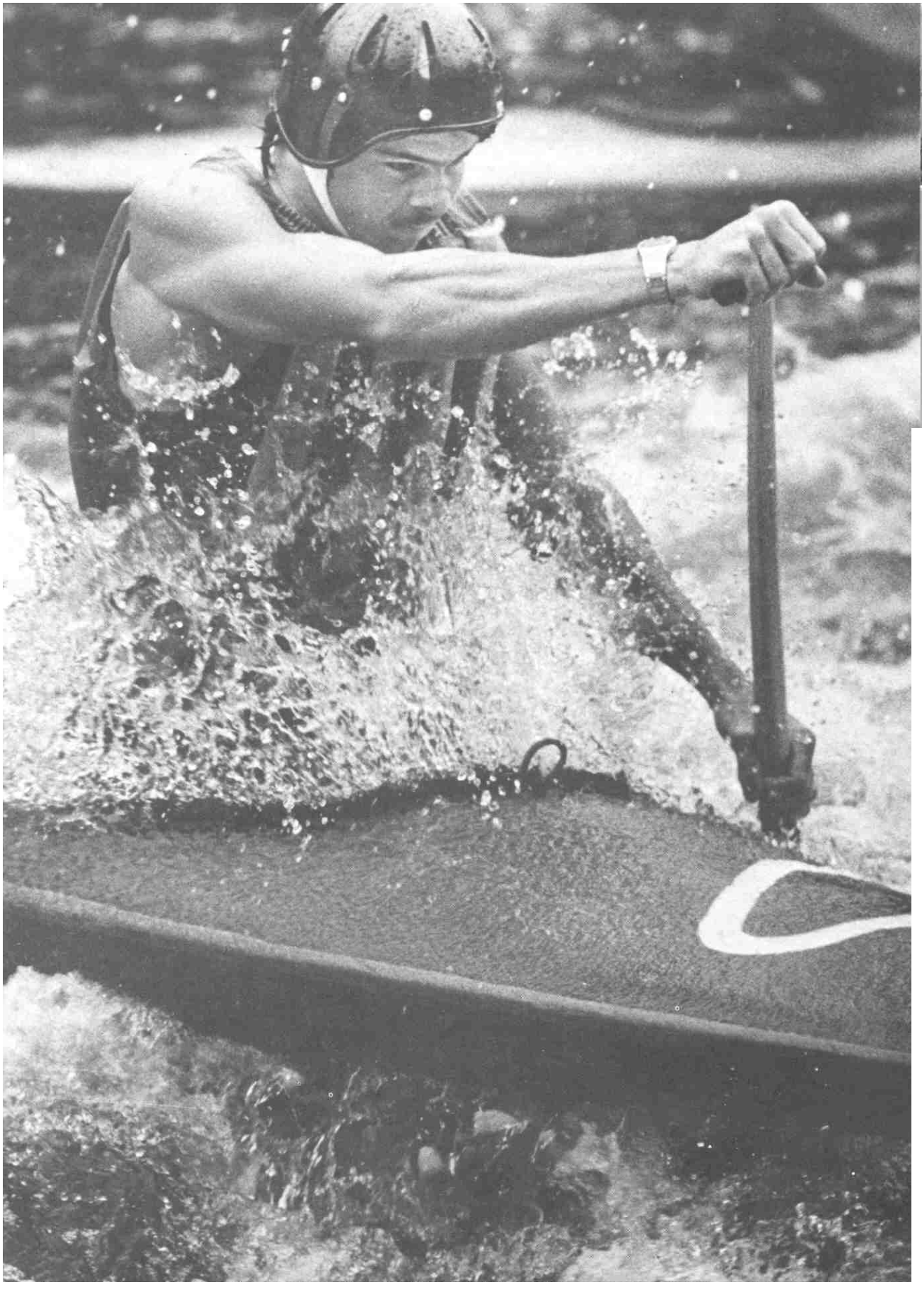


"There's a lot to be learned from C1 technique and boat control that is helpful to all classes. Because the C1 has a blade on only one side, he must use it more efficiently. But if you can learn to use both of your blades more efficiently, you'll be a lot better off."

Cathy Hearn, K1W World Champion

I. Boats and Equipment.

A. Paddle.

As in other classes, length of paddle is the first thing to check. Many C1s use paddles that are too long. Admittedly, there is extra reach to be gained from the longer paddle, but this advantage is more than offset by control problems and the inability to apply strength to the pull-through if the paddle is too long. A quick way to see if your paddle is too long is to stand on shore and see how high the paddle comes on your body. If the T-grip reaches your chin, the paddle is too long. From there, determining optimum length is a matter of some complexity, but essentially, the objective is to choose a paddle which allows the top arm to be at shoulder or eye level when the blade is fully inserted in the water, as is shown in the photograph of David Hearn at the beginning of this chapter. In practice, the proper length for most paddlers will be in the vicinity of 59 inches, as is shown in the following table which gives body height and paddle length of the top three finishers in the 1979 World Championships.

Name	Height (in inches)	Paddle Length (in inches)
Lugbill, J.	69	59
Hearn, D.	70	59
Robison, R.	74	59

Opposite: David Hearn, USA second at the Worlds (1979) and second in the Europa Cup (1980). Note that the upper hand is at eye level. (Jim Thresher photo)

After choosing the proper paddle length, one should take care not to pick a blade with an inordinately large surface area, for this slows down stroke rate and leads to slowed reaction on turns requiring sweeps or reverse sweeps. The Kober, Prijon, and Mitchell blades are good. These wooden paddles are to be preferred to the fiberglass variety because of the flex in the shaft and other handling characteristics.

A final problem is holding the paddle properly. There is a tendency among many canoeists to hold the lower hand too high on the shaft. This prevents proper application of the pulling muscles and can lead to control problems. The proper distance between the little finger of the lower hand and the throat of the paddle is 5-7 inches.

B. Boat.

Probably the best C1 design at the present time is the "Supermax"-"Ultramax"-"Cudamax" series, designed by David Hearn, Bob Robison and Jon Lugbill. Their characteristics are:

- Low profile.
- "Pancake" hull -- the boats sit on the water, rather than down in it.
- Good rocker.
- Bow and stern shaped like a knife blade lying on its side which facilitates undercutting gates.

In the hands of an accomplished boater, these boats will perform wonders, especially if they are light in weight.

The problem with the "Maxes" is that individuals weighing 190 pounds or more are likely to have difficulty maximizing their potential. Balance will be a concern since the "Maxes" all have low edges which can catch and flip you. Heavy weights will cause the "Maxes" to sit too low in the water, thus impeding turns.

While other boats may be suitable for various individuals, I think the following are some characteristics to be avoided:

1. "Beaver tail" stern.

The beaver tail isn't necessary for sneaking gates and it causes unpredictable handling characteristics while paddling in reverse.

2. Excessively light boat.

Everyone realizes that a light boat (20 pounds) handles better than a heavy one (30 pounds). But if a really light boat -- say, 18 pounds -- is very flexible due to poor construction, it is worse than a heavy boat, for the design is constantly changing as the hull flexes. In light boats, the racer must also guard against pin holes which cause leaks.

3. Excessive rocker (for turning) or excessive keel (for speed in a straight line).

A boat with too much rocker will present steering problems; it will go from side to side too easily. A boat with much of any keel at all will present turning problems. I feel speed over a slalom course is more a manifestation of turning ability than it is speed in a straight line. Thus, I do not think there is a great deal of merit in the idea that to go faster in slalom you should get a slalom boat with a lot of keel in it. It is probably better to err on the side of too much rocker than too much keel.

