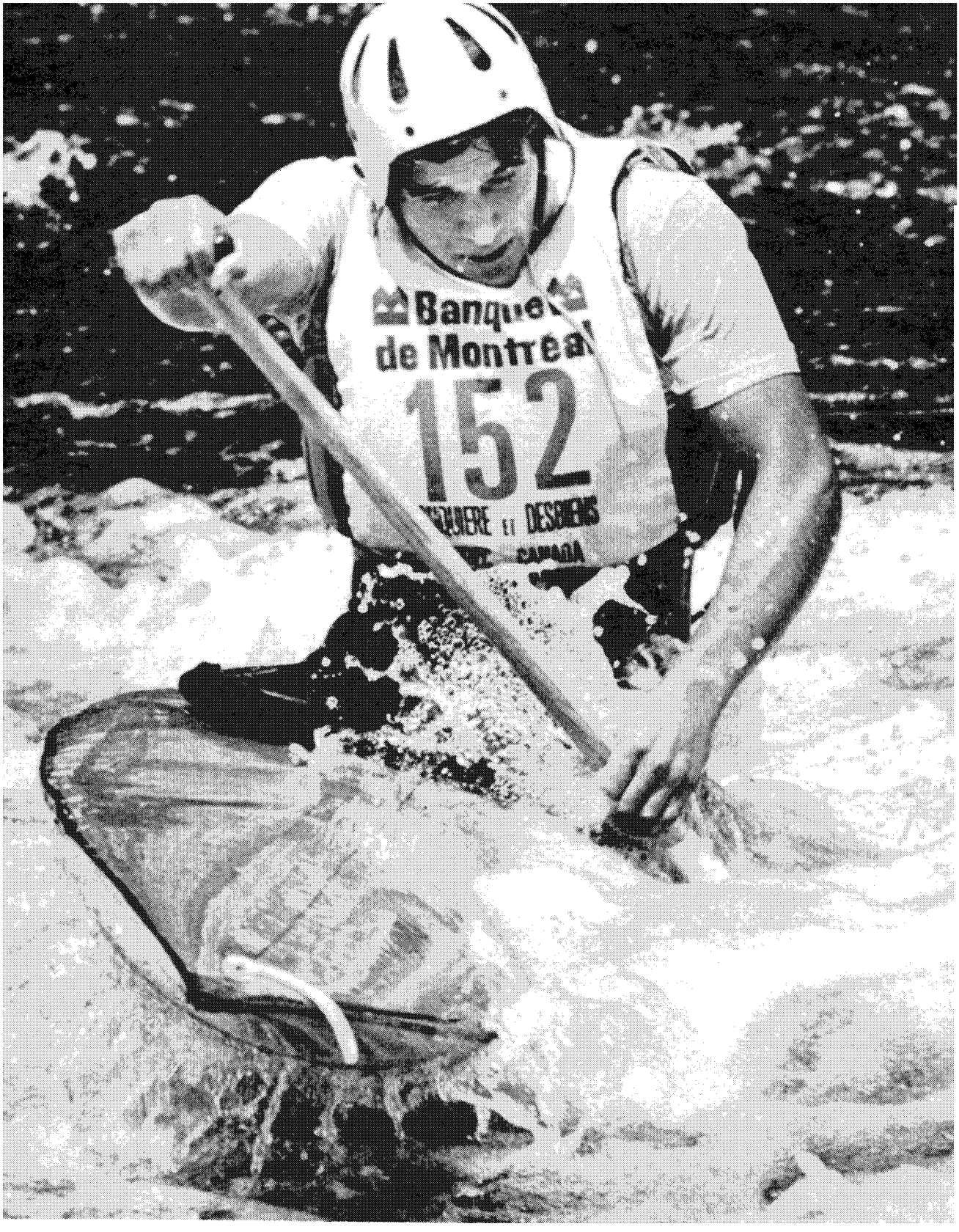


Jon Lugbill, undefeated in the World Championships in Cl, having won the individual and team twice (1979, 1981). (James M. Thresher Photo)

SECTION I : TECHNIQUE

Cl TECHNIQUE

General Remarks

This chapter is based on the gate techniques of Jon Lugbill, Davey Hearn, Bob Robison, and Kent Ford, who, along with Ron Lugbill, have dominated the C1 class for the last several years. Ron Lugbill was in France when I wrote this book and thus I could not consult him. Since the late 1970's, these athletes have completely revolutionized Cl, each year coming closer and closer to the K1 times in the World Championships. Certainly a very big part of this revolution was the rules change in 1973 which permitted a canoe to have ends which were lower than the middle of the boat. That, and the 1971 change narrowing C1s from 80 centimeters to 70, has done a great deal to speed up the class. But in the middle 1970s, the top C1 paddlers were holdovers from the earlier years, who were brought up on the bigger boats and who did not really appreciate what could be done with the new ones.

With sleeker craft, the American C1s began to compare themselves to K1s, always looking to beat them in races. If I had to describe the key characteristic of the top C1s today in one word, it would be "pivot". The concept of the pivot turn -- leaning back and upstream to catch the edge of the boat and thus shorten the waterline -- is found time and time again in the description of the C1 techniques which are to follow in this chapter. The pivot turn, in my view, is the most recent development which enhances the Cl's natural advantage over K1s: better leverage and the consequent ability to make tight turns faster. The Kl's advantage is forward paddling, and thus being able to keep up glide better than the C1s.

Since the pivot turn is such an integral part of modern C1 (and C2) paddling, I would like to take a moment here to examine it in closer detail. Actually, there are two pivot turns, a stern pivot and a bow pivot. Both of them depend on having a certain kind of boat, one with thin ends (from top to bottom) and sharp edges to facilitate slicing into the water. To make sure their edges are sharp, Jon Lugbill and Bob Robison believe that outside seams should be avoided on race boats because they round off the edges a little bit instead of keeping them sharp.

To do a STERN PIVOT, the key elements are:

* Leaning back to sink the stern.

* Leaning away from the stroke side to catch the edge of the boat. This takes many months of practice before you acquire the balance necessary to do it.

* Often doing a backstroke to actually drive the stern and edge under the water a bit. Ideally, however, the pivot should be done with a draw stroke -- the backstroke slows forward momentum.

To do a BOW PIVOT, the key elements are:

* Leaning way forward. This is actually safer than leaning back for the stern pivot because you can see what you are doing.

* Doing a cross draw to drive the boat under the water. This cross draw is a sort of "shovel stroke" because it actually entails a backstroke on the cross draw.

* Leaning the edge towards the stroke this time, to facilitate slicing into the water.

*

Here are some of the factors which make for a "K1 course" or a "C1 course":

K1 COURSE

* Long course with lots of sprints.

* Lots of ferries.

* Lots of hard upstreams, ones which require a lot of forward paddling to get up through.

* Anything which emphasizes forward paddling.

C1 COURSE

* The more turning, the better for C1s.

* Certain upstreams are better for C1s. These are the ones which are possible to get into and out of in just one or two strokes. The reason they favor C1s is because the initial stroke in C1 can be done with more power than Kl.

* Anything requiring pivot turns favors a C1 -- severe offsets and certain tight upstreams are examples. But of course, any one of these moves would not favor all

C1s equally because there is the on-side/off-side advantage as well.

The following factors make a slalom course particularly tiring for C1 and thus have to be factored into the racer's plans for pacing and overall speed:

* The length of the course. The longer it is, the more tiring it is.

* The number and kind of upstream gates. Many upstreams, such as 11 at the Jonquiere World Championships, and ones that are in poor eddies or actually in the current, make a course tiring.

* The number of eddy moves in general not just upstream gates. Any move involving eddies is harder because you have to build up acceleration.

* The height of the poles. This has different effects on different people. Jon Lugbill believes that the higher the poles, the more tiring the course is for him because he can go flat-out. But Bob Robison disagrees: "If the poles are low, it puts a lot of psychological stress on me to stay clean. On the other hand, when the poles are high I feel much more relaxed and therefore it is less tiring for me."

* How continuous the course is. If the water is continuous whitewater and you are constantly fighting to stay on line, it is very tiring.

* Long ferries are tiring.

* How many changes of direction does the course entail? The more it entails the more tiring it is.

* A long sprint at the end of a course makes it very tiring. But if the long sprint is in the middle of the course, it is not particularly tiring. This is because only at the end of the course do you go at full power.

