

GENERAL REMARKS ABOUT RUNNING GATES

The gates on a slalom course can be viewed as mere way stations on an invisible "track" that runs down the river. There is only one track and the object of the game is to go as fast as you can without falling off it. In other words, you have to have proper boat positioning all the way down the course -- not just in the gates.

Many boaters don't realize this; they look upon a slalom course as 30 obstacles only. Actually, it is many more than that and merely negotiating the 30 properly (a clean run) will not guarantee a win. For top racers, what goes on in between the gates is every bit as important as what goes on in them. This is what boat positioning is all about.

The rest of this entire section deals with those situations which present the greatest opportunities for "falling off the track": the upstream gate, the reverse gate, and the offset gate, or collectively what I call the "The Big Three".

I. "The Big Three."

A. Upstream Gates.

By far the greatest chance for error is on the upstream gate and this is usually where the most time is lost in a race. Since there are between seven and eleven upstreams in a World Championship caliber course, two seconds lost on each one can be catastrophic. You simply have got to do an excellent job on upstreams. They are usually the single greatest factor that keeps a good boater from becoming great. For this reason, I treat them in great detail here.

1. Three Variables.

The first point to remember about upstreams is that there are many different kinds -- more than 400. Essentially, there are three variables which determine what kind of upstream it will be: type of eddy; location of the upstream gate in the eddy; and location of the gates immediately before and after the upstream gate.

a. Type of Eddy.

i. The ideal upstream. In this case, the eddy has a well-defined eddy line, the water does not fluctuate much in it, the eddy wall is not steep and the gate is placed

UPSTREAM GATES

I. Eddy Characteristics and Upstream Gates

| Type of Eddy | Entry Technique | Exit Technique |
|---------------------------------|---|--|
| Ideal Eddy | As described in diagrams on pages 34-35 and under each class section. | |
| Powerful Eddy Line | Blast across eddy line, aim a bit low in gate because current upstream is so fast you'll be pushed up into the gate before the boat is fully turned. | Blast out, lean back to keep bow up. |
| Current Coming Through the Gate | Just before approaching the gate, turn boat into ferry angle and ferry into gate so you have upstream momentum as soon as you are in the gate. Pocket theory not applicable. | Watch boat angle so current doesn't push boat into poles. Get out of the gate as fast as you can so this can't happen. |
| Steep Eddy Wall | Depending on position of gate, normal entry or if gate is high, hit eddy a bit low to build up speed for exit. | Blast out, but lean way back. Otherwise you will peel out too soon. |
| Flat Eddy | Carve the turn. Lean back a bit to keep the bow from eddying out too soon. | Paddle back out into current before peeling out. Lean back. |
| Boily Eddy | Water in gate forms a mound and the boat will fall to one side or the other. The poles are usually high enough so the boat's ends will not hit. It's the paddler's body being pushed into them that is the big problem. The boils may be irregular but often they tend to push the boat to one side. Figure out which side that is and scoot up the other side. | |
| Shallow Eddy | Watch out for the inevitable rocks and learn exactly where they are. Do not pry in this gate. | Watch out for rocks on exit and sometimes push off from them. Lean back. |

II. Location of Gate and Corresponding Entry/Exit Techniques

| Type of Eddy | High in Eddy | Low in Eddy | Not high in Eddy but near Eddy Line | Far over in Eddy |
|--------------------|---|---|--|---|
| Ideal Eddy | Ideal entry. Avoid penalty on exit by back. | Fight to hold boat high in gate on entry. Paddle out into current before peeling out on exit. | Entry: don't go for pocket so much. Exit: ideal. | Carve the turn. Exit: get to current before turning downstream. |
| Powerful Eddy Line | Enter low to build up speed for exit. | Same as above, but blast through eddy wall. | Blast in a little low so you can try to throw the bow around quickly and not hit the gate. No pocket because of bad exit angle here. | Carve the turn, paddling hard. Exit: get to current before peeling out. |

| | | | | |
|---------------------------------|---|---|---|---|
| Current Coming Through the Gate | These are all about the same. There really isn't much eddy anywhere so gate positioning doesn't matter. You just have to grunt these out, holding the boat high in the gate and watch the boat's angle so it doesn't ferry into a pole. | | | |
| Steep Eddy Wall | Hit the eddy very low to build up speed and blast out. Lean back. | Hold boat high on entry. Paddle out into current before peel out. | Entry: don't go for pocket. Exit: ideal. | Carve the turn. Blast out and lean back. Be angled upstream on exit. |
| Flat Eddy | Ideal Entry. | Carve the turn | Same as above. | Carve the turn. |
| Boily Eddy | Hit the eddy low to build up speed. Notice to which side boils tend to push you. You may want to hesitate and time your moves with the river's undulations. | Hit it low enough to have sufficient speed and get out of there before you hit something. | Hit it low enough to have sufficient speed and get out of there before you hit something. | Carve the turn, paddling hard but watch out for need for sudden steering. |
| Shallow Eddy | The entry is the same as in the ideal upstream gate except that you must watch out for rocks. Often it is appropriate to push off rocks on the exit so look for the opportunity. | | | Carve the turn but watch out for rocks and use them. |

III. Location of Gates Before and After

| <u>Location of Gate Before Upstream -- Affects Entry</u> | <u>Location of Gate After Upstream -- Affects Exit</u> |
|--|---|
| <u>Situation</u> | <u>Entry Technique</u> |
| Gate is far upstream of upstream gate and on the other side of the river. | Perfect conditions for ideal approach (see page 34). |
| Gate is far upstream but on same side of the river as the upstream gate. | Paddle temporarily away from the upstream gate in order to get a better approach angle. |
| Gate is on wire close to the upstream gate but on the other side of the river. | Ideal approach is impossible, have to ferry into the upstream gate. Bow undercut likely. |
| Gate is on wire close to upstream gate and on the same side of the river. | Ideal approach impossible. Execute "pivot turn" (see appropriate pages in each class section for explanation). |
| <u>Situation</u> | <u>Exit Technique</u> |
| Gate is far below upstream gate and on the other side of the river. | Perfect conditions for ideal exit (see page 35-44). |
| Gate is far below upstream gate but is on the same side of the river. | Conditions still permit ideal exit but with somewhat tightened turn. |
| Gate is on wire just below upstream gate but on other side of the river. | Ideal exit impossible. Boater must ferry out of gate and across the river. For this reason, entry is affected too: don't go for pocket. |
| Gate is on wire just below upstream gate and on the same side of the river. | Conditions permit ideal exit but with very tight turn. |

high enough in the eddy but not right at the top. Finally, the gate is entirely in the eddy but not way over on the other side of it.