Outfitting of the C1 is a personal matter, but I think thwart seats and thigh straps are as good as anything. The thwart helps lean control -- your "cheek" is always resting on the thwart, while it is not always on a pedestal. Machines (solid thigh braces) are good, but straps can be pulled really tight -- tighter than machines -- and this makes control even better. Straps also make exchanging boats easier. However, if you use straps, make sure to reinforce the hull to make it very stiff under your knees. If you don't, there will be two big dents in it every time you tighten the straps. Blocks of neoprene rubber work fine for knee pads. Ethafoam blocks can be carved out to make a really solid fit, but they have the disadvantage of soaking up water and wearing away after a while. The inside of the cockpit area should be entirely smooth, especially if you want to paddle barefoot. To add comfort for your feet, thin rubber pads can be cemented where your ankles go.

It is a good idea to make sure your boat has inside and outside seams on it. Outside seams do not add much weight and they make the boat much stronger. Most factory boats do not have outside seams, but you should put one on yours unless you plan to own your boat only briefly.

II. Strokes.

A. The forward stroke.

The key to a successful forward stroke is to pull from the back (latissimus muscle) and not the bicep. Backs are stronger than arms and consequently do not tire as quickly. Since it is easier to get a quick initiation of the stroke, and hence a faster acceleration, using smaller muscles rather than big ones, there is a tendency to prefer the bicep. Any advantage of doing so, however, is short-lived, for the bicep soon tires and the boater is not able to keep up his torrid pace over the whole length of the course. Either he simply slows down, or commits errors due to fatigue.

The proper method, then, is to keep the lower arm locked throughout the pull, flexing it only slightly at the end of the stroke to facilitate removing the blade from the water.

The athlete reaches forward by leaning his torso 20 degrees and twisting it (this is very important) so that his chest is facing away from his on-side. When leaning forward, the boater should think about leaning on the paddle, not his knees. He briskly inserts the blade into the water, taking care to fully insert the blade before starting to pull back. Back splash means the boater is pulling before the blade is fully inserted and wasting his stroke.

In most sports speed of movement is critical and in canoeing this comes in applying force to the blade once it is fully inserted. The first foot of the stroke should be very quick and very powerful, for this is the most important part of the stroke, the part that sends the boat leaping forward. After the initial surge, the boater must take care to set himself up for a smooth finish and removal of the blade from the water.

In order to obtain the maximum amount of force on the blade in the beginning, good boaters are able simultaneously to apply many muscles at the same time, not one after the other. All together, the top arm exerts a downward pressure, the torso both straightens up and unwinds, and the latissimus draws the lower arm rearward. In short, the whole body plays a role.

Some individuals believe that the top arm should be thrust out as though the paddler were throwing a punch. This is not so. As David Hearn explains, "The top arm shouldn't really lunge out as though throwing a punch because that ruins proper vertical blade angle. Instead, the top hand should be pushing downward while the top arm is locked out straight."

The forward stroke by Jon Lugbill. Note the torso twist, forward lean and reach (above) and the powerful downward motion (below) (Bill Cacciolfi photos)

Bob Robison, USA, Bronze Medalist at Jonquiere, drives through a forward gate. (Jim Thresher photo)

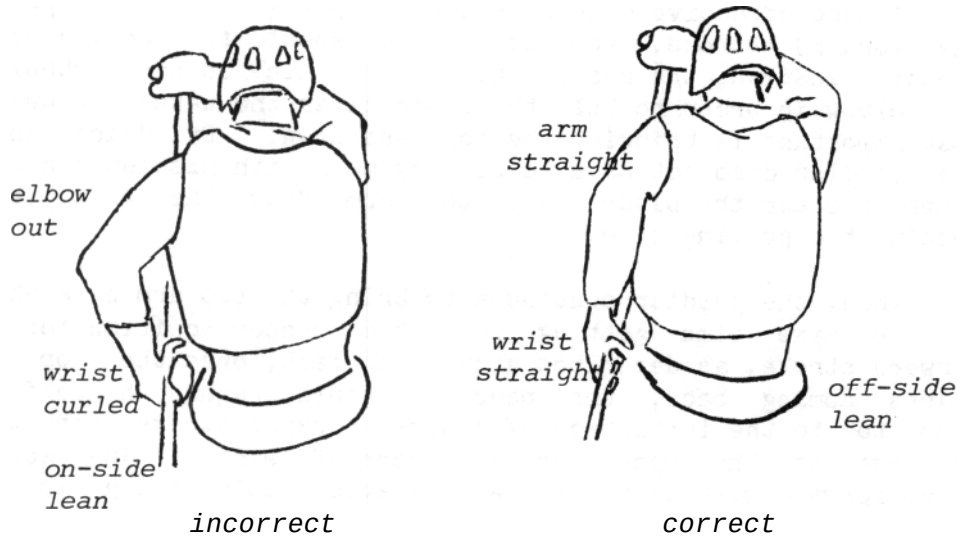
1. Steering.

Ordinarily, the canoeist steers with the J-stroke, using the stern pry variety in emergency situations where more force is required. These "emergencies" happen more in C2 than in C1, however.

a. The J-stroke.

The canoeist must practice this stroke until he can execute it expertly, being able to get just the right amount of angle on the blade so that it will slice into the water and steer the boat. Any time the stern pry is used instead of the J, the athlete has lost a second or two in running time and the cause is probably poor boat positioning. One must be sure not to get into the habit of doing the J too far in front of him and thereby cutting off the stroke too early, or more commonly, doing it too far behind him which slows down the stroke rate. The lower hand should be about next to the hip bone for proper positioning. Care should be taken to do the J on the side of the boat, or seam line, not on the deck for this causes the boat to lurch violently to the on-side. Leaning slightly to the off-side will help avoid this problem.

Furthermore, the bottom hand should not be used to make the J motion. "It's the top hand which does the J," according to David Hearn. A good way to practice this is to hold the paddle very loosely in the lower hand, grasping it just enough to keep it from slipping out of the hand. The drawing below illustrates the proper position:



incorrect *correct*

Finally, one should try to learn to paddle short distances without steering at all. As Jon Lugbill explains:

> You have to learn how to paddle without using the J-stroke in certain situations. It's almost a must for being top in slalom. Many of us have just started to learn it now. It's hard to do but there's a way in certain places where you can lean your boat in such a way that you don't have to actually use a J-stroke.

b. The Stern Pry.

Most advanced canoeists perform this stroke adequately, although there is sometimes a tendency not to lean back enough to get the stroke closer to the end of the boat where leverage is better.

2. The recovery.

I would say that most canoe paddlers fail to realize how important a good recovery is, important because it sets up the athlete for an even better forward stroke. The key is proper use of the upper arm.

Many boaters perform their recovery by simply flexing the lower arm at the end of the forward stroke, lifting the blade out of the water, and pushing it forward to start another stroke. They ignore the use of the upper arm entirely, just letting it hover above the head the whole time.

A more effective method is the following: after the end of the forward stroke, the lower arm should flex only a small amount. Instead, the boater should lift his on-side shoulder and elbow in order to help the blade clear the water. However, most important is bringing the top hand down. By doing this, the paddler does not have to do very much with his lower arm in order to clear the blade. The top arm does the work, thus resting the pulling side.

Then, the paddler continues to bring the top arm back while at the same time getting into the proper position for the forward stroke, as described above. In fact, once the top arm starts coming back, the paddler should regard himself as committed to the initiation of another forward stroke, for this movement of the upper arm is a sort of "windup." The paddler moves forward with increasing acceleration culminating in the insertion of the blade and application of pulling power. The movement of the upper arm throughout the cycle of a stroke and

recovery is best thought of as a large circle.

The forward stroke is so important that the boater must always practice it, no matter how good he is. Ways to do this include long distances at about 50 percent or 75 percent power while totally concentrating on the stroke; or shorter stretches where full power is used with a slow recovery. In the words of Bob Robison, "You never get the perfect forward stroke."