The forward strokes of Jon Lugbill and David Hearn have changed significantly since the last time I wrote about them.* Essentially, the basic elements are still the same, but Lugbill and Hearn are now able to do the entire stroke more in front of them.

The BASIC ELEMENTS include:

* Leaning forward about 20 degrees.

* Twisting with the torso to get more reach.

* Having the top arm locked out straight as the blade goes into the water on the catch and jabbing the top hand down rather than punching it out.

* Keeping the lower arm locked on the pull-through and pulling from the back rather than with the biceps.

Beyond these, however, there are several new characteristics, with Lugbill being the more extreme of the two paddlers. He reaches out more than anyone else and thus inserts his blade closer to the bow. He also pulls the blade out of the water earlier now than he used to, by the forward edge of the cockpit rim. Hearn is similar but not so extreme.

With the stroke occurring so far in front now, it is possible to steer the boat from the bow more. This is accomplished by slight changes in the angle of the blade as it comes through the water on the forward stroke. The effect is one of prefacing forward strokes with subtle draw or sweep actions and even maintaining them well into the forward stroke as it comes through the water.

J-STROKE: The major change, however, has to do with the J-stroke. Instead of using the seam line of the boat as the fulcrum for the J, Lugbill and Hearn are able to do a J in front of their bodies and they often don't let the paddle shaft touch the boat at all. The lower hand skims across just above the edge of the bow deck, and while in Jon Lugbill's case the hand does not make contact with the deck, in Davey Hearn's case it does, with a little telltale squeak. The paddle shaft often does not touch the deck at all, however. The result of this streamlined J is a higher stroke rate, particularly in Lugbill's

* TO WIN THE WORLDS, 1980, pp. 62-67.

case, which is very useful in accelerating the boat for short sprints. On a long straightaway, however, Hearn usually beats Lugbill.

Because of the new way of doing the J, the chafe marks on Lugbill's paddle are just below the throat of the paddle -- on the actual blade itself rather than a couple of inches up from the throat on the shaft, the way they used to be a few years ago.

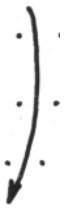
According to Davey Hearn, the torso twist used to get more reach on the forward stroke can also help in steering: "especially if you bring your arm back quickly on the recovery and twist forward quickly, because then there is a slight torquing of the boat which steers it back to your on-side."

WAVES: Jon Lugbill adds another thought:

> Putting in your strokes on the downstream face of waves helps both forward speed and steering. It helps forward speed because the water is fastest there, and gives the paddle the best bite on the water. It helps steering because the boat is on the crest of the wave --the ends are out of the water and the boat responds to steering strokes better. Also, paddling on the down-stream face helps keep the bow up in choppy water.

PERK: Another change in the steering stroke is eliminating it entirely and substituting the "perk", invented by Randy Perkins, a guide and instructor at the Nantahala Outdoor Center in Bryson City, North Carolina. The perk is simply a cross draw forward stroke which is used instead of doing a strong J or stern rudder. The latter two strokes produce a drag on the boat's forward momentum, while the perk does not. However, to make the perk effective, the boater has to be completely at home with the cross draw and able to do a very strong one. Bob Robison makes an important point regarding the perk: "I wouldn't recommend using the perk except for short intervals. It is a very tiring way to go fast."

Forward Gates on Flatwater



On flatwater a high stroke rate is the objective, with minimal steering (J) strokes. Often by leaning the boat up on edge and

paddling hard it is not necessary to do a big J at all.

Also, on flatwater it is possible to lean forward more because there is no need to keep the bow from plunging into waves.

Jon Lugbill adds this point: "I wouldn't do the perk on flatwater unless a gate forced me into an unusual position."

ACCELERATION: What about accelerating the boat; do you consciously take shorter strokes to do it? Jon gives his views:

> If I want to get the boat up to speed quickly I may take shorter strokes. But I do it by taking the blade out earlier, not by failing to reach out towards the bow, or by failing to twist my torso.

Davey Hearn adds this point:

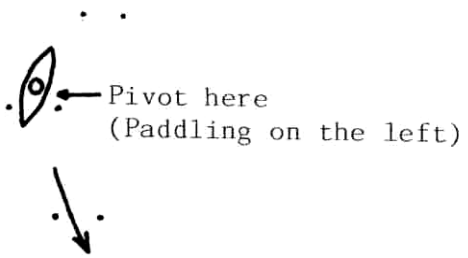
> I never consciously bend my arms more when accelerating the boat,

Bob Robison:

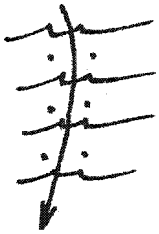
> When I reach a flat section, I try to pick up my stroke rate while at the same time trying to reach out a little farther. It's important not to get jerky on flat sections, though; try to keep it smooth.

Jon makes an interesting point about when he can accelerate the boat quickly and when he cannot:

> Often the move before dictates how fast you can accelerate. For example, if I am coming out of a pivot turn in three offsets, I can naturally fall right into a high stroke rate:



> But if the gates are offset the other way, I have to do more sweeps and cross draws to keep the boat on line, so I can't pick up the rate as fast.



Forward Gates In Waves

"Keeping the boat straight in waves is much harder than on flatwater," says Jon Lugbill, "so I tend to hold on the J stroke a little longer and use the perk (cross-bow forward stroke) a lot."

Davey Hearn adds, "You time your strokes with the waves, breaking your stroke rhythm if necessary to be able to paddle on the downstream side of the waves."

"Most important," he says:

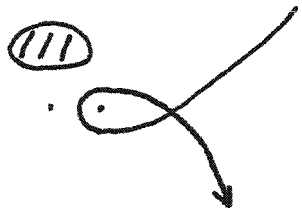
> try to keep your bow from burying under the waves. Getting hit in the chest makes a paddler feel as though for every one stroke downstream he has just taken two strokes upstream.

Another observation from Jon:

> When I'm starting out on a big wave chain and the waves get smaller and smaller as the chain goes on, my stroke rate gets faster and faster as the waves get smaller. It helps steering a lot to use a fast stroke rate in chop.

UPSTREAM GATES

Ideal Upstream



David Hearn's major consideration in running all upstream gates, not just ideal ones, is obtaining what he calls the "sling shot effect," whereby the boat actually accelerates in the upstream gate and shoots out for a fast exit. The specific points he bears in mind:

* Get the proper approach angle -- a cross-current drive towards the gate, rather than coming straight down on the gate. However, in Cl, the really important thing is that the body be on the proper approach trajectory. If the angle of the boat is not right, it can be corrected at the last second.

* Get a high turn. Falling low is usually the result of misjudging the current.

* Keep up your speed. Hitting the gate high is less important than performing the entire move with uniform speed.

* Get a fast exit.

ON-SIDE

Speed on the approach facilitates achieving the sling shot effect. The object is to convert your downstream momentum in stages into cross current momentum and finally into upstream momentum when the boat is actually in the upstream gate. This is best achieved through a wider, more gradual turn, rather than through a tight, sudden one. Keeping up momentum on the approach can be facilitated by

taking a couple of quick, sharp strokes just before the boat starts to go into the upstream gate. Sometimes stronger correction strokes are needed to keep the boat on line.

The boater should aim at putting the bow just inside the outside pole, not sneaking the bow under that pole - unless the pole is quite high. Ducking the bow under water for a sneak slows down the boat's momentum and is thus not the preferred method. If the poles are high, however, it's a different story because the bow doesn't have to go under water to miss the pole and there is no loss of momentum. At other times, submerging the bow may be necessary as a salvage operation but it should not be the ideal objective.

The entry draw should be inserted right next to the inside pole. Often, however, it is inserted upstream of the gate, to help maintain momentum in the turn. For optimum results, the boater should be leaning forward at this stage (although he will probably have to start letting up on this lean in a second). Also the entry draw should be done in an extended position -- "Really stick it out there." Having the weight forward allows the boat to keep up its momentum better. The entry draw stroke should be extended because it is more effective in guiding the boat around the turn since the further forward it is, the less force it takes to turn the boat.

The angle of the blade should be as closed as possible to maintain the most amount of speed. This allows the boat to glide freely around the turn, where a more open angle drags a bit on the boat's forward momentum.