ii. Powerful eddy line. A powerful eddy line is hard to break across and this requires a different technique than on the ideal upstream.

iii. Current coming through the gate. Most racers despise this gate because of the difficulty of getting a good turn into it. The danger is that the racer will require many strokes paddling up through it.

iv. Steep eddy wall. This can make the upstream gate very exciting. Coming into the gate, the boat flies over the eddy wall and is in mid air for a moment. The exit is a real thriller, too.

v. Flat eddy. An eddy is flat when the water in it has little fluctuation and the eddy has a large diameter.

vi. Boily eddy. In this eddy, the water fluctuates wildly. Irregular boils erupt all over the place, including right in the gate. This makes it hard to go straight and to keep balance.

vii. Shallow eddy. The depth of the water is so shallow that it is impossible to take a real stroke without banging the river bottom or rocks.

b. Location of the gate in the eddy.

In addition to the kind of eddy, the boater must be aware of the location of the gate in the eddy. There are four possibilities:

i. High in the eddy.

ii. Low, in the weak part of the eddy.

iii. Close to the eddy line.

iv. Far over in the eddy.

c. Location and direction of the gates before and after the upstream.

The last variable influencing proper negotiation of the upstream gate is the location of the gates immediately before and after the upstream, for they will dictate approach and exit angles. There are four possibilities for location:

- i. The gate is on the same side of the river as the upstream itself.
- ii. The gate is way across the river.
- iii. The gate is far downstream or upstream of the actual upstream gate.
- iv. The gate is just above or below the upstream.

There are three possibilities for direction of the preceding or following gate: downstream, reverse, or another upstream.

To write the definitive opus on the upstream gate, one would have to deal with each of the 448 possible combinations of these variables (7 eddy types; 4 locations for the upstream gate; 4 locations for the gate above the upstream, and; 4 locations for the gate below the upstream). Since space does not permit such treatment, I have listed the implications of each variable in charts to be found on pages 30 and 31.

The reader will hopefully be able to go through some of the combinations in his mind by choosing variables from each of the three above groups. To create a format for him to do this, however, in the technique sections pertaining to each class, I set out the proper technique for handling the ideal upstream gate with diagrams and commentary, and note in passing how some of the variables might affect this.

2. Four General Principles behind "Ideal" Upstream Gates.

a. Careful in -- Fast out.

There is a tendency among enthusiastic intermediates to move towards upstream gates too wildly, and consequently either to drop low in the eddy or hit the gate by turning too high. I believe that getting in and out of an upstream gate properly is more a manifestation of boat and stroke position rather than raw speed or strength. The approach to the upstream gate, then, should be in control and deliberate, to assure a first-class entry into the gate. After that, however, all hell breaks loose, as the boater hustles to get out of the gate -- "careful in -- fast out."

This does not mean the approach and entry should be slow. One key to doing a good upstream is converting downstream momentum into cross-current momentum and finally into upstream momentum when actually in the gate. The more speed the boater has while making the proper turn into the gate, the better. It is easier to keep up momentum and speed paddling through an arc

than it is spinning the boat on its mid-point as it enters the gate. The key to paddling in an arc is the approach.

b. Boat position approaching an ideal upstream gate

A common error in positioning is not getting the boat sideways enough in the current upstream of the gate so that you can be driving across the current into the eddy (see Fig. 4-1).

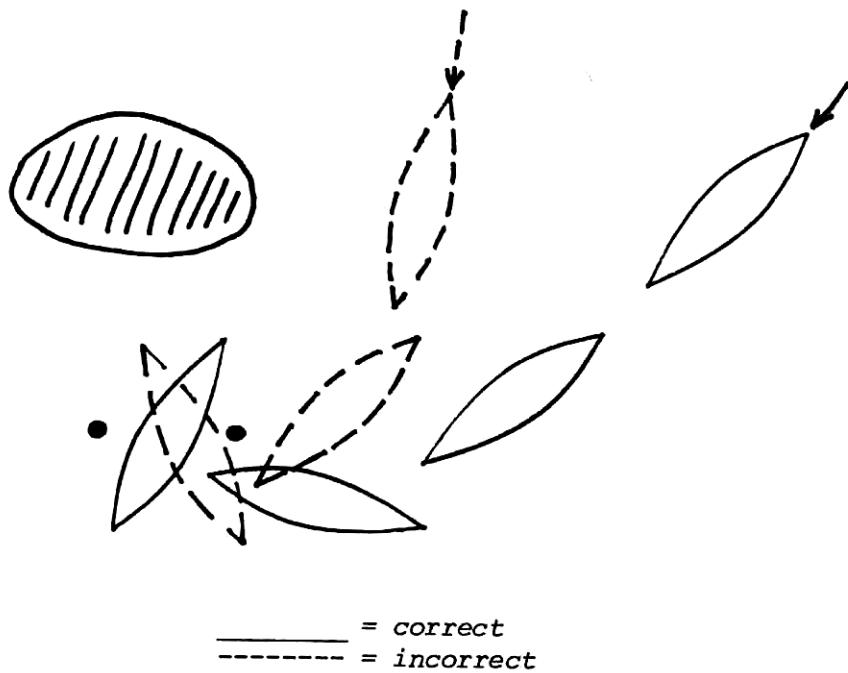


Fig 4-1. Approach to Ideal Upstream Gate.

Being able to drive across the current is such an advantage that it is often worthwhile to do a little jog temporarily away from the upstream gate if the downstream gate immediately preceding it does not permit the proper approach angle. The normal problem is that the boater, in approaching the upstream, has allowed himself to get too close to the shore upstream of the actual gate. Sometimes he compounds this problem by doing a little correction stroke to get his bow back into the main current more. This becomes an overcorrection and wrecks the proper approach angle and stops the cross-current driving movement that is so important for a good entry.

c. The Pocket.