Common mistakes in the forward stroke:

- Bending the lower arm too early on the pull through and taking the full brunt of the stroke with the bicep instead of the back.
- Not reaching forward enough with the torso -- sitting bolt upright.
- Not twisting the torso enough.
- There is a "kerplunk" noise right at the catch (or "plant," as it is sometimes called). This indicates the paddler is inserting the blade in one motion and pulling back on it in a separate motion rather than doing both simultaneously.
- On the steering stroke, taking the paddle too far behind the body and thus slowing down the stroke rate.
- Steering too early and not getting a good, long stroke. This also makes paddle recovery more difficult.
- Jerking the torso or head to the off-side when doing the J and thus rocking the boat instead of keeping it level.
- Failing to do the steering stroke on the side of the boat rather than on the deck. This is often caused by bringing the top hand down too far at the beginning of the recovery. It causes the on-side gunwale to dip under the water and this rocks the boat, upsetting balance and reducing forward speed.
- On the recovery, failing to use the upper arm effectively as a windup for the coming forward stroke.
- On the recovery, diving forward with the torso too fast and producing check in the boat. All movements must be done smoothly.

B. Reverse strokes.

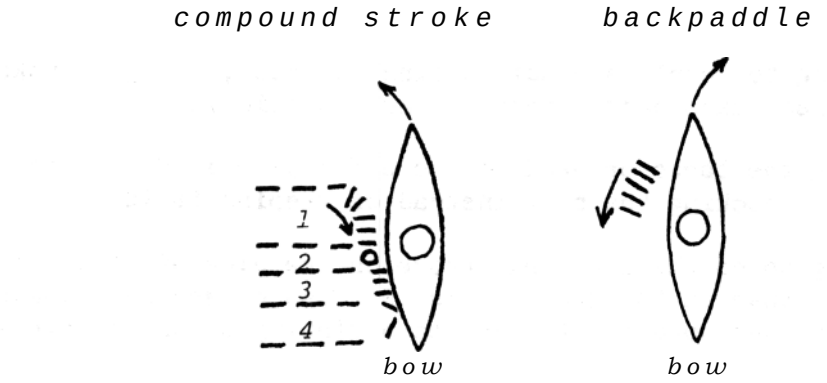
In canoes, there are two types of reverse strokes -- the backpaddle and the compound stroke. Each has particular applications depending on which direction the paddler wishes to turn the boat while reversing, or whether he simply wants to go straight back. In practice, the elite boater should rarely just go straight back; he should set up for the next move instead. In general, boaters do not practice reversing enough and should not be averse even to doing wind sprints in reverse on flatwater, or reverse upstream gates in whitewater.

1. Backpaddle stroke.

This stroke steers the boat to the off-side; the reverse sweep action at the beginning of the stroke pushes the stern around.

2. Compound reverse strokes.

There are four phases: the pull phase; the flip phase; the push phase, and; the steering phase. Depending on the situation, only some of the phases are used. Compound strokes turn the boat to the on-side; the draw action in the pull phase pulls the stern in the desired direction.



a. Pull phase. To execute the pull phase properly, the athlete must be able to reach around so that, owl-like, he can face the stern of the boat. This requires three things: flexibility built up through exercises; bracing in the boat which does not overly restrict the thighs from shifting (machines can be a problem), and; good balance so that the paddler has enough confidence to lean out and thus better see where he is going.

b. Flip phase. Flipping the paddle from its power face to its back face must be done very quickly, and the boater must be sure to fully turn the paddle. Failure to do either will lead

to a weak push phase. This is a very common problem.

c. Push phase. The boater must be sure to lock his lower arm out straight and then commit his whole body weight to the push phase. If he uses only a bent arm and no body weight, he will have a weaker stroke.

d. Steering phase. There are two types of steering: the bow pry, and the reverse J. Whenever possible, however, the steering phase should be eliminated entirely, for it slows the boat down. Instead, the boater should try to incorporate the proper steering elements into power strokes, i.e. by alternating between the first two phases alone and the backpaddle. Nevertheless, there are times when steering has to be done in reverse, usually when the boater must go straight back over a long distance, particularly on flatwater.

i. Bow Pry. The bow pry is the more common stroke because it takes less skill to execute a strong stroke.

ii. Reverse J. The reverse J, or bow J, is potentially stronger than the bow pry, but it takes great skill to execute well. The advantage is that it allows the boater to get his blade closer to the end of the boat than he can with the pry, and this makes it more efficient. It also creates less drag than the bow pry. Thus, the elite boater should try to use the reverse J exclusively.

Through repeated trials and observations, I believe that compound reverse strokes are the best, most powerful way to move a C1 backwards over a long distance, especially if the paddler follows through by leaning down towards the bow deck while J-steering. Leaning elongates the stroke. Thus, in flatwater sprints, there is no question that for the Cl, compound strokes are best. This contrasts with C2 in which the backpaddle is best. Race conditions, however, rarely require the C1 to travel far in reverse, so in races the back paddle is used more often.

Mistakes in reverse stroking:

- On the compound stroke, not reaching around far enough to get in proper position. This can lead to an inability to get a good pull phase of the stroke, which fails to propel the boat backwards, or to turn it to the on-side, or both.
- On the compound stroke, not flipping the paddle over fast enough to convert into the push phase, thus weakening the push.
- On the backpaddle, doing too much of a reverse sweep and

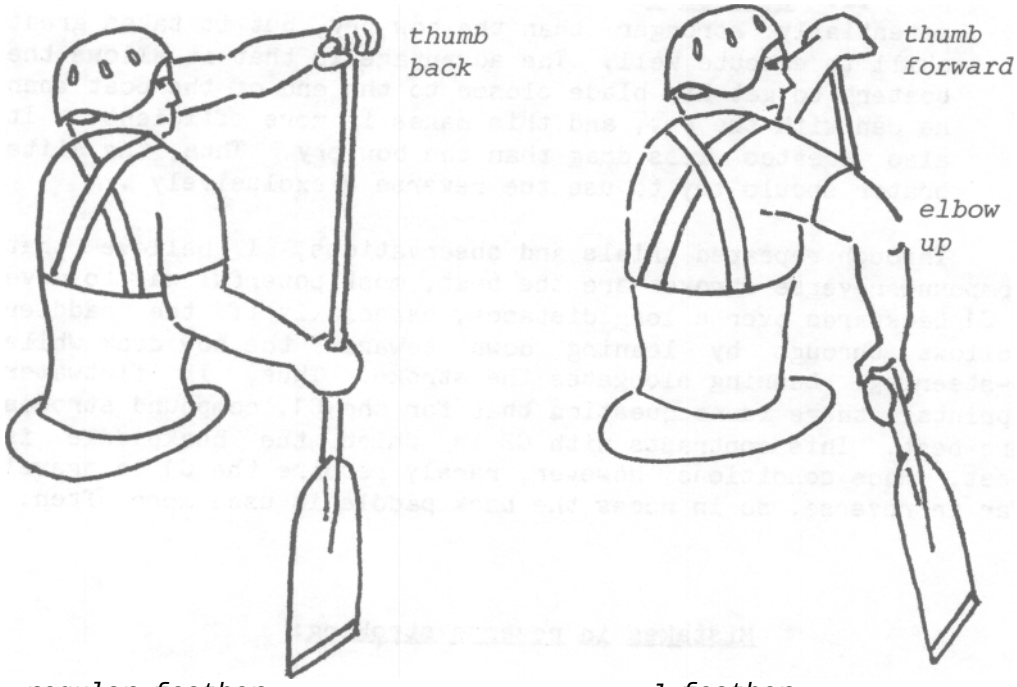
pushing the boat sideways into the gate. One must do the stroke as parallel to the keel of the boat as possible.