However, after the boat has entered the gate, it almost always happens that the turn has to be tightened a bit if the proper exit angle is to be achieved. For this reason, after the boat has entered the eddy and is turning to face upstream, the boater should lean away from his stroke a bit. Catching his edge like this will tighten and accelerate the turn, thus adding to the "sling shot" effect. By leaning to the offside, however, the boater probably won't be able to keep leaning forward as much, but he shouldn't worry about it. "Also," Jon Lugbill points out, "the paddle is kept in the water here and sliced forward, thus accelerating the turn even more."

With the draw stroke in an extended position, it is possible to convert it into a powerful forward stroke once the forward momentum of the entry starts to die and thus continue to propel the boat up and out of the gate. One reason for this is because there is a lot of distance through which to pull this stroke. Also, the muscles are stretched in the extended position and are thus better able to exert force.

This combination draw/forward stroke should be so powerful that after it is finished, the boater's entire chest is in the gate, or at

least most of his deck. Indeed, in some extreme cases where the eddy is very strong, it may be possible to go in and out of the gate entirely with this one long pulling draw which is able to exert continuous pressure through slight changes in the blade angle.

If the entry draw is not done in an extended position, the boater will either have a weak forward stroke because there isn't much distance over which to pull it, or he will have to waste time feathering through the water into an extended position so he can get a strong forward stroke. Either one takes more time.

Interestingly, according to Davey Hearn, the eddy itself helps to stretch you out into an extended position, if you let it. "For a split second, when the draw stroke is in the eddy and the boat is not, the eddy pulls the draw away from you and leaves you in an extended position."

Once the boater starts to lean to his off-side, he inevitably starts exerting more drawing force on the blade. The stroke is no longer just a bow rudder, but a forceful draw/pull. The stroke both turns the boat towards the current more, in order to get a lot of angle in the gate for a good exit, as well as drives the boat up through the gate.

After the completion of this draw/forward stroke, the boater has his chest, or at least most of his bow in the gate. Now he quickly feathers forward for another long draw/forward stroke which turns him downstream and throws him out of the gate.

"The key here," Jon Lugbill explains, "is to extend your stroke out and get a good catch in the current. Good extension will get your body past the gate line." During the stroke, you maintain the lean to the outside which completes the sling-shot effect: with the stern deck under water a little bit, the current hits it and causes the boat to shoot out of the turn. Doing this also ensures that you will sneak the pole on the way out of the gate. Indeed, if the racer has a good boat and has executed this move correctly, he can sneak just about anything.

Bob Robison adds a word of caution to this, however:

> While we lean upstream when exiting eddies on relatively easy water to help whip the boat around, very often on a very fast current or in big waves, we have to exit the gate leaning downstream.

MISTAKES

* Boater has bad approach angle, coming straight down on the upstream gate rather than driving cross current.

* Boater doesn't have sufficient speed on the approach.

* Boater tries to sneak the poles too much. He either sneaks the inside pole or the outside one and loses time because he has to duck his bow under water (if the poles are low) and loses momentum. Or he hits the poles.

* As a result of a bad approach or other reasons, the boater does not lean forward coming into the gate, and thus the momentum dies. The boater leans back in order to get a pivot turn into the gate. But if the poles are low, he has to jerk the bow down to sneak them. He may feel that this is faster because of the sensation of the bow whizzing around. But because of the lost momentum, it is actually slower. Only if the poles are high --and there is no need to jerk the bow down -- is sneaking faster.

* Boater does not do entry draw in an extended position and has difficulty getting a high turn. As a result he uses an extra stroke to paddle up and loses time.

* Boater starts entry draw too soon, opens up the blade angle too much, too soon, and the boat's momentum dies before thrusting the boat up into the gate.

OFF-SIDE

Many of the principles for the off-side upstream are exactly the same as with the on-side upstream. Getting the right approach angle, leaning forward, keeping the blade toward the bow on the cross bow -- these things are all the same as in the on-side upstream. In fact, often the off-side upstream will be even faster than the on-side one because of the tight position the boater gets into for the cross draw and because it is easier for him to keep his weight and paddle forward.

On the approach it is possible to accelerate the boat better immediately prior to entering the eddy. This is because the power strokes are done on the on-side. They are big sweep/forward strokes which occur just before you go over onto the cross draw. These

sweep/forward strokes should have enough forward element in them to vigorously throw the boat into the eddy.

If you have not achieved the proper approach path it may be possible to get it with a last minute correction, although the result will not be as fast as if you had done it correctly. The correction is a stern draw, done at the end of a sweep/forward stroke. The stern draw pulls the stern around, but it also pulls the boat away from the gate slightly, so it disrupts the desired momentum into the gate. If you have to do a stern draw, however, "the further back you can get it, the better," says Davey Hearn.

As in the on-side upstream, the boater should aim to lean forward, keep his blade up towards the bow, and put the bow just inside the outside pole. The first two are quite easy to do but the third is harder.

Because of the physical contortion required by the cross draw, the boater can lean forward more easily which is perfect for keeping up glide. By pulling down on the top hand and thrusting out with the lower, it is possible to get the blade further forward on the cross draw than it is on the regular draw.

However, there is often a tendency on the off-side upstream for the boat to slide across the eddy a bit more than it does on the on-side upstream. This may necessitate sneaking the outside pole, which is actually faster on the cross draw than with the on-side.

To perform the sneak properly, the boater must not have leaned too far forward when inserting the cross draw in the eddy, so that he still has some room left to jerk his weight forward at precisely the right moment to duck the bow under the outside pole.

The key elements are: the ability to adjust the angle of the boat edge and to exert torque with the waist so that the bow of the boat slices into the water outside the outside pole and pops up inside it. In order to do this, the boater has to lean hard on the cross draw, knowing that the momentum of the turn will keep him from capsizing. Leaning is important because it gets the edge of the boat into the proper position for slicing into the water and under the pole.

Another problem that you have with the cross draw that you don't with the regular draw is that it is more difficult to lean away from the cross draw in an attempt to catch the outside edge and get a snap turn. In a very stable eddy, however, it is still possible and desirable to do.

Even with the existence of these problems, the combination of the fast approach made possible by the sweep/forward strokes and the

ability to get both the body and paddle forward usually more than offset them.

EXIT: Should the exit be done on the cross draw or should it be done with a big on-side sweep? "Now, I usually do it all on the cross draw," Davey Hearn explains, "unless I need more force to drive the boat up through the gate. In this case, I use a forward/sweep stroke. You have more control on the cross draw and it is more restful. As long as you have enough speed coming out of the gate, you don't need a sweep." Jon Lugbill adds, "When dealing with an ideal upstream, stay on the cross bow because of the time required in getting back to the other side. It is important to extend out on the cross bow when leaving the gate to involve the larger muscles of the back and waist."

Flatwater Upstream

On flatwater upstreams, there are many variations from what is done in the ideal situation. Most of the variations are designed to tighten the turn around the gate since there is little or no eddy to help with this process. Pivot turns are the method most used for tightening the turns.

ON-SIDE

* Plan to enter the gate higher than with an ideal upstream. While the preferred path on good whitewater is to head for the pocket, because there is an eddy to help you make a smooth fast turn, "on flatwater the important thing is to take as short a path as possible," according to Davey Hearn. Thus you should wrap around the poles more than you would in whitewater.

* Don't lean forward so much coming into the gate. There is little or no eddy to help the turn and if the bow is down, it plows the water on the turn which is slower. It's better to keep the bow up a bit.

* Since you can't get as much forward lean, it's harder to get the blade far up towards the bow, and you have to turn the boat from a less extended position. However, by pulling back on the top hand and pushing out with the lower, it is possible to push the blade a bit further forward. Still, chances are that you will not have anywhere near as much extension as you would in white-water. In this case, you have to "pay before you play," as Davey Hearn puts it: "You have to start out with a lot of speed coming into the gate." The speed helps to sustain the boat's momentum around the turn.

* Particularly if the poles are very low, the draw stroke has to be inserted more upstream of the gate and out to the boater's side more. This hurts glide, but since there is little or no eddy, you aren't going to get a whole lot of glide anyway. And with the draw in this position, it is possible to yank the bow into the gate faster. After you start pulling on the blade, you may have to let go for a second and feather it from above and outside the pole to below and then inside the pole.