Conventional wisdom tells the racer to wrap himself around the inside pole of an upstream gate (green one in these diagrams). Instead, the boater should attempt to get into what I call the "pocket" of the eddy, for this sets him up much better for a quick exit. It also makes it easier for him to avoid hitting the poles.

The diagram below defines what I mean by the pocket of an upstream gate.

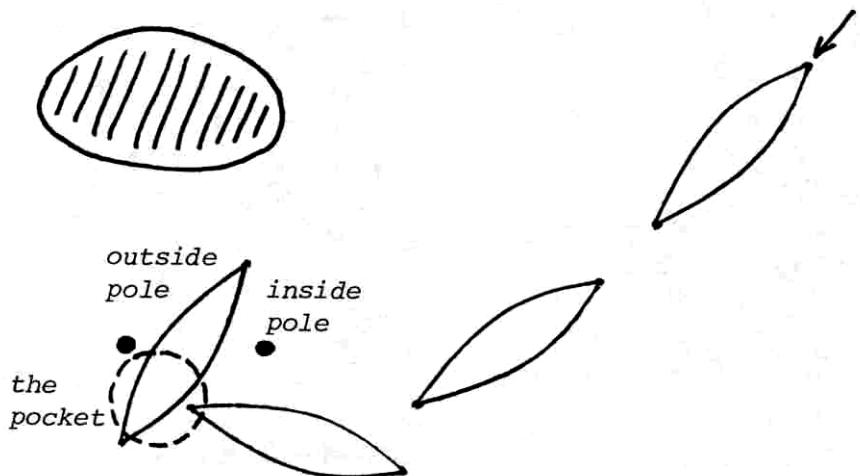
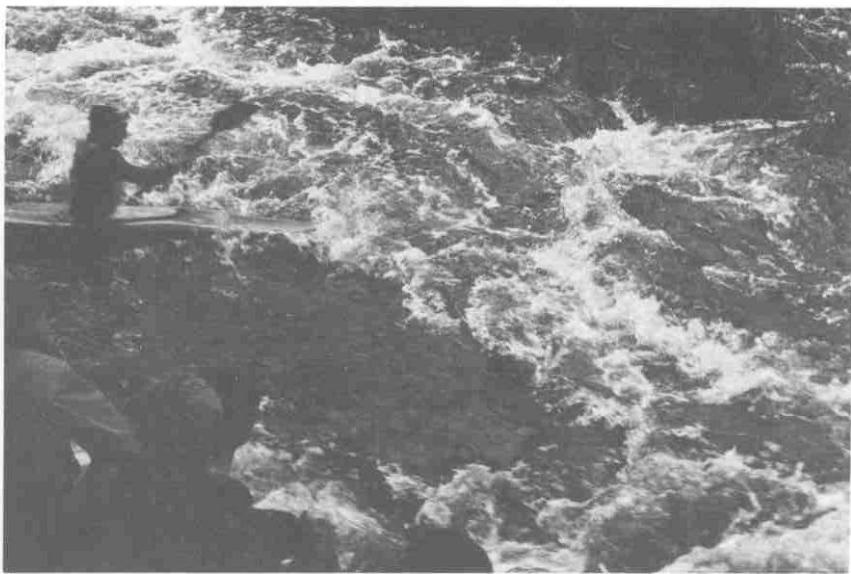


Fig. 4-2. The Pocket.

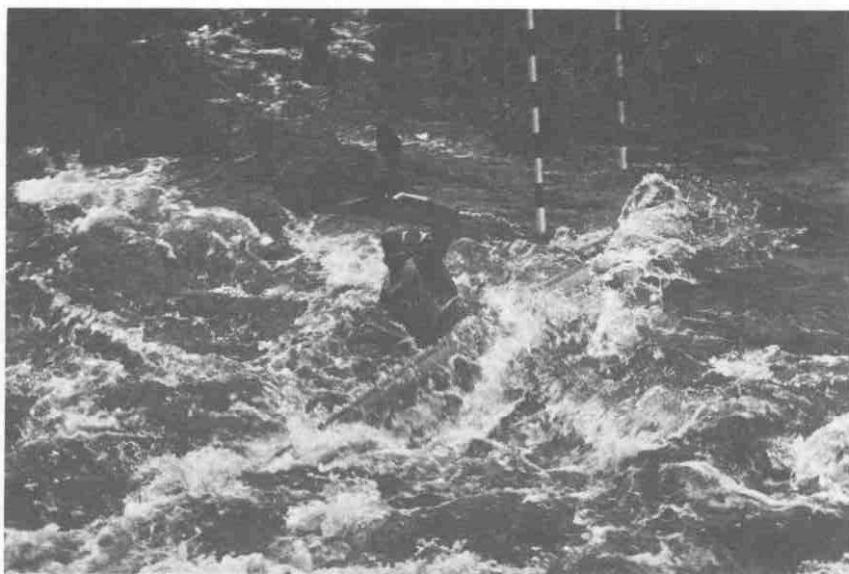
To reach the pocket, the boater has to paddle a bit past the gate and into the eddy a little further than he is used to, and initiate his turn into the gate a little later than he is used to. The aim of reaching the pocket is to set yourself up for a good exit from the upstream gate.

If the boater attempts to wrap himself around the inside pole, two things happen. He has to slow everything down momentarily in order to be sure not to hit the inside pole, and secondly he often has to turn his bow so it faces back into the current more. Both these steps take time -- time he cannot afford. It is far better to paddle into the pocket (when this is appropriate) and do it briskly while having the boat turn automatically into proper position for a speedy exit. In running the ideal upstream, the boater should think the following thoughts:

- o Watch the outside pole.
- o Try to put the bow just inside the outside pole.