- o Through lack of flexibility, failing to look at the reverse gate soon enough in advance, and thus hitting it.

- o Using a cross-bow reverse stroke because of lack of familiarity with compound reverse strokes.

C. Feathering.

Feathering is the ability to slice the paddle blade through the water on the recovery. It can be done two ways, regular feathering and J-feathering. By the time most C1 paddlers have been racing for a while, they can do regular feathering well. It is the ability to do the J-feather on the recovery which is important, however, because it is much faster.



regular feather *J feather*

Most advanced paddlers can do the J but use regular feathering when they should use J-feathering. Regular feathering is too slow on the recovery and it usually results from bad boat positioning -- the boat gets so far off track that a strong draw is required during the recovery, or the boat has been allowed to come too close to the gate and to avoid hitting it the paddle must be brought parallel to the pole – regular

feathering.

The elite C1 paddler must be able to use the J-feather on the recovery almost all the time. He must practice this when in gates so as to learn the proper position which will permit him to use the J. Regular feathering can be used more in team races, however, because of the extra control it affords.

Mistakes in feathering:

- o A racer wishing to be safe around gates uses the regular feather on the recovery and loses time.
- o The paddler pays insufficient attention to his boat position and is forced to use regular feathering to get the boat on track.
- o An inexperienced racer has insufficient feather control and hits the gate.
- o On the regular feather, the paddler allows the bottom hand to get more inboard than the top hand and momentarily jams the paddle against the side of the boat.

D. Draw turn.

Many individuals fail to get the blade forward enough on the draw turn. This fails to make use of maximum leverage and thus slows the turn, or worse, pulls the boat sideways rather than turning it.

Some paddlers sit bolt upright and simply stick the paddle in the water right beside them. Others, realizing the importance of doing turning strokes as close to the end of the boat as possible, lean the torso forward and then insert the blade. In both cases, the bicep and body absorb more force than they need to, thus tiring the paddler as well as resulting in a poor turn.

The key to a good draw turn is getting the paddle blade forward -- not the paddler's body. Once again, the action of the top arm is important. When performing the draw, the paddler should usually lean back a little because this puts his body in a better position to absorb the shock of the turn. It also keeps the bow out of the water, facilitating the turn. He should extend the lower arm out straight, locking it at the elbow to reduce strain on the bicep. The top arm should be pulled back so that the forearm is slightly in front of the forehead. A slight lean to the off-side is also very helpful in speeding the turn.

However, what often separates the excellent from the good is the ability to twist with waist muscles and legs in a manner so as to complement the other movements and speed the turn.

A final important point: all draws should be prefaced by another stroke to start the turning momentum. These can be:

1. A strong J-stroke.

2. A stern pry stroke.

3. A cross-bow sweep.

After this is done, the draw accelerates the turn, rather than having to start it from scratch.

Mistakes in Draw turns:

- Improper torso position. The paddler leans forward too much.
- Not getting the blade forward enough through proper use of the top hand, and thus pulling the boat sideways rather than turning it.
- Failure to develop waist, back, and abdominal muscles sufficiently to exert torque on the boat and speed the turn.
- Bending at the elbows. This is very common, in fact many people have been taught this way, but it is inefficient and can cause elbow problems and shoulder dislocations.
- Failure to start the boat turning before using the draw and having the draw take effect too late as a result.

E. Cross draw.

Dexterous cross draw strokes and the ability to paddle on the cross draw for several strokes in a row are the signs of an accomplished C1 expert. While most C1 racers can do the cross draw, their problem is that they don't dare lean hard on it -- as hard as they would on a regular draw -- and they cannot take many strong cross draw strokes in a row. There is no one pearl of wisdom here, except to say that you'd better practice the cross draw a lot so that you build up muscular flexibility and confidence in it. Part of this involves going through the gates while on the cross draw so you can practice steering while actually on the cross draw.

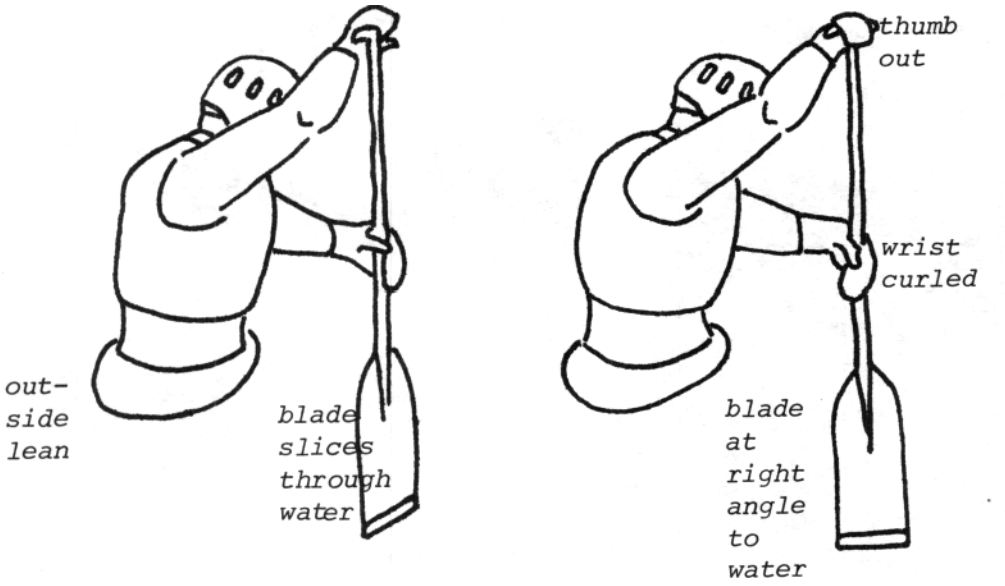
Bob Robison, USA, on the cross draw. Note that the lower arm is submerged. (Jim Thresher photo)

Some of the key elements of steering on the cross draw:

1. When doing an upstream gate and wishing to tighten the turn, make it sharper than you had originally intended, there are two possibilities:

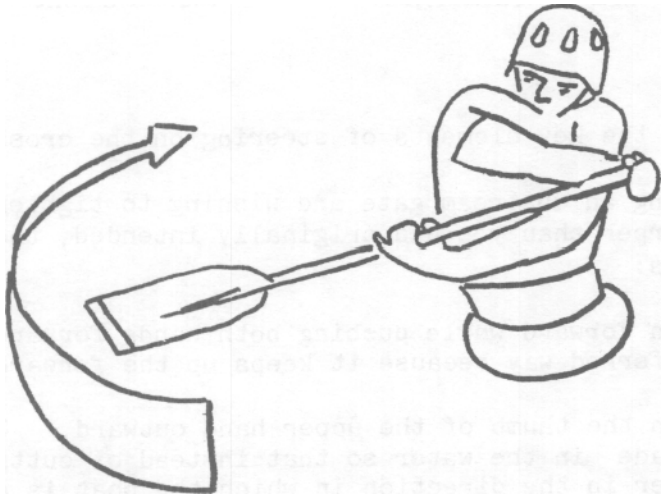
   a. Lean forward while pushing both hands forward. This is the preferred way because it keeps up the forward momentum.

   b. Turn the thumb of the upper hand outward. This turns the blade in the water so that instead of cutting through the water in the direction in which the boat is going, the blade is actually at right angles to that direction. The result is a sudden drag on the cross draw side and this quickens the turn. See the illustration below.



2. To open the turn, not turn as fast as was originally intended: pull the paddle towards the stern of the boat with the lower hand. The effect is like a stern draw.