* Lean back as you do the draw, back and away from it. This will catch the outside edge and put the boat into a pivot turn. The smaller the eddy, the more the lean, and the stronger the pivot turn.

* If done properly, the boat will surge or squirt out of the pivot turn and you can build off this to accelerate for the next gate. If you can convert the entry draw stroke into a forward stroke just as this surge comes, you can get the "sling shot effect" on flatwater.

OFF-SIDE

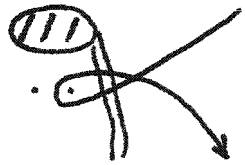
* The approach is the same as on the on-side...accelerate the boat just before entering the turn.

* Don't lean forward, however. Try to do the cross draw while leaning back a bit and away from it. This is awkward and takes practice but it will snap the boat around if done properly.

* You have to take several forward strokes on the cross draw in order to get up and out of the gate.

* If the poles are high, you can exit on the cross draw. But if they are low, and they are likely to be on this type of gate, a forward lean, such as you would probably have when on the cross draw, might cause your stern to come up and hit the pole. You probably want to exit on a sweep here, both to sneak the pole and to accelerate the boat,

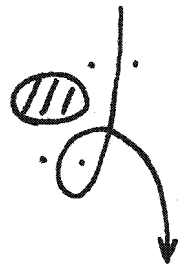
Entering An Upstream Through A
Strong Eddy Line



In this situation the objective is to avoid eddying out on the eddy line and "wallowing" there for a moment, thus losing all forward speed. To avoid wallowing, it is best to drive the boat vigorously across the eddy line, even if this means having to hit the eddy a bit low, and paddle back up fast. This keeps up momentum much better than trying to turn high and getting caught on the eddy line.

Another tactic to avoid eddying out on the eddy line, is doing a back sweep on the downstream side to keep the bow from turning upstream too much too soon. While this is certainly not the preferred way to do the move, it is a reasonable operation. If at all possible, do the back sweep on top of a wave. "Even if you have to do a back sweep to get a good approach angle, it's a lot better than eddying out on the eddy line," summarizes Davey Hearn.

Bad Approach



ON-SIDE

In this situation, it is impossible to get the desirable cross-current drive. Here a pivot turn is the best way to do an on-side turn.

Aim for a pocket in the upstream gate which is far enough downstream of the gate so that the bow can whirl around without fear of hitting the poles. Go past the gate on the approach. Lean way back to get the bow out of the water while at the same time doing a powerful draw stroke. Try to lean away from the draw, too.

The draw stroke should be extended out to the side in much the same way as it is on a flatwater upstream. Open the angle of the blade so that it "slams on the brakes" and turns the boat sharply. Choking up on the shaft will help get the draw out further to the side of the boat, as will holding the draw more horizontally rather than vertically.

Once the bow is up, the shorter waterline will facilitate a fast spin and the bow will come around very quickly. The trick is to know just when to let up on the draw action and quickly feather the blade forward, just as the bow is starting to fall down, so that you can take a full forward stroke to continue to propel the boat up through the gate. If you time it just right, you can convert the falling down of the bow into some forward momentum, which makes it easier to get the boat started again.

If more force is needed to start the pivot turn, instead of a draw, the boater can begin with a huge reverse sweep, flipping the blade over quickly and converting it into a draw. But, as Jon Lugbill adds, "with the Batmax an off-side lean with a draw is usually enough to get the bow up."

"Most of the time," says Jon Lugbill, "I go under the outside pole with the bow on the entry. I don't try to do a pivot on the cross draw because I can't get the bow up very high that way. If the poles are high, you can try for a cross draw pivot, but not otherwise. It's harder to keep your momentum up on the cross draw, so I just go for a tighter turn."

This is much easier for a C1 to do paddling with his on-side downstream. The reason is the amount of speed he can generate on the on-side compared to the off-side, This may mean that in some cases a C1 is better off switching sides for this move ("although I never have" -- Jon Lugbill). I think Kent Ford explains it well when he says: "If I can make the move on my off-side, it is never faster to switch; it's only if I have doubts about whether I can make the move at all that switching is better."

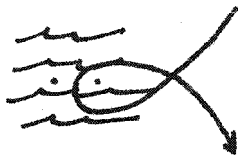
Getting across the river quickly is facilitated by ferrying with a flat ferry angle, that is, with the bow pointed at the far bank and not upstream. Kayaks always have an on-side downstream, so they can always generate speed. The greater the speed of the current relative to the speed of the boat, the more the bow has to be pointed upstream.

Thus, when moving across the river with the on-side downstream, the C1 paddler should aim for as flat a ferry angle as possible. But when he has to do this move on his off-side, he inevitably will not be able to get up as much speed and will have to keep his bow pointed upstream, which will slow him down even more, The obvious solution is to switch and in some extreme cases, this is advisable.

But another solution is to do a lot of off-side ferries in practice to build up your cross-bow sweep. Davey Hearn adds:

> Leaving upstreams on the off-side used to be really bad for us, but we're getting better at cross draws, and that has made it a lot easier. My cross bow sweep can be almost as strong as my on-side sweep now.

Building up the power of the cross bow sweep is something that can be done through very specific weight lifting in the cross bow position or, as Jon Lugbill asserts, "by building up flexibility in off-side turns."



Upstream in Current

If the poles are high usually the quickest way to do this gate is to turn into it with a pivot turn, rather than attempt to ferry into it. The pivot turn must be done early enough so the bow can be inserted just inside the outside pole, rather than sneaking the pole. A powerful forward stroke must be exerted at the right moment to keep the boat in the gate. Another forward stroke is needed to get up through the gate. The exit is usually done with an upstream lean unless the current is very fast.

ON-SIDE

The angle of the approach is a key variable. If it's cross-current, you should try for a more or less normal entry, but keeping the bow just clear of the current. However, if the approach is straight-on, you have to use a pivot turn.

To get a pivot turn in the current, you may well have to start with a reverse sweep and convert into a draw.

If the current is really fast, you have to turn above the gate and ferry into it as best you can even though the poles are low. Needless to say, this type of gate is a real "grunt".

As in all upstreams it is generally better to keep the boat moving by being able to paddle hard even if this means entering a bit low and leaving a bit high. This is contrasted with wrapping around the poles but having to lose all momentum because of fear of touching them.

OFF-SIDE

The choices are much more limited here. You have to keep the bow up on the cross draw. "But the key," says Davey Hearn, "is getting real power on the cross draw by reaching out to the side and yanking the boat around."

While the pivot turn method described above is usually the preferred method for Jon Lugbill, Bob Robison makes some important comments on another method:

Often a pivot turn doesn't work so well if you are forced to make a wide approach to this kind of gate -- say, because of the position of the gate before it. You need to be able to spin the boat almost 180 degrees in order to get a really good pivot and if you come in from the side, there isn't room to do this without clobbering the outside pole. So in this situation I tend to just plan to come around wider and sneak the outside pole. I feel safer taking my bow under the pole rather than having it up in the air, even on the cross draw. I have a great deal of confidence in my cross bow sneak. Our boats have such sharp edges that there is little water resistance to sneaking and I feel I can control it accurately.

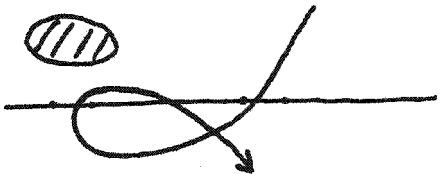
PADDLING BACK UP

If you have hit the eddy low and are paddling back up for the upstream gate, and there is some current coming through the gate or from the side, you should think about the following:

* Aim for the pole nearest you, not the middle of the gate. You can even put your bow under that pole if it is high enough. The boat will ferry into the middle of the gate.

* Be ready to use a "holding draw" (or cross draw, depending which side you are paddling on) on the upstream side to keep the boat from ferrying into the pole nearest the current. The holding draw has to be started BEFORE the current really catches the bow, however, or else "it's too late and the draw won't work." You should cultivate the ability to do holding draws on the cross draw, too. While at first glance it may seem possible simply to do a sweep stroke instead, it often happens that you are too close to the pole to do a sweep without hitting it. Being on the cross draw gives you more room.

Gate Before Upstream On Same Wire



ON-SIDE

* Be extremely careful on the approach to the down-stream gate so that the timing of your strokes is perfect; otherwise you can wash downstream. Possibly you might do a cross bow sweep before the gate. Having some speed facilitates this turning stroke.