1



2



3



4

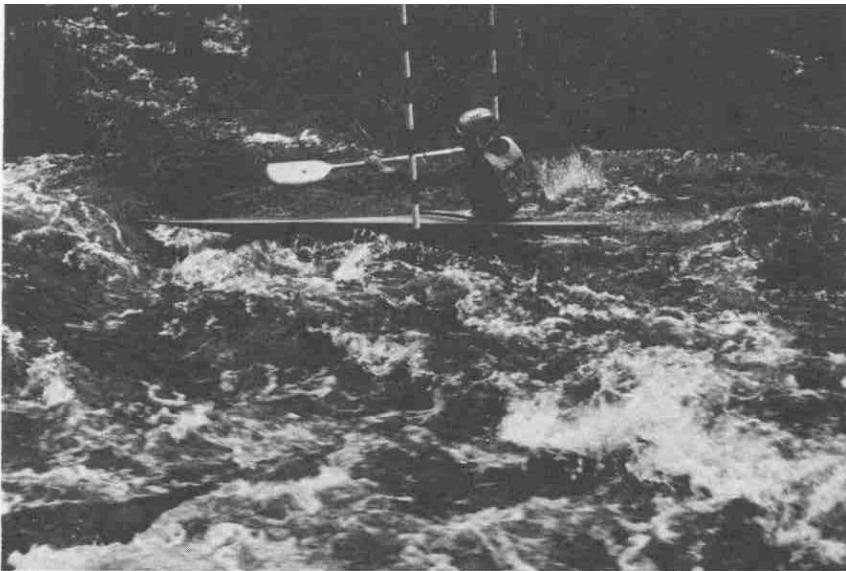
K1

Britain's Richard Fox, Bronze Medalist at Jonquiere, approaches gate 17, an upstream gate on river left, at the Bala Pre-World Championships. The upstream is less than the ideal in many respects: the narrowness of the river makes the proper approach angle difficult; the eddy is small; the upstream gate is high in the eddy and close to the eddy line; gate 18 (not shown), a forward gate, is far over on the other side of the river and not very far below 17.

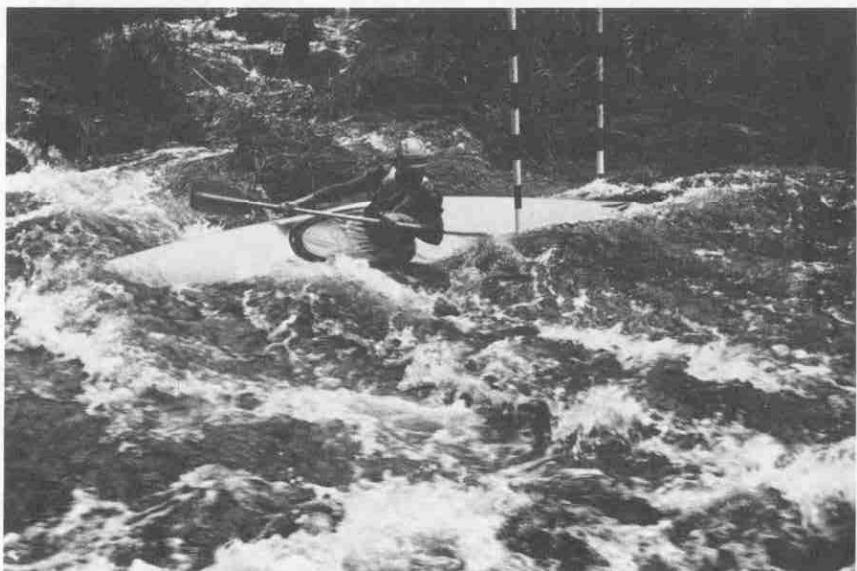
1. Fox begins his approach to the upstream gate.
2. Despite poor approach conditions, he manages to achieve a brilliant turn by inserting his Duffek earlier than usual and thus initiating his turn earlier.
3. He doesn't sneak the outside pole; he puts his bow inside of it.
4. As a result of the gate being close to the eddy line, Fox does not "pocket" the eddy. If he did, he'd be swept downstream prematurely when he exited. (Graham Mackereth photos)



5



6



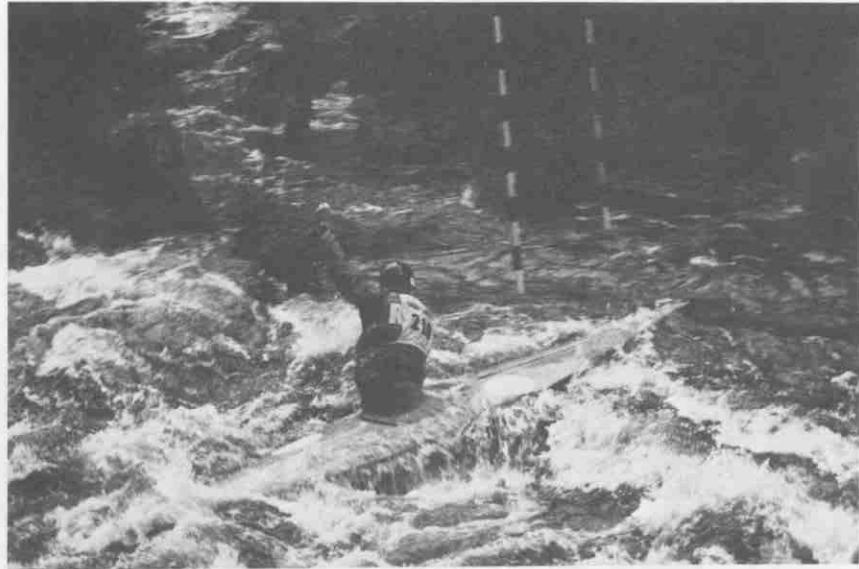
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8

5. Nevertheless, he achieves a good exit angle by leaning to the outside of the turn while doing an upstream sweep. But note how far below the gate he commences this process.
6. When he finishes the upstream sweep, his body is not on, or slightly above, the gate line (as it should be) so Fox lunges his left shoulder forward to get it through the gate. It is a fast, but risky technique.
7. He achieves a fast exit, but the angle is a bit sharper than it should be and the water catches the bow sooner than is desirable.
8. The bow is turned downstream too soon, but Fox corrects by leaning downstream decisively and incorporating a sweep element into his forward stroke as he heads for gate 18.

While there are some minor flaws here, Fox has on the whole, done a first-rate job on this upstream, as well as it can be done under race conditions. He consistently had the fastest splits on this section of the course (as well as the fastest overall running times on each run). (Graham Mackereth photos)



1



2



3



4

C1

Britain's Martyn Hedges, winner of the Europa Cup, approaches gate 17 in the Bala Pre-World Championships (which he also won).

1. Hedges gets an excellent approach angle by starting his turn way out in the current, despite having to do it on his cross draw.
2. He pockets the eddy somewhat while achieving a good, high turn.
3. Hedges is forced to exit the gate with more angle than is desirable because his paddle, being on the right, could hit the shore if he went out too straight. Consequently, the water grabs his bow.
4. But he corrects by doing a cross bow stern draw to prevent the boat from turning downstream too much and missing the next gate.