3. To change the direction in which the boat is going when you don't have time to take the blade off the cross draw: bring the top hand inboard and down and push the bottom one out, thus putting yourself in position to do a cross bow sweep. This move is often used to initiate a turn into an upstream gate.



Mistakes in the cross draw:

- o The racer, going from a forward to a reverse gate, or into an upstream on his off-side, uses the bow pry stroke instead of the cross draw and this results in a slower turn.

- o The racer fails to keep the blade forward enough on the cross draw (by lowering the upper hand a bit) and pulls the boat sideways rather than actually turning it.

- o A boater going through two offset gates tries to use forward/sweep strokes instead of a cross draw and the boat starts to turn at its mid point and reaches the gate sideways and penalties result.

- o In the same situation as above the boater inserts the cross draw at the proper time but hits the gate with the cross draw.

- o The boater fails to initiate his off-side turn with a sweep before going over onto the cross draw, and the cross draw is less effective.

III. Upstream gates in C1.

A. Strokes for C1 On-Side Upstream -- Ideal Entry.

The reader is reminded of the remarks on upstream gates in the beginning of the technique section. Remember also that the diagrams here refer only to the ideal set-up: The eddy is good and sharp, the gate in the eddy is in the proper place, and the gates above and below the upstream are properly positioned. Where appropriate, I note how conditions which are less than ideal affect technique.

This passage should be read in connection with Fig. 5-1.

Who's fastest? Jon Lugbill (above) peels out tightly and uses a cross bow stern draw to keep the boat broadside. David Hearn (below) uses the conventional higher peel out and standard cross draw. (Bill Cacciolfi photos)

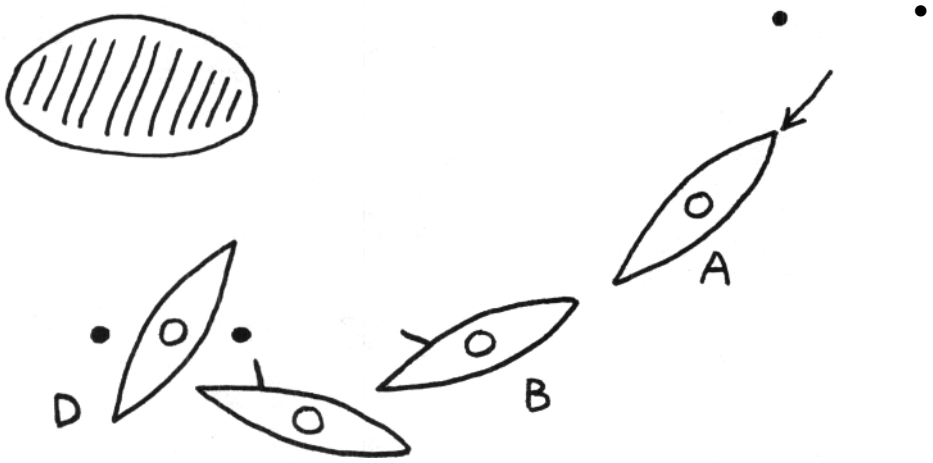


Fig 5-1. Strokes for C1 On-Side Upstream -- Ideal Entry. The conventional draw stroke is used only in positions B and C. The rest are really modified forward strokes.

As the boater paddles toward the upstream gate, he begins to lean downstream (position A above) so as to start the boat's momentum into an on-side turn. The paddler accelerates the turn once he places his draw stroke into the eddy itself (position B) and leans briefly to his off-side to accelerate the turn even more (positions C and D -- watch your balance!).

This draw should be a fairly long one -- the boater must reach out more than usual and convert the draw stroke into more of a forward stroke when the boat is upstream in the eddy (position D). The combination draw/forward stroke should be so powerful that after the stroke is finished the paddler's entire chest is in the gate. He then quickly feathers forward to make his downstream draw and exit the gate -- two strokes to get in and out of the gate. If the paddler has encountered optimum conditions he may be able to get in and out all on one long pulling draw stroke.

The paddler then leans his torso backwards, both to sneak the gate and also to put himself into a stronger position for executing the downstream draw.

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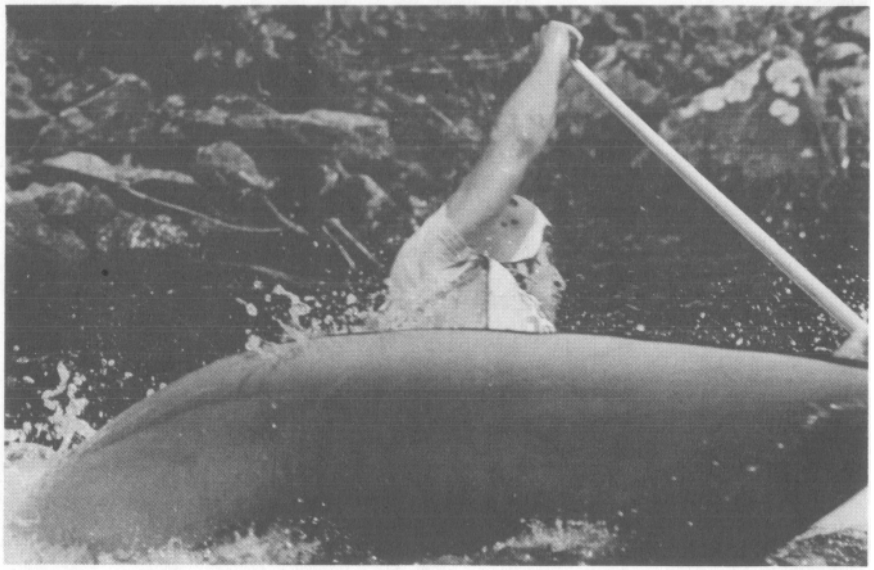


4

Keeping the bow up -- Jon Lugbill exits an upstream gate

1. Jon pulls his body abreast of the gate line.

2. As soon as his body is on the gate line, he prepares to execute a downstream draw.

3-4. With a strong backwards (and downstream) lean, he peels out of the gate, keeping the bow up as much as possible.

Keeping the bow up allows the athlete to retain more control over the boat: it cannot be swept downstream prematurely.

(Milo Duffek photos)

1

2

3

4

Ron Lugbill demonstrates how to keep the bow up for the righty.

1. Ron pulls his body abreast of the gate line, and starts to cross over.

2. Note the severe off-side lean.

3. Ron begins to convert his off-side lean into a downstream one.

4. Because he is leaning so hard downstream and out, the bow comes way up in the air. (Milo Duffek photos)

B. Strokes for C1 On-Side Upstream -- Ideal Exit.

The exit briefly described above, is now examined in more detail in conjunction with Fig. 5-2.

After proper entry into the gate, the boater has his chest, or at least most of the bow of the boat into the gate already and the boat pointed towards the current (position D). Now, he slices forward for another long draw/forward combination stroke which turns him downstream (position E) and propels him forward (positions F and G). The key here is to sneak the outside pole (which would be the red pole in these diagrams) as soon as the body has passed the poles (position D) -- sooner than you think. There is a temptation to wait too long in order to paddle safely out of the gate, but this isn't necessary so long as the boater instinctively throws his weight back to sink the stern under the outside pole. But throwing your weight back is not the only thing you should do. David Hearn believes, "Leaning upstream a bit is as important as throwing your weight back. If you catch your edge a little and maintain speed, the stern will go under the water." Indeed, if the boater has a good boat and has executed the move properly, he can sneak just about anything.