* While some angle on the downstream gate is helpful, it is not as critical as on the off-side or in Kl.

* Start a draw stroke while passing through the down-stream gate.

* Lean away from the draw and back so you can get a good pivot turn, especially if it will enable you to catch a wave and ride it into the gate. If you are not going to catch a wave, it may be more effective simply to get up a lot of cross current momentum toward the upstream gate, even at the risk of hitting it a bit low.

* If the current is really strong, do a back sweep to start the pivot, then quickly convert it into a draw.

OFF-SIDE

* Be careful of your stroke timing, as on the on-side.

* Get some angle on the downstream gate, the same as you would do on the on-side.

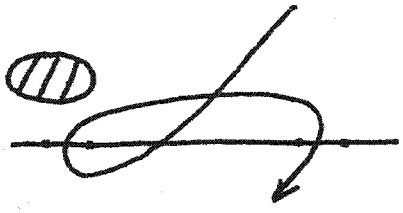
* Use a big sweep to start the boat turning before the downstream gate in order to get the angle. "It has to be a big sweep, so the stern will go under the water," explains Davey Hearn.

* Go onto the cross draw and start it at about the same time you would a draw on the on-side. The cross draw starts above the gate and feathers through it. "If you can do a cross bow stern pivot, the effect is about the same as a pivot done on the on-side," Jon Lugbill adds, "but it is really important to get your weight forward just as the boat enters the eddy."

* Transfer quickly from the cross draw to the on-side again so that you can quickly start paddling over to the upstream gate. "Normally you do not want to stay on the cross draw very long."

* Be sure to keep the bow up when you transfer back over or else the current will catch the bow and make it harder for you to get over to the upstream gate fast. But once in the eddy, make sure your weight is forward.

Upstream Exit to Forward Gate On Same Wire



ON-SIDE

* Make sure you go high enough out of the upstream so you can get sufficiently above the downstream gate to turn into it.

* Do a normal draw turn, if there is plenty of room, or possibly a little pivot turn on a draw stroke.

* If there is not much room, lean back and do a pivot turn on a back sweep.

OFF-SIDE

* Go high out of the upstream gate.

* Do a bow pivot to get into the downstream gate, as follows:

    a. As you approach the downstream gate, put in an "extra powerful sweep" to initiate the turn.

    b. Reach way out to the side and behind your body for a cross draw stroke and start it with a back stroke "almost like shovelling" -- to really accelerate the turning of the bow.

    c. As you yank on the cross draw, plunge the bow into the water, being sure to lean well to the cross draw side so that the edge catches and the bow slices into the water.

    d. The boat's pivot point will advance from under the paddler's body to in front of the cockpit.

The Cudamax and the new Batmax have very low decks that are well suited for performing the bow pivot. The thinness of the deck, from a side view, means that it is much easier to keep the bow under the water. It is less likely to pop out than other boats. In addition, it has very sharp edges that help the boat slice under water.

Many people tend to overuse the Merano upstream, doing it in places where it really isn't the fastest move. Jon Lugbill makes this point about them:

> I seldom do a Merano with my on-side upstream unless the gate is angled, and at least partly in the current. In this case I'd do a Merano because I'd get swept downstream too far if I didn't. But if the gate was not angled, I'd just do a regular eddy turn, even if the gate was partially in the current.

ON-SIDE

There are essentially two basic ways of doing the Merano upstream. In the first, you use a pivot turn. In the second, you keep the boat flat. The pivot variety is described below:

PIVOT:

* Approach the gate with a downstream angle, pointing just to the outside of the outside pole. This makes it possible to break the eddy line before you start to turn the boat. As Bob Robison puts it, "the key is simply to avoid spinning out too soon, which is likely to happen if you come in from the side. If the previous gate demands that you approach the upstream from the side, then you probably want to do a regular upstream turn, not a Merano."

* Initiate the turn with a reverse sweep, slightly above the gate so that your momentum will carry you below it. Use a pivot turn to spin the boat if the poles are high, a normal reverse sweep turn if the poles are low.

* Once the pole is behind your back, push more with the reverse sweep to get the boat behind the gate and to maintain control.

* Depending on the position of the gate after the Merano upstream and therefore the type of exit you want, you can either take a few forward strokes and leave the upstream gate with a draw stroke (and a pivot turn) or (riskier) convert the energy of the pivot turn coming into the upstream gate into forward speed by quickly feathering the reverse sweep stroke into a pull stroke and squirt out of the eddy. This latter option works best if the gate is fully in the eddy -- which is often not the case with Merano upstreams.

The second way to do a Merano is not to use a pivot turn at all, but simply to spin the boat flat on the water. Bob Robison tells about this method -- the FLAT SPIN:

> I think there are 2 places where you want to do Meranos; with angled upstreams in the current, and in shallow areas. In the latter case you have to rely on shallow strokes and the current to spin the boat. The pivot turn works well when the water is deep, but you can't do it in shallow water because you'd hit your stern on the bottom. In this case, it is best simply to keep your bow down and let the eddy on the bank side of the gate spin you around. If the gate is on the eddy line, this can even be as fast as a pivot turn.

OFF-SIDE

It is considerably harder to do the Merano on a cross draw. This is largely because it is harder to get as close to the gate as with the other side, because when you do the cross draw the elbow of the upper arm sticks out so far that you can hit the gate if you are close to it. Thus, you have to leave more room. "These gates are very awkward," explains Bob Robison,

> unless the gates are very high. Fifty percent of the time, what is a Merano for a lefty ends up being a regular off-side upstream for me.

If you wish to do the gate as a Merano, however, here are the moves you will likely have to do:

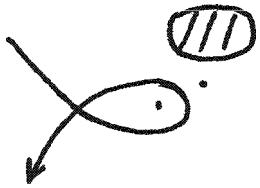
* Approach the gate the same way as with the on-side upstream, as described above.

* Use a cross draw to turn the boat. "If the cross draw is really good and strong, you can go right up and out of the gate on it" (but not very often). If it is not,

you have to switch to your on-side and take several normal forward strokes, which is a lot slower.

* Another entirely different option for a Merano on this side is to do it as an on-side S-turn. Essentially, you do a big pivot turn against the current. You can either start the pivot turn with a back sweep and then convert it into a draw, or better still, start it with a draw way out to the side and sort of behind your body. This stroke does not retard forward momentum as much as the back sweep does. Often this one big draw stroke will put you through the gate and in control. You will be very close to the poles "but you just have to live with that," as Jon Lugbill puts it.

Angled Upstream



Jon Lugbill finds that "you enter an angled upstream just the same way you would do an eddy turn on a river run, that is, very fast, with a lot of lean. But the exit is trickier because the outside pole is further upstream and therefore easier to hit."

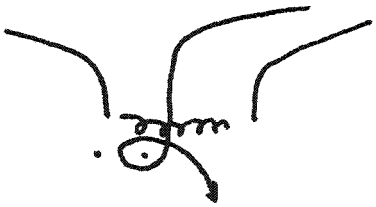
Davey Hearn's views:

> This move is similar to the ideal upstream except that the poles are in a different relationship to the boat than in a normal upstream. The inside pole prevents you from placing the paddle as close to the center of the gate line as you can with a normal gate.

The boater also has to remember to drive deeper into the eddy than he would on a normal upstream. "For an off-side angled upstream," explains Bob Robison,

> I will usually wait a split second longer to throw in my cross-draw stroke than I would on a gate that is not angled. This way when my bow swings around towards the outside pole, I still have the ability to pull on the cross draw at the last second to sneak the outside pole, if need be. If I put the cross-draw in too early, the turning momentum of the boat would die before reaching the gate, thus making sneaking very awkward and difficult.

Upstream After A Drop



Usually there are the following points to remember about running an upstream gate after a drop:

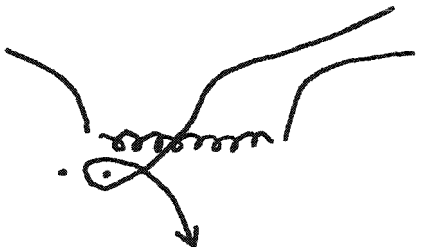
* Keep the bow up by leaning back as you go over the drop.