All in all, a very good job. While not the fastest on this section, Hedges was among the fastest -- as he was on every section -- and this is why he won the race.



1



2



3



4

C2

France's Pierre and Jacques Calori, Silver Medalists at Jonquiere, approach gate 17 at the Bala Pre-World Championships (where they were also second).

1. The Caloris achieve a very good approach angle.
2. They deliberately do not try to sneak the outside pole, carving the turn a bit instead and heading for the pocket.
3. They "pocket" the eddy.
4. Foreseeing the potential for getting swept downstream prematurely, the bowman does a sweep to set up a ferry angle for the exit.

While not exceptionally fast on this section, the Caloris have wisely chosen to take no risks, either. They are fully in control at all times and thus have done a good job here. (Graham Mackereth photos)

- o Try to lean back the whole way around the turn.

Do you sneak the upstream gate coming into it? Perhaps Jon Lugbill explains it best:

When all of us came into this sport, undercutting was the thing to do. Now we have learned that in most upstreams you probably don't want to undercut. We learned that from high speed workouts. You lose if you have to bury your bow. Instead, you should carve the turn -- it's faster.

Wrapping around the inside pole, I believe, is a hold-over from the days when sneaking wasn't possible. You had to keep close to the inside pole to guarantee that your stern wouldn't hit the outside pole (red one in these diagrams) on the way out of the gate. Now, with high poles and low ends, you can sneak the outside pole on the way out.

d. Entry Draw.

In the kayak class the draw stroke at the entry of an upstream gate is a Duffek stroke; in canoes it is either a normal draw or a cross draw. No matter what the class, to assure a high turn into the gate, the entry draw must be converted into a forward stroke so that the boater can pull himself abreast of the gate line. To do this successfully, the boater must do the entry draw in an extended position as far forward as he can comfortably reach, so that there is enough room to pull back on a decisive forward stroke. If the boater does not extend his arms out straight, the forward stroke will be short in the water and thus weak. As a consequence, the boater may not get a high turn.

B. Reverse Gates.

While upstream gates are where the most time is lost, reverse gates are also where significant time is frittered away. This is usually because the racer doesn't practice them enough. Turning around to see where you are is uncomfortable so there is a tendency to neglect reverse gates in practice, or if they are done, only easy ones are practiced.

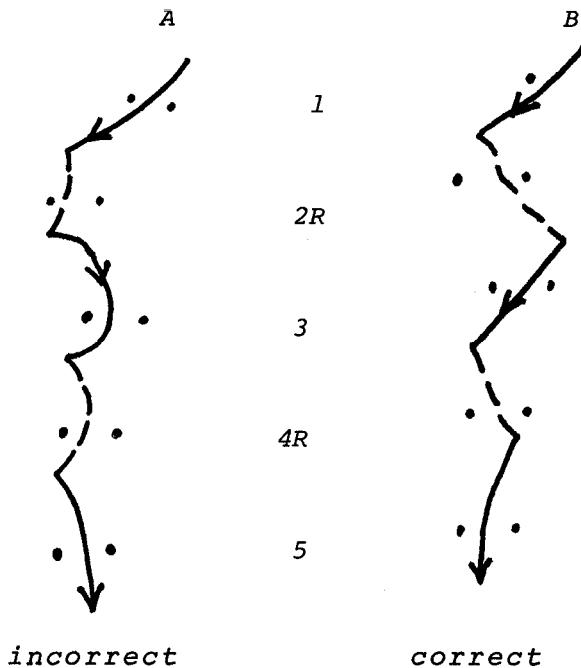
For this reason, I have tried to encourage people to do a lot of practice on reverse gates, sometimes even asking boaters in practice to do upstream gates in reverse. The boaters hate it because they are uncomfortable and sometimes capsize. But nothing will teach confidence and competence in reverse gates better than this. The attitude has to be, "If I can do it

forwards, I can do it reverse."

There are four points to consider in running reverse gates: turning in the proper direction into and out of the reverse gate; turning at an advantageous moment; using the water and; approaching the reverse gate from the side.

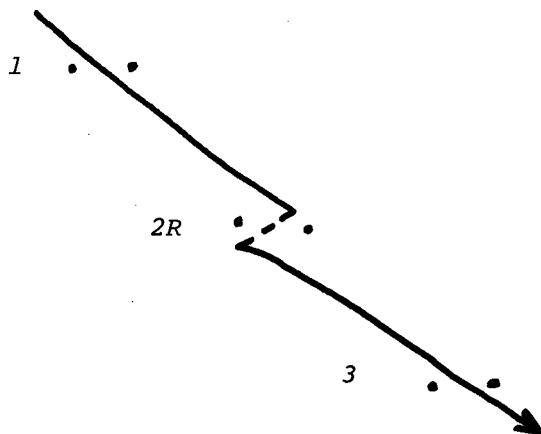
1. Turn in the Proper Direction

The following diagram shows a common problem:

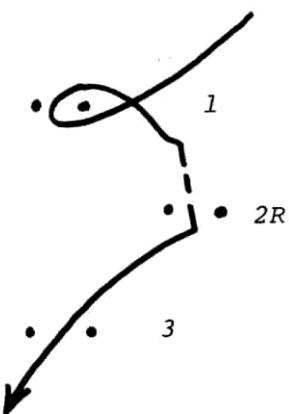


In run A above, the boater has made almost a 360 degree turn from 2R to 4R while in run B he has accomplished the same sequence with less turning. Generally, the more you have to turn the boat, the slower you are. There are some exceptions to this -- C1s are better off turning to their on-side; eddies can interfere -- but I will address them later. Specifically, there are five principles governing turns when running reverse gates.