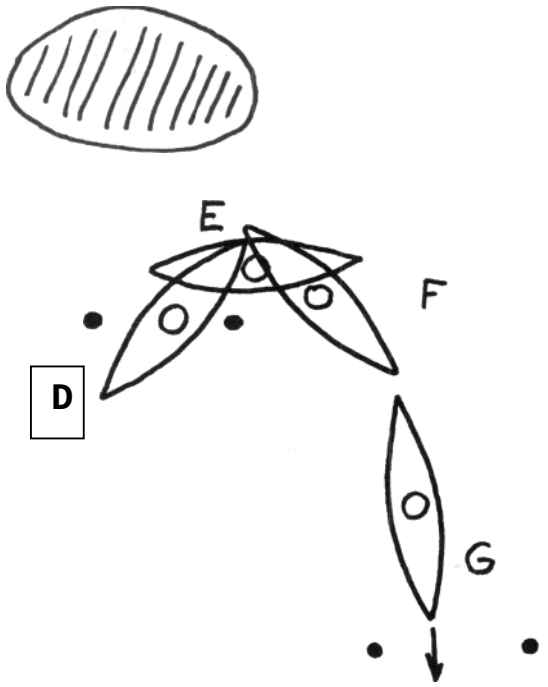


Fig. 5-2. Strokes for C1 On-Side Upstream -- Ideal Exit.

C. Strokes for Off-Side Upstream -- Ideal Entry.

Boat positioning in the approach to and exit from the off-side gate is similar to that for the on-side gate. However, since the cross draw stroke is used to get into the gate, the strokes used are altogether different.

On the approach to the off-side upstream, at position A in Fig. 5-3 below, the paddler sweeps to initiate turning momentum while still driving across the current towards the pocket. At point B, just as the bow drops below the gate line, the paddler goes over onto the cross draw. Since the cross draw is not as strong as the on-side draw, (and because forward lean prevents you from keeping the bow up) the boat will tend to slide across the eddy a little more and the entry into the gate will not be quite as fast. This may mean that you will be faced with sneaking the outside pole (red pole here), which is easy to do on the cross draw.

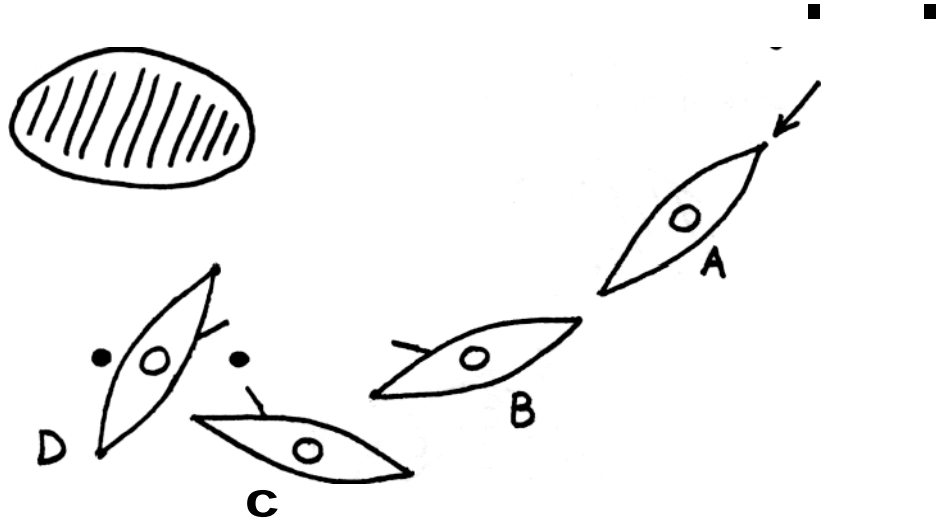


Fig. 5-3. Strokes for C1 Off-Side Upstream -- Ideal Entry.

To tighten the turn, use the method I described on page 73-74, and/or lean to the outside of the turn slightly -- but watch your balance. Lean to the outside only if you are not going to sneak the outside pole. Leaning to the outside raises the bow and makes sneaking difficult. 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 space left to jerk his weight forward at precisely the right moment to duck the bow under the outside pole.

However, the real key is the ability to exert torque with the waist so that the bow of the boat slices into the water starting outside the outside pole (red pole here) 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 prevent him from capsizing. Leaning is important because that gets the edge of the boat into the proper position for slicing into the water and under the pole.

D. Strokes for Off-Side Upstream -- Ideal Exit.

If the poles are high and a tight turn out of the upstream is desired, the paddler should probably stay on the cross draw through D-G in Fig. 5-4 below. If the poles are low, however, in order to sneak the outside pole (red pole here) the boater should do a sweep. If a tight turn is not desired, he switches off the cross draw at position E, so he can ferry into the current a bit in order to get over to the other side of the river. In this case, the boater has to resist the temptation to use the cross draw when exiting the gate. As Ron Lugbill explains, "while there is more control with the cross draw, there is more speed and power with the on-side."

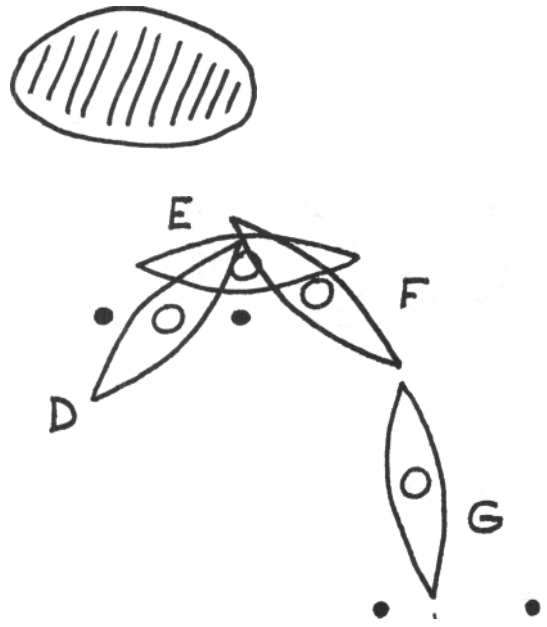
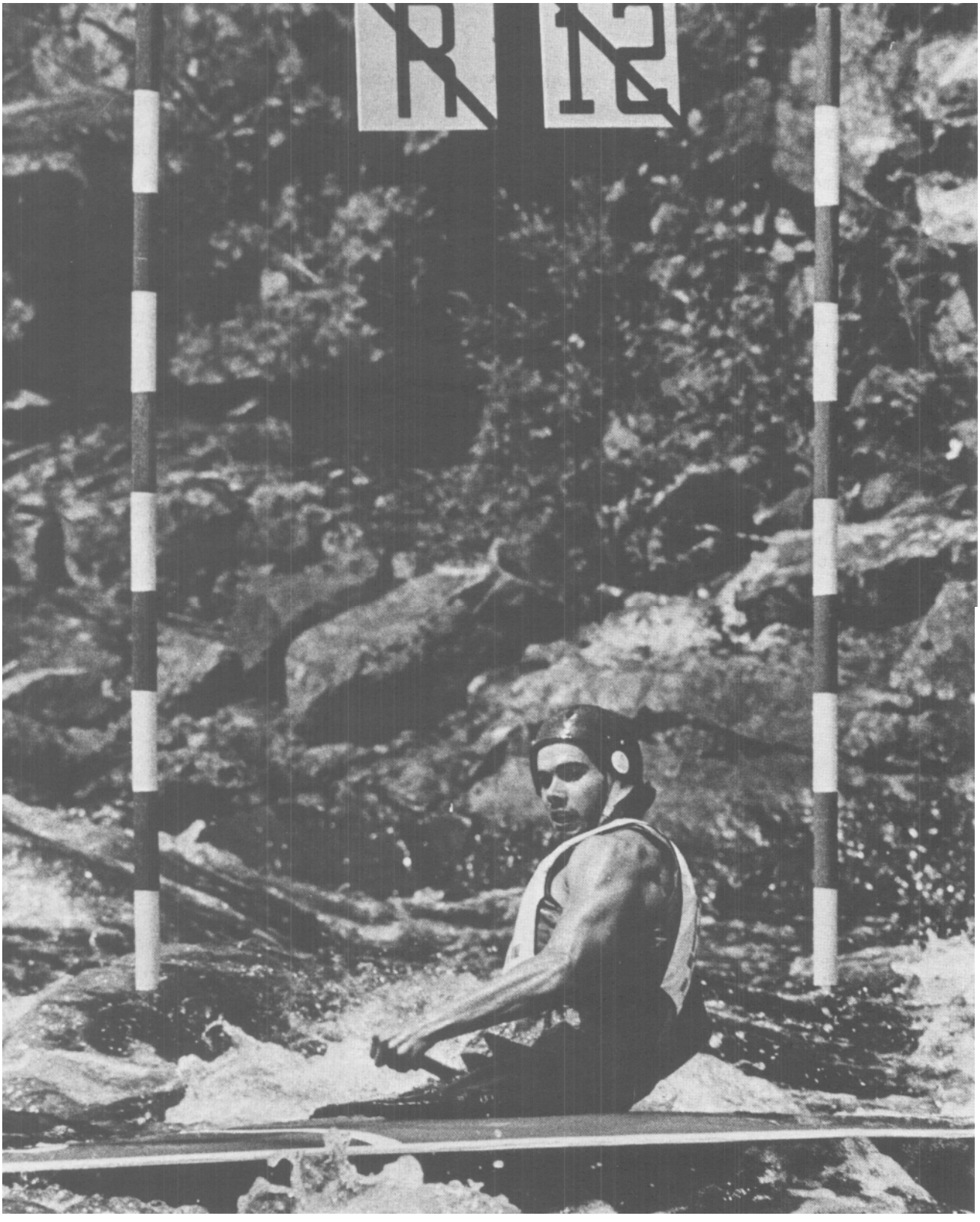