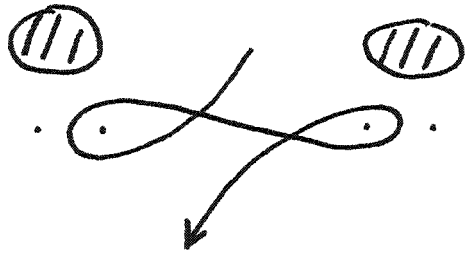
* Have lots of speed going over the drop.

* Land with the bow up, then do a normal upstream turn. "It's a lot easier to land with the bow up in today's small boats," says Davey Hearn. "It's easier to get the stern down because it is thinner, and consequently keep the bow up."

In some cases, you might be obliged to undercut the inside pole on the entry. This might happen, for example, if you had to go down a steep drop right before the upstream gate.

In still other cases, you might want to go down the drop on the side farthest away from the upstream gate so you can hit the hole at an angle and get shot into the upstream gate.

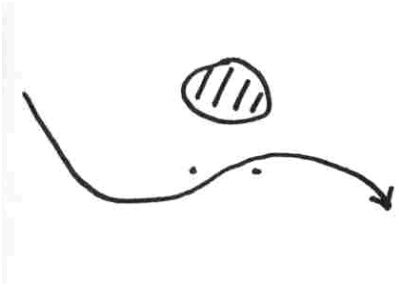




"A double upstream is different from a normal ferry," Jon Lugbill says, "because you go across the river at a flat ferry angle, even if it means that you lose the angle a bit and enter the eddy a bit low -- a pocket effect."

> If you just ferried across, you'd lose momentum and just slide under the inside pole. It's faster overall to go across with the flat ferry angle. The same thing is true on the off-side, although it's harder when you have to do J's and cross-bow sweeps.

S-Turn



ON-SIDE

The first part, the entry draw, is the same as for a normal upstream. But then you have to prevent the boat from eddying out too much, especially if it is a narrow eddy and the current is pushing on the stern while the rest of the boat is in the eddy. To prevent the boat from eddying out, do a big sweep, converted into a stern draw. You may have to do another stroke like this to get out of the eddy and turn downstream. After that, the rest is the same as a normal exit from an upstream.

OFF-SIDE

The same principles apply as on the on-side, except that you have to do the sweep/stern draw all on the cross draw, which is hard,

VARIANTS

On either side, if the poles are very low, you have to catch the upstream edge a bit to help sneak the stern under the pole, but quickly convert to a downstream lean in big water.

Leaving an Upstream On a Reverse Sweep

This is done to get a tight turn out of the gate. Often it is just a pivot turn with no other considerations, but in certain situations, such as coming out of holes or really violent eddies, the upstream lean associated with pivot turns has to be avoided.

* Reach way back for a strong reverse sweep.
* Unless you are in boily water, lean away from the reverse sweep, catching the upstream edge just a little to get the pivot started.
* Quickly feather the blade forward and do a forward stroke to send the boat toward the next gate.

Full Spin Reverse

ON-SIDE

* Paddle toward the gate from the side as much as possible.

* If the boat isn't quite turned enough, use a draw to turn it further. But you don't always need the draw stroke and in fact the ideal would be to avoid it because it holds the boat upstream momentarily instead of propelling it toward the finish line.

* Do a reverse sweep to really start the boat spinning fast.

* If you want a pivot turn -- which you almost always do unless the poles are low -- lean back and away from your backsweep.

* After completing the reverse sweep, slice the blade from bow toward the stern while drawing the boat out of the gate. With Jon Lugbill and Davey Hearn, the bow comes whizzing around substantially above the water, but dips down smoothly to undercut the gate and then rises back up a little bit after the gate, as the spin is completed.

OFF-SIDE

* Paddle up to the gate from the side if possible.

* Do a big sweep to start the boat turning and help achieve a cross-bow stern pivot.

* Go onto a cross draw while leaning back and away from the cross draw to obtain a pivot turn. The cross draw is actually a cross draw backstroke -- sometimes called a "shovel" -- to pull the boat out of the gate. You may have to feather and do another reverse stroke to complete the move.

* Do a bow sweep to head for the next gate, or, if a tighter turn is needed, stay on the cross draw longer.

Because modern C1s are so good at spinning, they will rarely back down after a reverse gate to an upstream gate, preferring instead to do a full spin, if necessary, and then paddle forward at the upstream.

Paddling forward allows the boat to punch through the eddy line better, avoiding violent changes of direction, and allows the boater to watch the upstream gate longer.

"I've never backed down to an upstream in a real race as far back as I can remember," concludes Jon Lugbill.

Slam-Dunk Reverse

The slam dunk reverse is one where you come in from one side and go out the other. In Britain it is called a shuttle reverse. There are several ways to do this move in Cl, depending upon the circumstances.

BLADE ON UPSTREAM SIDE OF BOAT

If the river is quite wide and you are moving from one side of it to the other and there is good current, you probably want to do a bow rudder reverse:

* Paddle over to the gate from the side.
* Do a draw stroke on the upstream side to get the proper presentation.
* Go through the gate in the draw position.
* Do a bow sweep for the exit. Lean back when you do it to keep the bow up. This speeds up the turn. If you don't lean back, not only will the turn be slower, but there is the possibility that the stern will pop up underneath the pole and hit it.
* Do a cross bow sweep to prevent the boat from turning too much. Once you have started the boat turning downstream, you have to do something to keep it from turning too much.

If you do not want to go sideways across the river, do a reverse sweep:

* Paddle up to the reverse gate.
* Do a reverse sweep to get the proper presentation in the reverse gate.
* Convert the reverse sweep into a backstroke to pull

the boat back through the gate, but also toward the same shore from which you approached the gate.

* For the exit, reach over the bow and do a back stroke on the cross draw. This will yank the boat around. Try to keep the bow up when doing this. The problem will likely be that the stern wants to pop out of the water, thus lowering the bow.

Yet another way of doing this move is the sliding cross draw. This would be appropriate only if you have a good deal of movement cross current, for example, coming out of a ferry. Do the following:

* Swoop in from the side.

* Do a cross bow sweep to get the boat in reverse.

* Keep the downstream edge of the boat up.

* Obtain the proper blade angle and draw the boat through the reverse gate on the cross draw. The paddle shaft should not be vertical, but rather the blade should be extended towards the bow as much as possible.

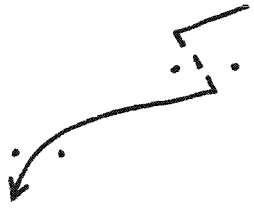
* Keep the bow up.

* Do a normal sweep out of the gate.

BLADE ON DOWNSTREAM SIDE OF BOAT

If it is possible to come at the reverse gate more or less from the side and the poles are not very low, then the ultimate objective is to do a pivot exit. This would be particularly appropriate if the next gate was not too far laterally from the reverse gate. If the next gate were laterally further over, then exiting with a draw to pull the bow out of the gate might make more sense because it could then be converted into a forward stroke to drive the boat across the current:

Pivot Instance



Draw Instance

PIVOT EXIT: Here is the technique for doing the pivot exit:

* Paddle the boat over to the reverse gate somewhat from the side. Be careful, however, that you do not get too much sideways momentum and slide into the poles.

* To get the proper presentation do one of the following:

    a. Short bow sweeps.

    b. A bow pry. Good in deep water, inadvisable in shallow water.

    c. A combination of short bow sweeps, a pry and a stern draw. The stern draw would be needed to ensure that you got through the gate, say, because there wasn't much current.

    d. A cross draw. The cross draw is safer if it's shallow. It also makes for a stronger turn if that is what is needed.

* As the boat goes through the gate pretty sideways, reach back for a big reverse sweep, choking up on the paddle for even more reach. Extend the paddle way back to the stern.

* Lean upstream and away from the reverse sweep in order to get a sharp pivot turn. You have to lean upstream quite hard (but of course, not hard enough to capsize).

* As the boat spins around, let your lower hand quickly return to its normal location on the shaft and convert the reverse sweep quickly into a forward feather and then into a draw/forward stroke to continue bringing the boat around and sending it forward on its new path.

If the poles are very low, the pivot exit is dangerous, and you have to simply do a back sweep exit, making sure to lean your body down on the bow deck as you do an extended back sweep to sneak the bow. Also, in situations where there is very little current, a back sweep exit makes more sense.