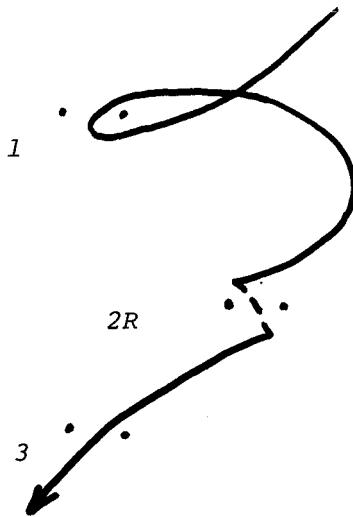
a. The "slam-dunk". When you have a reverse gate between two other gates and all are leading in the same direction, swoop up to the reverse gate from the side, sneak the stern, then the bow:



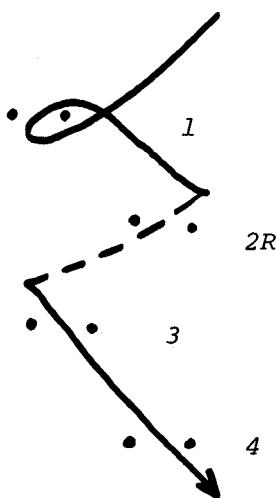
b. Normal reverse. When the reverse gate is between two gates which are both on the other side of the river from the reverse, and the distance between gates 1 and 2 is small, use the traditional approach:



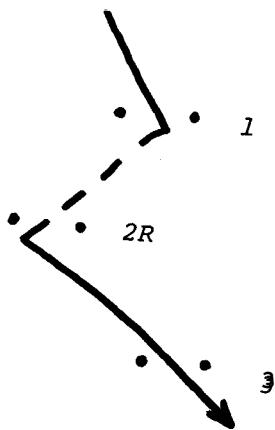
c. "Double pump." If you have the same set-up as above, but the distance between gates 1 and 2 is greater, look for the "double pump". It permits a quicker exit from 2R to 3:



d. "Back around" if you have a situation where the reverse gate is followed by two downstream gates leading to the far side of the river, but starting out on the same shore as the gate above the reverse, try the "back around". The distance between 2R and 3 is important, however. If it is more than 30 feet, you should probably use the normal reverse because you can paddle forward longer:



e. "stern turn." When you have an offset forward-reverse-forward sequence, look for the "stern turn" (sometimes called the "stern dive"). Again, the distance between gates 1 and 2 is important and the 30-foot rule applies:



2. Turn at an Advantageous Moment

The following are the key considerations for turning at the proper time:

a. Distance between the gates. If there is a great deal of distance between the gates, sneaking them may be a "high risk, low gain" situation. If the gates are low, you could easily take a penalty and you will not gain much time by the sneak. In fact, you may even lose time. This is because often in order to turn immediately, you must sink the stern deep into the water and this slows the boat's downstream momentum somewhat. It might be better to "blow through" the gate entirely before turning. David Hearn summarizes:

Keeping up downstream momentum during reverse spins is more important than sneaking a lot.

b. Use the Water. Sometimes, particularly on a well-designed course, the water will dictate what you must do. Here are some considerations:

i. Turn on waves. It's faster because the ends of the boat are in the air. Conversely, do not turn in the troughs of waves.

ii. Use eddies. It is generally faster if you can use an eddy to turn either before or after a reverse gate. This is one of the exceptions I referred to a while back when I was talking about turning in the proper direction for a reverse gate. Sometimes, the presence of an eddy is the overriding consideration and you're faster using it, even if it means the boat has to do a 360 degree turn. This can be a tricky business, however, and sometimes an eddy which appears to be helpful really isn't worth using. It may be that the eddy is generally in the right place and you are tempted to use it. But doing so requires you to paddle a stroke or two out of your way and do a 360 degree turn. You may be faster by ignoring the eddy since it is just out of range and cannot affect you.

3. Approach from the Side

If possible, the boater should approach a reverse gate from the side. This will be much faster because all that is needed is a strong stroke to slip the stern into the gate at the last minute. Thereafter, the boater can quickly continue downstream.

C. Offset Gates

The last of the "Big Three" is the offset gate sequence, which, if not run properly, can result in lost time and unnecessary penalties. Usually, the trick is simply to remember to turn above the gate, not in it. Consider the following sequence:



The broken line above is OK for flatwater where there is no current to interfere with getting from one gate to another. But on real whitewater the solid line represents the better route. In the latter case, the premium is on turning before the gate, not in it. In a good offset sequence, it will not be possible to make the gates smoothly and clean any other way because the current is too strong. Furthermore, even though this isn't the most direct route, it allows you to "shoot the gates" -- paddle hard straight through them -- and this is faster than having to slow down in the gate so you can cut really close to the pole while turning.

There are approximately 16 possible variations in offset gates, as the following table shows.

1. Sequence.

- a. Offset to the right
- b. Offset to the left.

2. Water Conditions.

- a. Flatwater, no current -- turn in the gate.
- b. Flatwater, strong current -- turn above the gate.
- c. Whitewater, strong current -- turn above the gate, use waves to facilitate turning.
- d. Eddy between two of the offsets, which threatens to eddy you out and cause you to miss the next offset --keep the bow up by leaning back. Plan a corrective forward stroke upon hitting the eddy.

3. Spacing of Gates.

- a. Far apart -- easy to turn above them.
- b. Close together -- hard to turn completely above them and you'll have to do some turning in the gate itself. Absolute precision in stroke placement is necessary.

D. Special Techniques.

Any boater who has truly mastered "The Big Three" is well on his way to becoming an elite racer. There are, however, a number of other techniques which, while less important, can make the difference at the very top levels. Some of them follow:

1. Paddle on the Downstream Side of Waves.

When paddling down a line of small waves, a racer should attempt to time his strokes so that his blade enters the water on the downstream face of the waves. This enhances steering since the boat will be on a crest with both ends out of the water, making it easier to turn, and enhances power since the water is fastest on the downstream face, giving a better paddle bite. According to Jon Lugbill, "Steve can beat me in the Model Basin (flatwater) but when there is chop in there and I paddle on the downstream side, I can beat him."