Fig. 5-4. Strokes for C1 Off-Side Upstream -- Ideal Exit.



The ideal reverse gate, demonstrated by Ron Lugbill, USA, fifth at Jonquiere, 1979. "Swoop in from the side and go through broadside." (Jim Thresher photo)

IV. Reverse Gates.

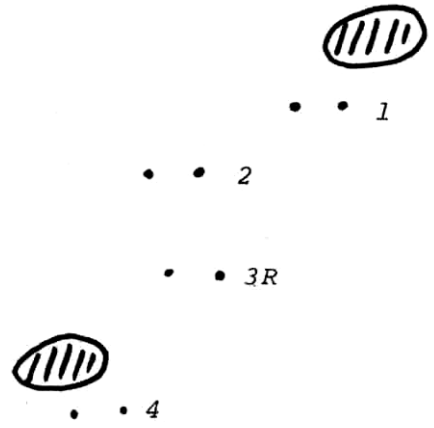
Next to upstream gates, reverse gates pose the greatest problem for the advanced racer. Penalties are often taken on reverse gates so running them clean is top priority -- lost time is less of a factor here than on upstreams. Still, valuable time can be frittered away and for the top racer, this is serious.

Time is usually lost on reverse gates by lining up for them too far upstream and then just drifting through them, and letting the bow drop all the way clear of the gate before turning for the next gate -- just the moves that will guarantee getting the gate clean.

The way to properly run reverse gates is to paddle right up to them, turn the boat sideways, with the stern slightly in reverse and then go through the gate a little in reverse. The boater leans backwards to sneak the stern under the first pole, then immediately rocks forward to get the bow under the other pole. Care has to be taken not to be too sideways in the gate, otherwise leaning back to sneak the stern will cause the bow to hit the other pole and vice versa.

A. Which way to turn for the reverse gate.

Consider the following sequence:



Which way should the right-handed C1 turn for 3R?

Which way should the left-handed C1 turn?

1. The righty should go through 2 almost sideways, bow angled towards river right. As soon as his body is through the poles, he should reverse sweep into 3R after sneaking his stern under the red pole on 2. He will then drop right into 3R, whereupon he can sneak his bow under the red pole on 3R with a forward sweep so as to set himself up perfectly for 4 up, an on-side move.

Turning this way from 2 to 3R is the most direct way and hence the fastest -- for the righty. The "stern turn", sneaking the stern under 2 on the way to 3R, requires the least amount of turning of the boat.

2. The lefty should go out of 1 a little bit higher so as to be coming through 2 pointed bow towards river left. He paddles across to 3R, then does a reverse sweep to turn the boat. He sneaks the stern under the red pole on 3R and then sneaks the bow under the green pole on his way out of the gate by using a bow draw. From there on, he has a cross draw turn into 4 upstream.

Jon Lugbill reaches through a reverse gate: this way his paddle cannot get in the way and hit the gate.
(Milo Duffek photo)

3. Who's faster?

If this "race" is between two paddlers of equal ability, the righty will win.

Why?

Because turning the boat 360 degrees at gate 3R will result in lost time for the lefty. But chances are the lefty could not stern turn quickly from 2 to 3R because it would require a stern draw which is not as effective as a reverse sweep. Better for the lefty to turn 360 degrees the way I have suggested and speed through the sequence: He may be up against a righty who tries to turn the same way as he does and thus blows an opportunity to win; or, more realistically, the lefty has to simply wait for a "lefty move" where he has the advantage.

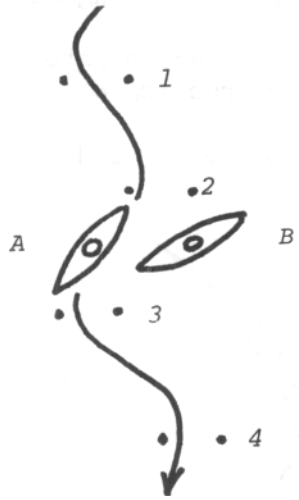
It has been correctly stated that 360 degree turns have the advantage of being safe -- there is no blind spot. I agree with this except to add that top racers will have to become more adept at blind moves as time goes on. Often the key variables in determining whether to do a 360 degree turn or not are the height of the poles and the distance between the gates. If there is a great distance between the gates, you do not want to reverse very far because it is slower than paddling forward. If the poles are high, you can perform a blind move without fear of hitting them.

B. Reversing all the way through the reverse gate down to the upstream.

This is confined only to flatwater moves. Consider the little sequence again. If the water is very flat and the distance between 3R and 4 up is 20 feet or less it might be wise to simply reverse through 3R and stay in reverse all the way down to 4 up. Turning out of 3R, taking one or two forward strokes before turning into 4 up isn't worth it; it's faster just to back up, especially if you are skillful enough to sneak the bow under the inside pole (green pole here) on 4 when you come along side of it.

V. Offset gates.

Improper negotiation of the offset gate sequence can result in lost time and penalties. As I mentioned previously, the strategy should be to turn above the gates, not in them. In Cl, if you try to turn in the gate, there is a real danger that you will have to sneak the stern on one of the poles. If you do that, you will probably turn the boat sideways too much and wind up in position B below instead of A.



Like many slalom moves, the offset gate sequence takes great concentration, especially if there are four gates in a row. It pays to slow down a little in order to ensure proper placement of the turning strokes. In the end, this will be faster than turning in the first gate, having to panic to get to the next, then desperately sneaking that and having to back-ferry the last one.

Let's go back to the righty-lefty paddlers and describe how both of them would do the offset sequence above. See Fig. 5-5.

A. The lefty should:

1. Paddle over to a spot above and a little outside gate 1, so he can use a draw to turn the boat into the gate. After turning, he shoots the gate, paddling hard over to a spot above and a little to the outside of gate 2.