Double Pump Reverse

Setting up for an advantageous exit out of the reverse gate is the objective of the double pump. For that reason, if you have an upstream, followed by a reverse, followed by a downstream gate which is back toward the same shore as the upstream, then a double pump is usually likely to be the best strategy.

ON-SIDE

DOUBLE PUMP: "If I'm coming out of an upstream gate with my on-side downstream," says Davey Hearn, "I'll probably do a double pump. The compound reverse stroke is not as good an alternative because it is weak, particularly if the current is slow."

The strokes for the double pump in this ease would be:

* Paddle out of the upstream gate a little high.

* Use a reverse sweep to turn the boat downstream via a pivot turn, leaning back and away from the reverse sweep to catch the upstream edge. Obviously, this requires extremely delicate balance, and would not always be attempted in big water.

* Just as the boat comes down on the reverse gate, it is possible to turn it a little bit more so there can be no doubt as to the proper presentation. This is accomplished with a little backsweep, just before the boat goes into the gate.

* Undercut the pole on the exit from the reverse gate with a bow sweep and forward body lean.

HALF-SPIN: Another possibility, though, is doing a half-spin. This would be true if there were a great distance between the upstream gate and the reverse gate. The half spin is done simply by peeling out of the upstream gate, paddling several strokes downstream towards the reverse gate, and then doing a slam-dunk reverse move on the gate. The double pump, by contrast would not involve any paddling downstream

and would entail a pivot turn to spin the boat reverse.

Bob Robison makes another important comment about double pumps:

> The double pump really slows your momentum down. If you need to slow down, then it's a good move. But if you don't want to slow down, then the half spin is better.

OFF-SIDE

On the off-side, going out of the upstream gate on a backstroke and doing a full spin reverse is more of an option because the back stroke is a strong stroke. You can go out of the upstream gate, leaning back to keep the bow up and apply pressure to the backstroke when you feel the boat is lined up with the reverse gate.

But Bob Robison makes the case for still doing a double pump with a bow pivot:

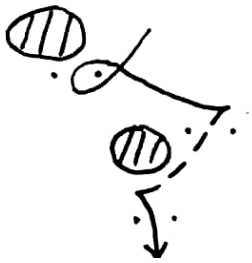
> I can double pump on my off-side just as easily as on my on-side. Using a cross bow pivot to spin the boat reverse is very often quicker and safer because it isn't a blind move -- you can watch the gate rather than having to look over your shoulder for it.
>
> Another reason I like the double pump is that sometimes when the current is fast, I have more confidence peeling out rather than trying to go up and straight back. When you come out on a back stroke there is often the problem of the stern flapping around and hitting the gate -- something you avoid with the double pump.

Back Around Reverse

C1s rarely use this move, almost always preferring instead to do a full-spin reverse. There are, however, two cases in which it might be used.

1. If there is a very short distance between the gates, so that one backstroke or possibly two quick ones is all it takes to get the boat back and around for the next gate, then a full spin would not be used. In this instance, the on-side would be on the downstream side. If the on-side were on the upstream side, the boater would almost always do a full spin, no matter how close the gates were.

2. If rocks and/or eddies dictated it. For example, if you had the following situation:



If a C1 attempted to do a full spin reverse here, there is a real danger that he would hit the rock. Therefore, he might elect to back the boat around, letting the stern eddy out and turn the boat around for the next gate. What would you do if only a big eddy were there and no rock? "I would do a full spin," says Bob Robison, "only if I could get a pivot turn. This would keep my bow out of the eddy the bow would swing around above it. If I couldn't get a pivot turn, I would have to work against the eddy, which is usually slower and more fatiguing, so I would probably back around."

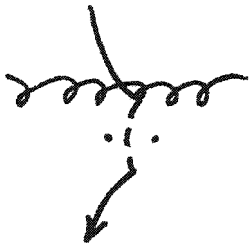
Davey Hearn has this to say about double reverses: "If the gates are offset at all, I'd ferry a bit between them. It's usually just not practical to shoot them in reverse."

> If there is much of a distance between the gates, we'd just do a slam-dunk on both of them. The distance wouldn't have to be all that great, either, because we can't paddle backwards that well.

Bob Robison, however, disagrees:

> If your paddle is on the downstream side, then just as easily as a kayak you can usually shoot the gates in reverse. With your paddle on the upstream side, shooting the gates in reverse is noticeably harder, but sometimes it is possible if you have the proper momentum and angle before you approach the first gate.

Reverse Gate After A Hole



If there is enough room between the hole and the reverse gate, the best strategy is to paddle right straight through the hole, heading for the reverse gate as though it were a forward gate and then turn at the last second.

If there is not enough room to do this, then do the following:

* Pick up a lot of forward speed.

* Hit the hole fairly sideways, with enough momentum to carry you through it, doing a draw or cross draw to obtain the correct presentation.

* You have to have enough downstream lean not to tip over, but it can't be so much that the downstream edge of the boat digs in and prevents the boat from sliding through the gate in reverse.

In assessing the effect of what a hole can have on your boat, try to examine the following things:

* Are there any breaks in the hole, any tongues? If there are, make sure they won't push the bow downstream at precisely the wrong time. You will want to avoid putting the bow on a tongue, or lean back and keep the bow just above it, so that it can't grab the bow.

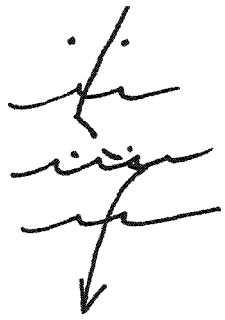
* Is the hole angled? If it is, you have to factor in the effects of the angle on your trajectory. If the hole is angled towards the gate, it will throw you harder towards the gate; if it is angled away from the gate, you will have to work harder to overcome this.

* Where are the points of strong recirculation behind the hole? These places will have a significant effect on the passage of the boat through the area. Make sure to factor them into your plan.

* How strong is the back wash behind the hole? If it is strong, it will be harder for you to wash through it.

* How is the hole made? If it is made by jagged rocks, the water flowing through will be more unpredictable, surging and changing. If the hole is made by smooth rock, the water will move in a more predictable path.

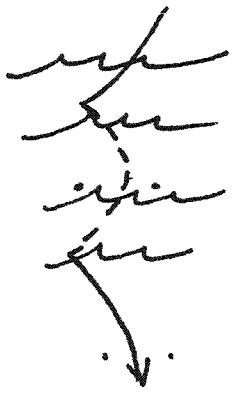
* How deep is the hole? The deeper it is, the more momentum you will have to have to get through it.



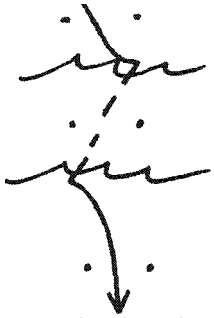
Reverse Gate On A Wave

Kent Ford makes the following comments about this move:

> I'd go through the gate with the boat almost perpendicular to the current and I'd make the turn right before the gate. The only time I'd turn sooner, on earlier waves, is if it were a full spin reverse and I wanted to be turning around as I came through the reverse gate:



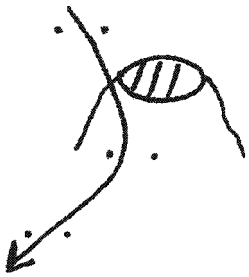
> If the gate after the reverse required some sort of ferry to get over for it, that's the only time I'd go through the reverse gate end on.



Reverse Gate In Trough

It is harder to line up for this kind of reverse gate, because you have less power to correct at the last second (because the ends of the boat are caught in waves). It is usually best to come into this gate from an angle so you can see it better. When possible, the boater should try to set up the move so he can exit the gate on a bow sweep -- the same as with a reverse gate in any other kind of water. If the gates are all in line, then the boater should probably turn on the wave before the reverse gate.

Two Forward Gates Separated By An Eddy Line



ON-SIDE CLOSE TO THE ROCK

This move is quite awkward unless it is done the following way:

* Approach the eddy with the boat right next to the rock, with only a slight angle towards the gate. If you have too much angle, the boat will simply eddy out.

* Aim the bow just inside of the inside pole (green one above) because once the boat hits the eddy, the slack water will turn the bow more into the gate.

* Lift the paddle up over the rock and put in a quick sweep to turn the boat towards the next gate, being sure to:

    -- Lean back when doing the sweep.