2. The S-Turn.

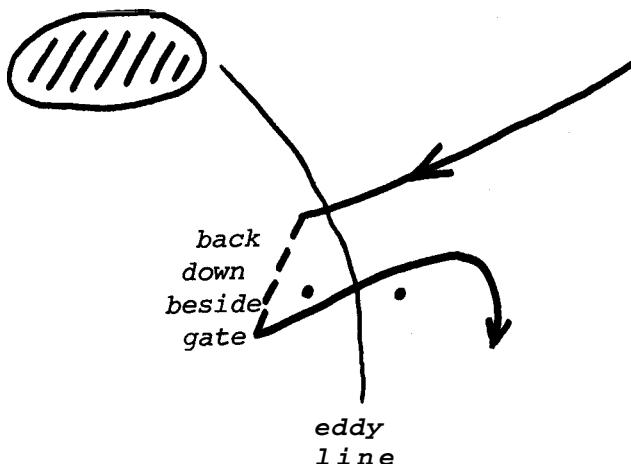
This is a type of upstream gate which requires the boater to enter from one side and exit from the other. There are two things to remember about them:

a. S-turns are generally faster than regular upstreams. This is because you do not have to do a 360 degree turn. Whenever it is possible to substitute an S-turn for a regular upstream, do it.

b. S-turns require special technique. They should not be run as though they were just ordinary upstreams because this is too slow. In each class section I will explain how to do them.

3. The "Merano upstream".

If the upstream gate is right on the eddy line so that half of it is in the current and half in the eddy (the way they have been recently at Merano), there is a special technique. Essentially, the boater eddies out above the gate, backs down beside it, ferries into it, sneaking the bow if possible, and then exits.



This technique is superior to trying to turn the normal way -- that takes too long to paddle against the current. Eddying out above the gate stops downstream momentum so it is easier to accelerate upstream through the gate, especially since the boater is approaching from the eddy side.

4. Downstream gate in an eddy.

This is the situation where a gate which is positioned almost like an upstream gate is required to be run downstream. The problem, of course, is to keep the boat from eddying out and smacking the gate. In general, the key is to:

- a. Approach the gate as much as possible heading straight downstream. This makes it harder for the eddy to grab the boat and turn it.
- b. Lean way back to keep the bow up. This will prevent the boat from eddying out.

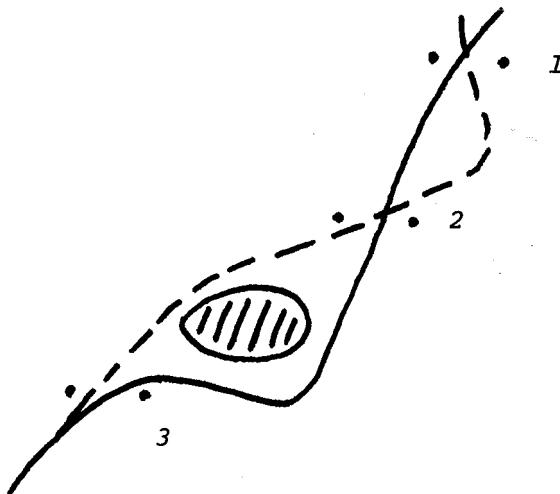
5. Keeping the bow up.

There are several situations in slalom where keeping the bow up is important. As David Hearn explains, "Keeping our bows up is one big characteristic of the Washington Cls." The situations:

- a. The forward stroke. If you can keep the bow up, you can often use it to deflect the waves. This will keep the waves from coming over the deck and hitting you in the lap which slows you down.
- b. Exiting upstreams. It ensures that you will have control and won't peel out before you are ready. Also, keeping the bow up means keeping the stern down which allows you to sneak gates.
- c. Ferrying. If the bow gets under water on the ferry, you're likely to lose the proper ferry angle.
- d. Paddling downstream through an eddy. This situation is described above. Keeping the bow up makes it harder for the boat to eddy out.
- e. Turning into an upstream in the current. Sometimes it is impractical to ferry into an upstream which has current coming through it. In this case, if the bow is allowed to bury on the turn, it will be caught by the current and pushed away from the gate.

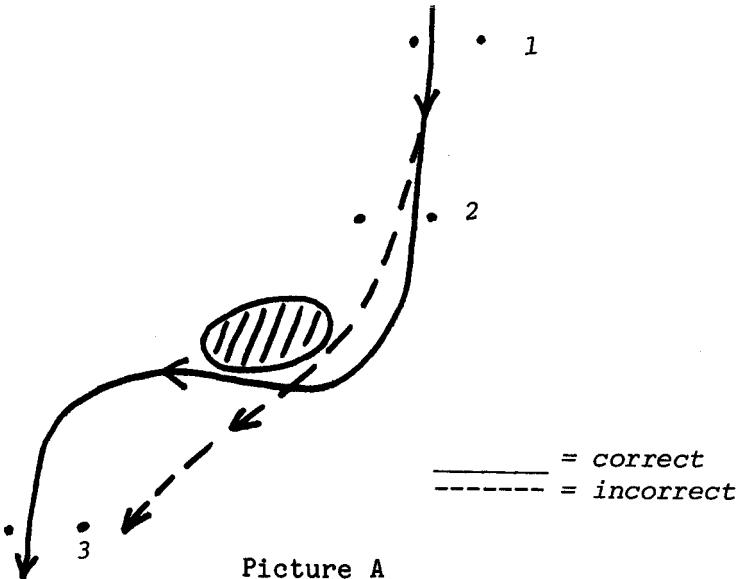
6. Two downstream gates separated by an eddy.

Consider the following sequence:

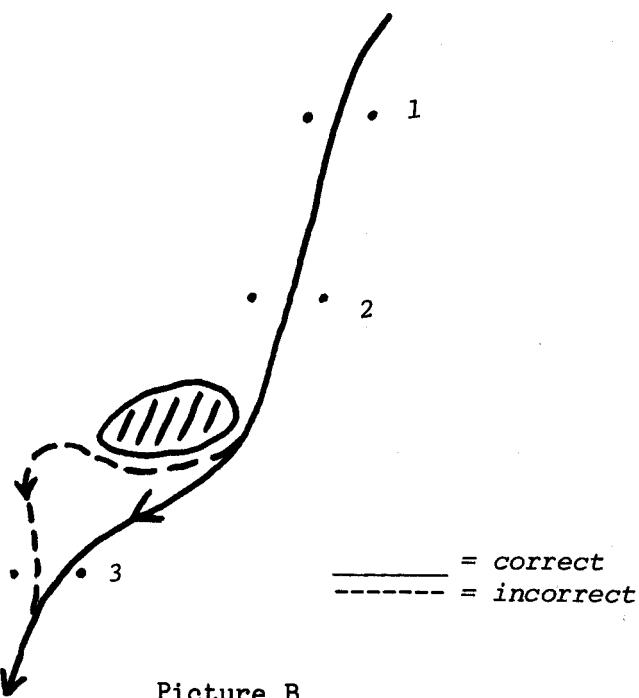


a. Is it faster to go above the rock (broken line) or below it (solid line)? While it certainly is safer to go below the rock -- there's no chance of broaching on it -- it certainly appears to be faster if you could go above it. But is it? A good boater may well think so, knowing that he is good enough to make it above the rock without broaching (a C1 paddler paddling on his upstream side may not be able to do this no matter how good he is). He may even time gates 2-3 above to prove his point. However, make sure you time gates 1-3 -- you may lose so much time setting up for 2-3 that overall you would be quicker with a fast eddy turn.