2. Reaching the spot above gate 2, he then goes on the cross draw and holds it briefly, even if he has to be on the cross draw while paddling through the gate. Using the cross draw here instead of a pry or simply sweep strokes holds the boat to the inside of the turn thus preventing it from slipping sideways and out of control. Leaning slightly to the outside is very helpful.

The racer paddles to a spot above gate 3 and takes 3 to 4 the same way he did 1 to 2.

B. The righty should:

1. Paddle over to a spot above gate 1 and use the cross draw to turn the boat and keep it from slipping sideways.

2. Paddle hard over to a spot above gate 2 and use a draw turn to get the proper angle for shooting 2.

3. Execute 3 to 4 the same way as he did 1 to 2.

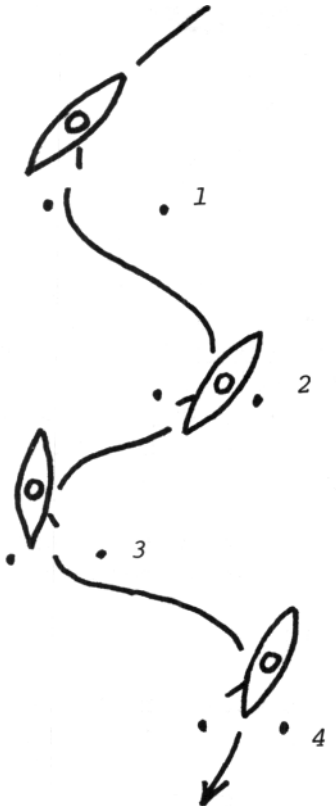


Fig. 5-5. Offset gates in C1.
Turning strokes have to be started before boat enters gate and continued through it.

VI. S-turn gates.

Whenever there is the possibility of doing an upstream as an S-turn (dotted line below) instead of doing a 360 degree turn (solid line), investigate thoroughly. It may be faster, even if you have to do a cross draw to get into the gate.

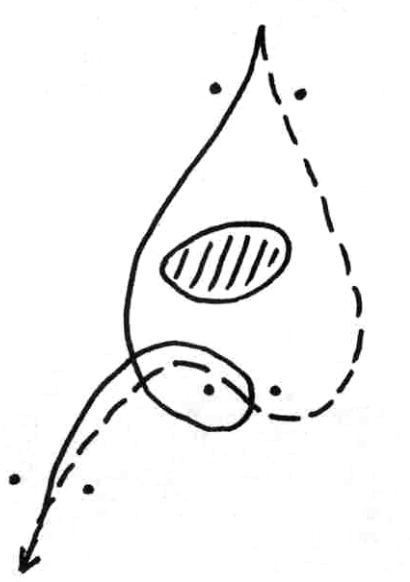


Fig. 5-6. S-Turn Gate in C1.

A. Righty on the S-turn.

As in upstream gates, there is a host of variables to consider when choosing the proper strategy for an S-turn. Assuming that we have the same ideal conditions we had for the diagrams showing upstream execution, the righty C1 should do the above sequence as follows:

1. Approach the gate as though it were an ideal on-side upstream, but do not aim for the pocket.

2. Turn the bow into the gate sooner than for a regular upstream.

3. Pull on the draw and convert to a sweep until his body is past the poles and then do a cross draw to turn downstream. When entering the gate on the draw, however, care has to be taken not to let the boat turn upstream too much. Converting the forward draw into a stern draw will help.

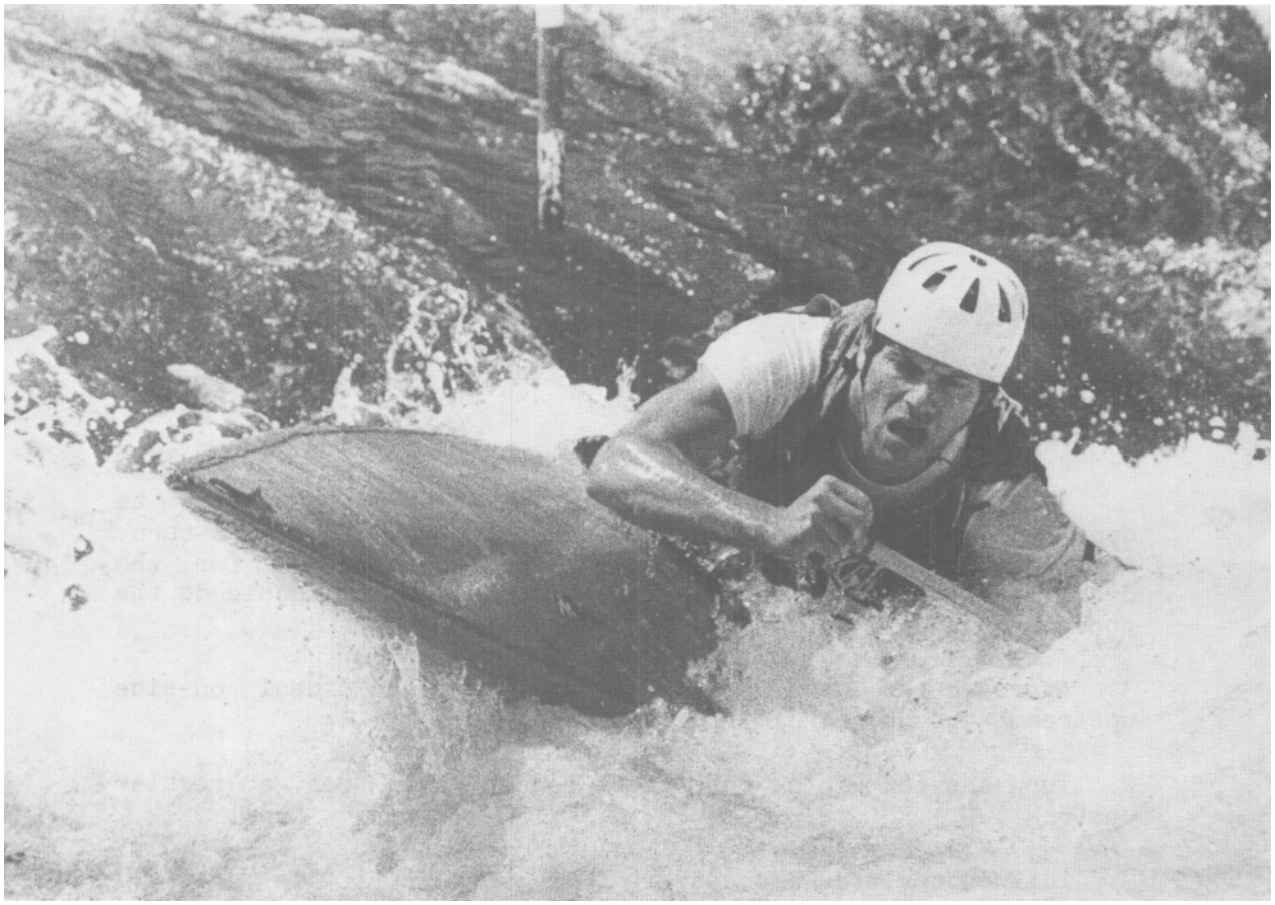
B. Lefty on the S-turn.

In the above sequence, the lefty should:

1. Approach as though for an ideal off-side upstream but do not aim for the pocket.

2. Turn into the gate earlier than he would for an upstream, but take care not to exert too much pulling on the cross draw because this will turn the boat upstream too much. Then, convert to a cross bow sweep.

3. After getting his body abreast of the poles while still on the cross bow sweep, switch over to a draw and a normal exit.



Juergen Schnitzerling, Federal Republic of Germany, Europa Cup Champion (1978) and fourth at Jonquiere, 1979.
(Fred Schollhorn photo)