    -- Lean slightly away from the turn.

* Follow the sweep back into a stern draw.

* Feather the blade forwards.

* Do a cross draw. However, in some cases it may be necessary to do more sweeps first. This happens if the boat has eddied out a little too much.

ON-SIDE AWAY FROM THE ROCK

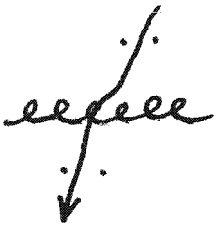
* Get up a lot of speed.

* Get the right position vis-à-vis the rock.

* Do either a draw in the eddy or a backsweep, if you are getting eddied out. If you can come down on the move fairly straight, you can probably get away with the draw, which is the fastest way to do the move. But if you have to come in from the side, then you almost invariably will be better off with a back-sweep. After doing the backsweep, feather the blade forward quickly into a draw, while leaning away from the draw, so as to get a pivot turn. One other variable affects the choice between plain draw and backsweep converted into a draw: the speed of the current. If the current is slow you will find it easier to do a draw.

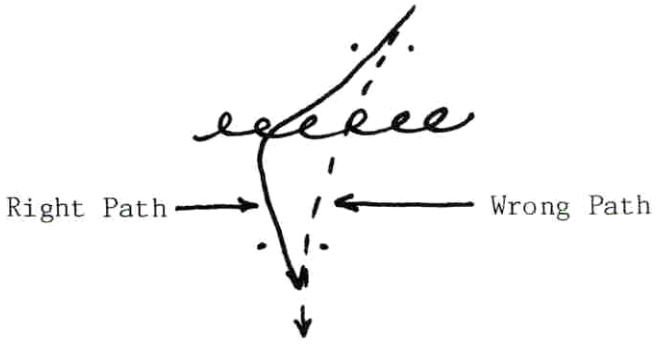
HOLES

Two Forward Gates Separated By a Hole



* Try to lean back to get the bow up over the back wash and keep it from burying.

* Depending on the position of the gates immediately before and after the move, you probably want to overshoot the gate and come back on it. Jon Lugbill explains this is because "behind a hole you lose momentum and therefore you can't ensure that you will get your body through the gate unless you overshoot it a little bit."



If you have the choice of either going in the hole or paddling across its backwash, the former is the preferred method, even on your off-side. "I know going into a hole on a cross-draw is the ultimate terror move in C1," muses Bob Robison, "but the object is to get good enough so you can do it well." The reason it's best to go in the hole rather than across the backwash is because the hole keeps you from being swept downstream, especially if you have a cross-draw on the downstream side, because it is a relatively weak stroke. In K1 it is a different situation because the K1 paddler has a strong stroke on either side. For him, avoiding the hole is usually best.

ON-SIDE

* Paddle hard through the upstream gate so you have speed hitting the hole and can surf across it fast. "If you have speed," says Davey Hearn, "you can traverse even a nasty hole you wouldn't normally want to sit in."

* Lean hard on your on-side and do choppy, sweep/forward strokes.

* At the other end of the hole, lean back and do a sweep to cause the bow to pop up a bit. Otherwise, the fast water on the other side of the hole will turn the bow downstream, especially since the stern is still caught in the hole.

OFF-SIDE

* Have a lot of speed hitting the hole.

* If the hole is long and you run out of speed, you have to dive onto a cross-draw and use it to pull yourself across the hole. When you get to the other side, a

cross-bow sweep and backwards lean will help to prevent the bow from catching in the current.

* The preferred position to be in is leaning back and downstream with the paddle back so you can do a stern rudder when the bow reaches the current on the other side of the hole. You don't apply any pressure to the stern rudder -- it's not even in the water -- until you reach the other side, but you keep it in the right position to go into a stern rudder. If it's a short hole and you have a lot of speed, you will simply whiz across the hole and this will be the best method.

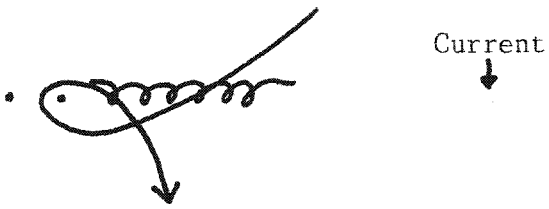
Exit Options

There are essentially two basic ways of exiting holes, depending upon what the next move is, explained here by Kent Ford.

1. As you traverse the hole, often you want to end up on the downstream edge of the hole.

Cross Section of Hole
Showing Boat on Back Edge

This is because you have more control over the boat in this position. A typical application would be when you have an upstream gate right after the hole, with the gate line about even with the axis of the hole:



in this case, you will be entering the hole from the upstream edge, going down to the trough, and finally coming up on the back edge. Accomplishing this is tricky because if you don't execute well, the boat will get swept downstream by the current.

2. In other cases, you may want to ride across the back edge of the hole to start with, but dip down into the trough just at the end in order to get a little acceleration upstream. A typical application would come when the gate after the hole was an upstream with the gate line above the axis of the hole:

Another application would be when the next gate was way across the river and you needed an upstream boost to help continue your ferry before you turn downstream for the gate:

OFFSET GATES

ON-SIDE ON THE INSIDE OF THE TURN

Turn above each gate if the offset is at all difficult. Otherwise, just turn right in the gates --or best of all, just paddle straight through them.

"Leaning to the outside of the turn is also important," adds Bob Robison:

> The only problem with it is that often your strokes can't be as powerful if you are leaning to the outside of the turn you're likely to be on a draw stroke (or a cross-draw stroke on the other side). Therefore, you lean to the outside only for one or two strokes, just when your bow approaches the gate. Often the lean, coupled with a small draw (or cross-draw on the other side), is all you need to turn the boat in the gate.

If the offsets are at all hard, make sure that when you turn above one gate, you are aimed back for the second gate before you pass through the first one. Use a draw, perhaps even prefaced by a cross-bow sweep to turn the boat. Keep the draw in the water quite a long time to keep the boat to the inside of the turn and make the stern follow the bow.

ON-SIDE ON THE OUTSIDE OF THE TURN

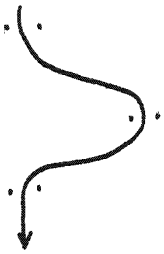
* Do a draw in the first gate to get over above and to the outside of the second gate, so you can turn back for the third before passing through the second.

  Just before approaching the second gate, do a sweep and go immediately into a cross draw.

* Lean away from the cross-draw; do a cross-bow sweep to straighten the boat out and make the stern follow the bow.

Davey Hearn has the following interesting remarks about this move:

> I do a little drill for this in flatwater. I do a draw, then a sweep, then a cross-draw, then a cross-bow sweep. It helps to enter the drill sequence with a certain amount of speed.



Severe Offset

ON-SIDE ON THE INSIDE OF THE TURN

Doing a severe offset will require the boater to do a pivot turn. The trick is to see whether he can execute the pivot without having to start it with a back stroke. Since backstrokes slow the boat down, they should be avoided if possible. The Batmax, with its shallow ends pivots very easily and thus a big draw stroke may suffice to initiate the pivot on this move.

Another consideration is exactly when to start the pivot turn. If the poles are high, the boater should start the pivot above the gate and swing the bow around under the outside pole. If the poles are low, however, he must just poke the bow through the gate line and then start it.

ON-SIDE ON THE OUTSIDE OF THE TURN

The two choices here are bow pivot and stern pivot.

As you approach the offset gate, if you find the keel line of the boat almost parallel to the gate line, then you'll have to do a bow pivot. In this instance, do a sweep to start the turn, then a cross-draw with a lot of forward body lean to plunge the bow under water. Jump the cross draw up over the bow deck and continue it as a sweep stroke. This keeps the bow under water longer and keeps the pivot point in front of the paddler's body. But the bow pivot is slower and should be used only as a last resort. Be careful the stern doesn't swing around and hit the gate.

In other cases, you should try for a stern pivot while using a cross draw. In this case, start with a sweep to initiate the turn. Go over onto the cross draw, reaching way out to the side to get a lot of snap to the turn. The paddle shaft should be more or less vertical. Lean away from the cross draw stroke to catch an edge and get the pivot. Instead of leaning the body forward as is done for the bow pivot, lean it backwards to keep the bow up.