b. Location of the gate below the rock. If you decide to go below the rock, the location of gate 3 in the above sequence is an important variable. In the words of Ron Lugbill: "If the next forward gate is well out in the current (picture A below), then the boat should be pointed out into the current, or slightly upstream when leaving the eddy." However, if the next gate is very close to the eddy (picture B below), the paddler should not eddy out as much.



Picture A

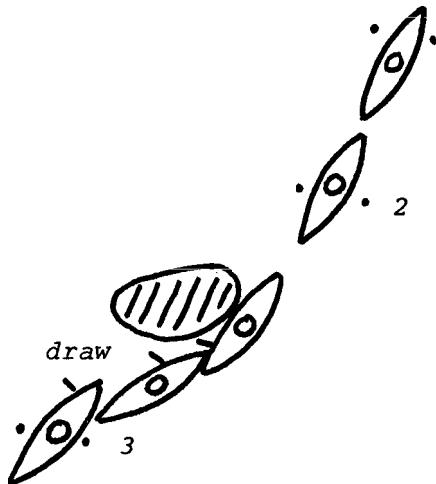


Picture B

In picture A, the boater must be sure to get a good, high eddy turn. This will snap the boat upstream faster and he can get into the current on the other side of the eddy sooner.

In picture B, the boater tries to prevent his boat from eddying out. In the above sequence, this can be accomplished by getting a draw stroke into the eddy as soon as possible and converting it successively into a sweep and finally a stern draw, as shown below. A C1 paddling on the left could not do this and would be forced to eddy out

more, although he should try to minimize this by keeping the bow up.



7. Gates on Waves.

If a gate is located on the top of a wave, be careful not to turn too soon for the next gate. Remember, as the boat goes through the gate on the wave, it is also falling "downhill" so that one end goes down and the other lifts up and can smack the gate. The higher the wave, the straighter you may have to drop through the gate to avoid penalties. Frequently, either nearly straight or nearly broadside will work fine, with in-between angles resulting in penalties. The choice of straight or broadside is determined by the location of the preceding and following gates.

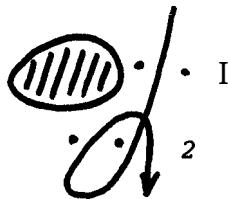
8. Pirouette and Pivot turns.

These are two moves which are relatively unknown in canoe slalom but I predict they will become part of every advanced racer's repertoire before long.

a. Pirouette turn. The pirouette turn is a form of extreme stern sneak since it involves plunging the stern way under the water and is used for tight forward-reverse-forward sequences. The object of the pirouette is to stop the boat dead in the water and sneak the reverse gate right up to the paddler's back. With the stern way down under the water and the bow pointed skyward like a rocket about to take off, the boater then rotates the boat on its axis -- a pirouette -- rather than spinning it flat on the water. When rotating around from reverse to forward, the boater has to bring his bow smashing downwards

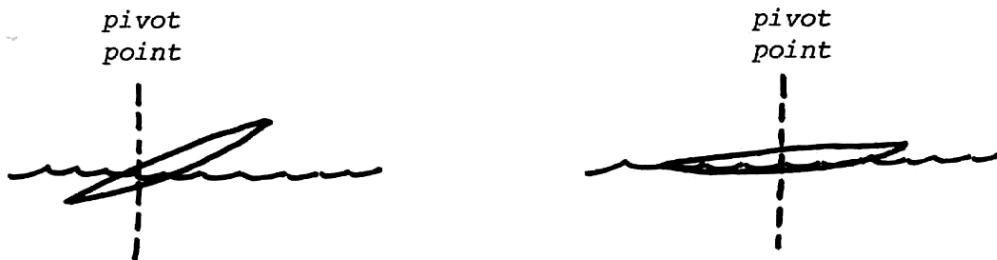
in order to sneak the pole on the exit from the reverse gate. It is a very exciting and dramatic move.

b. Pivot turn. The pivot turn is used for an upstream gate where it is impossible to get a good approach to the eddy, say, because of the location of the gates. Take this example:



Here, gate 1 is almost on top of gate 2 and way over on the same side of the river. It would hardly be possible to make the ideal approach here. Instead, the boater is forced to forego both the cross-current drive and the good angle coming into the gate. He should use the pivot turn to salvage the situation.

He should paddle down through gate 1 and aim for a pocket in gate 2 that is far enough downstream of the gate that he can whirl the bow around without fear of hitting the poles. Then, he should do a violent draw turn while leaning way back in order to raise his bow out of the water. This changes the boat's turning point from amidships to astern of the paddler's body, thus cutting down water resistance to the turn and making it faster. If done properly, the bow will come whizzing around and stop just below the upstream gate. While this isn't as high in the gate as in the ideal entry, it's pretty good, considering the circumstances!



9. Instant Adaptability.

In studying a course, it is important for the athlete to recognize instantly the factors we have just discussed. There simply is not enough time on race day to be leisurely about it so he has to be able to do it by reflex. I find one good way to practice this is to set courses very quickly in practice and then encourage the athletes to memorize them instantly. Then, I change the course after three runs. As the season progresses, an elite athlete will get uncanny in his ability to memorize a 30-gate course as quickly as you can tell it to him.

Some years ago, I read about a method the East Germans used for doing this during the winter, when they couldn't be in gates. Each athlete was shown a little sequence such as the ones in this book and then asked to tell quickly which way to turn. The one coming up with the quickest right answer was the winner. The decision was made in a matter of seconds and tenths of seconds separated the winner from the others. Not surprisingly, DDR team members with many years experience had the fastest reaction time.