day

Video is a key player on race day, but who operates it and how is not straightforward. No matter how experienced a coach is, watching any performance through the camera lessens the quality of 'first hand feedback' that can be given. Action seen 'through the lens' can be severely limited and paddlers will know straight away when a coach's live recall is flimsy and vague. Nothing should compromise what can be seen live especially at key pre-run times like the demo runs.

So whenever possible get someone else to work the camera for you. Be prepared and make sure whoever is asked to help has used the camera several times before and been given feedback and advice on the footage they have taken.

Clearly this needs advance planning as your operator will need to be familiar with the camera and the kind of shots you want. If you have no support, try to set up a video share arrangement with another paddler or parent where you agree to video each other and share the footage. (This can also work well with splits).

Golden Rule: Video is a key part of a coach's race day 'toolbox' and time should be spent in training sessions practising (coach and operators) with the camera - in record and playback mode - so that operating it becomes second nature.

Video Of Demo Runs And Early Boats

Gathering information prior to the first attempt is paramount in any time trial situation, especially where it is a two run aggregate format and 'everything counts'. Here are some top tips to follow:

- Always try to video demo runs but here it is even more essential to offload the camera onto someone else. Plan ahead for this, maybe buddying up with another coach if necessary (see above section).
- Video only key moves/problem areas and especially those with choices or options.
- Time will be short for both videoing and review. Be strict about what needs to be 'seen' and what just needs to be 'split' or observed.
- Review and (if necessary) take split times through the camera right there on the bank after demos. Practise doing this in training.
- Always consider the standard (high or low) of the subject. Are comparisons valid/ useful? Are they worth watching? (See also demos section).
- The coach should always be prepared to look at a video alone without showing it to the paddler – in this way it can be sifted, edited and interpreted.
- Use the footage as a reminder, confirmer of decisions already made. If other options that might confuse have been videoed, the correct decision might be not to show them.

Race Day Simulation In Training

All the areas covered in this section should be practised and simulated in training. Only then will the 'What ifs' stand a better chance of becoming 'So what ifs'. Simulation is a developing and proving ground for race week and race day routines: warm-ups/warm-downs, use of demo runs, walking the course and formulating a race plan, use of video during training and competition, testing pacing and route choosing decisions, taking and using splits, putting race day mental skills under pressure, and much more. It is a fun part of training and can present an enjoyable change from the other maybe more boring or painful types of training.

Using A Stopwatch In Training And On Race Days

Using a stopwatch is part and parcel of training and racing slalom. Coach and paddler both need to own one and be 110% familiar with using it. Most 'Casio style' wrist watches have a lap split facility that will do the job for paddlers. Coaches will need a more conventional stopwatch that offers some memory functions as well. Beware overuse but be 110% familiar with it and have a clipboard and at least 2 pencils (and a pencil sharpener) tucked away in your coaching rucksack.

Why do we need a stopwatch?

- As a measure for hard feedback on where time has been gained or lost, to augment other types of feedback such as video, verbal, kinaesthetic etc.
- As a comparison used alongside a penalty count on choices of route.
- As a motivator - Beat this time! You were faster than him!
- As a record to be recorded and re-tested at a later date to determine progress.
- Used alongside video a stopwatch can provide invaluable augmented feedback.
- As a monitor of pace - Useful when training specific energy systems or developing a paddler's self-pacing ability.

When must we be careful of using a stopwatch?

- In the early stages of development where 'racing it' too fast too soon can lead to poor technique.
- When some paddlers in the group might suffer from competitive or unfair comparisons.
- Too much or too frequent 'on the line' racing can demotivate.
- Too much use of the stopwatch can have the same effect as using a camera - the coach does not see or remember the 'live event' clearly enough! Times will be recorded that cannot be interpreted effectively. You have been warned!

What Are Split Times?

These are clearly identified section times on a course that isolate specific moves so that comparisons (of either route or paddler) can be made to assess time lost, time gained or consistency of repetition. They are most useful on demos and 1st runs but in a Championship Format race over 2 days, 2nd run splits can give vital information on the sections of the course that remain unchanged; 2nd run splits are also important as a record for review after the race, often showing interesting trends and patterns over a series of races.

Here are some guidelines on setting them up:

- Have a clearly marked out clipboard that shows routes and times in adjacent columns. Circle the fastest on each route for ease of reading.
- Always have clear start and finish points in 'neutral positions' (that isolate the move in question) and that can be accurately seen by the splitter.
- Use the body or the helmet as the 'trigger' for the start and finish of the watch.
- Never use 100ths on handheld splits. 10ths are quite adequate for split purposes. (NB - decide in advance whether to round up/down or ignore the 100th).
- Remember the shorter the split the more susceptible it may be to error.
- The longer the split the more mixed/combined moves it will contain.
- In interpreting split times beware the 'big penalty' that renders the split worthless. A good rule of thumb is use only clear runs unless the penalty is very slight or careless.
- Look for trends in consistency v speed when comparing routes and making recommendations for the next attempt.

Role Of The Coach On Race Day

Clearly much of this 'Race Day' section will involve the coach in a central, supporting and advisory role from start to finish. However as a paddler develops and as the coach/paddler relationship strengthens an important decision has to be mutually agreed. Will the paddler over time develop greater dependency on the coach or greater autonomy from the coach.

In my opinion, taking the long view on this, the only realistic choice is that the ultimate goal of the coach should be redundancy. It may not happen overnight but the end game of any coach should surely be to have prepared as independent a paddler as possible, one who does not need a particular coach there all the time and has the skills and confidence to seek out and use whichever coaches or support services may be available in any racing or training situation.

There are clearly stages of progression towards this but, right from the start in training as well as racing, the coach should start to empower and encourage ownership of all training and race day skills. In fact there is much evidence to suggest that long-term coaching goals such as these are some of the major factors in optimum skill retention and transferability, outcomes vital in producing successful Canoe Slalom performance.

To encapsulate this philosophy a phrase favoured by the BCU World Class Slalom Coaches is to define the Coach/Paddler relationship as being…

PADDLER DRIVEN...
COACH STEERED

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ALAN EDGE

A National Coach since 1982, Alan started to work full-time with the British Canoe Union in 1985. He coached Britain's canoe slalomists to their first-ever Olympic medal in 1992 and in the period 1983 - 2000, National Teams under his guidance won nine World titles, 11 World Cup titles and six European titles.

Alan competed as an elite athlete throughout the 1970's, competing at 3 World Championships and becoming World Team Champion at the 1979 Worlds in Jonquiere, Canada.

He coached 3 times World Cup Champion Paul Ratcliffe to Olympic Silver in Sydney and was involved between 1997-2000 in the production and implementation of the Canoe Slalom World Class Performance Programme. In the period 1992-2000 Alan's coaching knowledge and expertise also made a significant contribution to the British Olympic Association's Coaches Advisory Group.

In his current position as National Development Coach, Alan has been responsible for overseeing the implementation of the World Class Development Programmes for Canoe Slalom and is currently involved with the development of the United Kingdom Coaching Certificate across all disciplines within the BCU.

Alan is married and based in Nottingham, spending most of his non-canoeing time keeping up with his young family and trying to master golf and the mandolin!