

Paddling your sit-on-top

In recent years sit-on-top kayaks (SOT) have outsold other forms of canoe and kayak. It's not hard to see why: they can be used by young and old, are stable and have predictable handling, divers can jump off and on, they do not need the capsize and rescue skills of decked kayaks... In short, they're fun on the water in an easily used package.

SOTs do have disadvantages. Most are slower than decked kayaks, and they offer less protection from the sun and cold conditions.

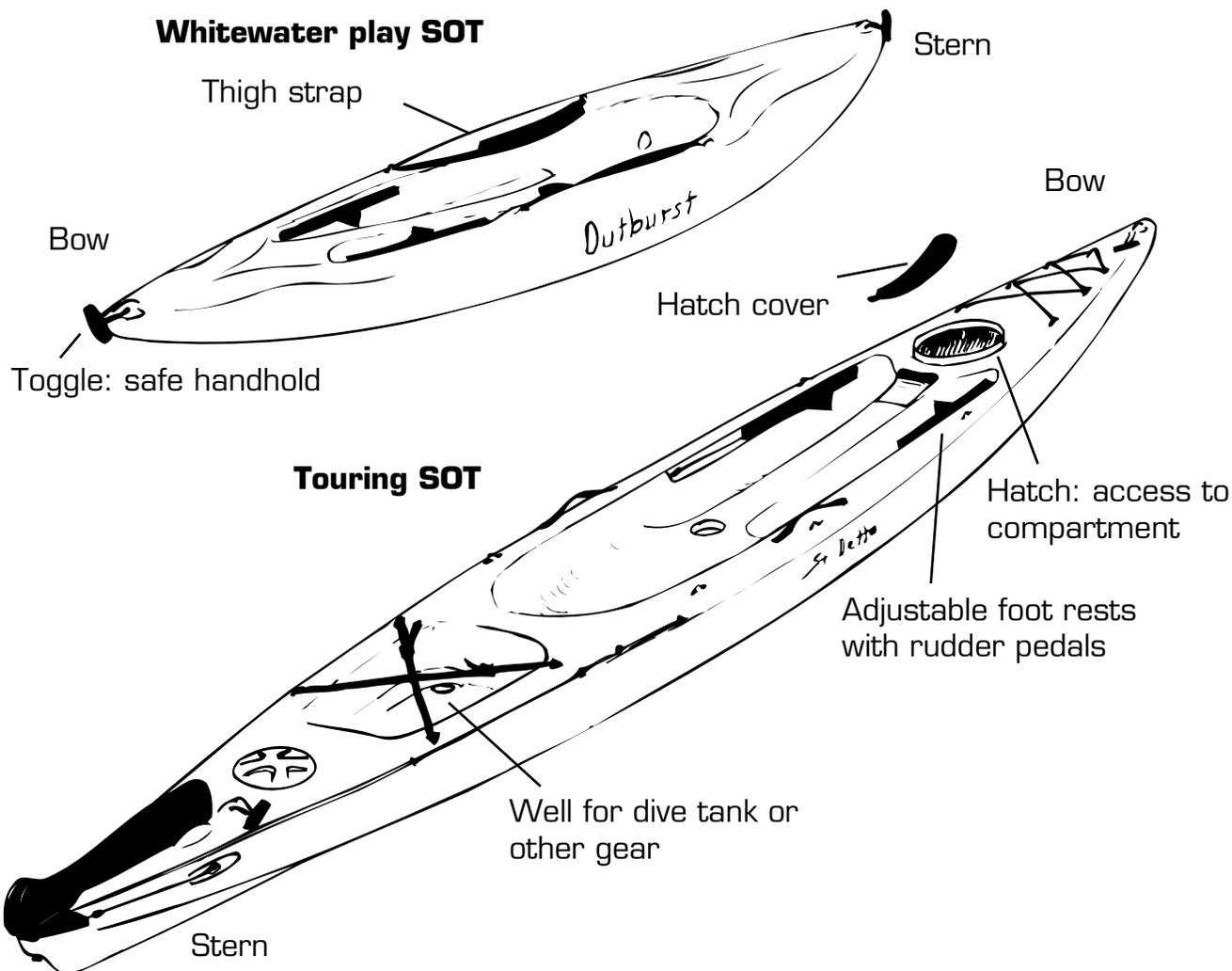
These notes are designed to help you get the best out of your SOT.

Choice of boat

What do you want to do with your boat? Do you want to go diving or fishing, paddle distances (perhaps on overnight trips), paddle surf or white water, or just paddle about and have fun?

SOTs come in various shapes and sizes, and the shape and size determine the way a boat performs. In general, the longer the boat, the faster but less manouvrable it will be. The wider it is, the more stable it will feel, but the slower it will be. A boat with rocker (a curved keel line) will be more manouvrable, but slower, than one with a straight keel.

If you're interested in paddling any distance you'll choose a longer, narrower, craft. Hatches into the interior space will be useful, as will wells for dive tanks and other gear. For paddling whitewater or surf a short boat with ample rocker will be the choice, and the thigh straps will come in handy.



In a decked kayak the seat can be below the water level. In most SOTs the seat is above water level, or you sit in a puddle. That raises the centre of gravity, so to maintain the stability, the boat must be wider. That means that such SOTs are slower than decked kayaks: all design is compromise.

Double boats offer two seats for less than the price of two boats. They're faster than singles, and one paddler at a time can relax temporarily.

The majority of SOTs are made from polyethylene, rotomoulded on one piece. That makes them tough, able to bounce off rocks, but they are not indestructible. They can be punctured by collisions with sharp objects, and dragging them across the ground will eventually wear through, and polyethylene is not an easy material to repair. It's a good idea to fill the inside with buoyancy materials—inflated wine, juice or spring water casks are ideal—just in case.

Various optional items are available. If you want to paddle white water or surf you'll need the thigh straps. Most of the backrests on offer restrict body movement too much, so that's one item you may do without.

A rudder may come in handy on a double, and on singles used to paddle distances on open water. Rudders on kayaks are not there for steering, because kayaks are steered with the paddle and boat lean, but to help keep straight when you have wind and wave behind you.

Other gear

You'll need a paddle. Kayak paddles have two blades, usually feathered at an angle between about 75° and 90°. For paddling distances, a longer paddle, perhaps 220cm, for whitewater and surf, shorter. As with everything else, there's a range of materials and quality, and you get what you pay for.

The other essential is a personal flotation device (PFD). Boating regulations vary from State to State, but will require you to wear a PFD. You want a PFD Type 2 or Type 3, one designed for paddle sports. Wear a cheap PFD 1 and you'll find it most uncomfortable.

Remember that the PFD will not save your life. It will support you in the water and give you some protection if you're dumped on rocks.

Because you're very exposed on a SOT you'll need to be particular about clothing. In summer, take all the SunSmart precautions: hat, sunnies, long sleeves, long pants. In cool weather, thermal clothing, even a wetsuit for whitewater or surf, a windproof jacket, and a warm hat. Cotton will not keep you warm when it's wet, and you will get wet. Jeans are deadly for swimming in, so you should not wear them on the water.

You will need footwear. This might be an old pair of sneakers, sport sandals, wetsuit boots, or a pair of the shoes designed for watersports. Broken glass or shells can cause nasty injuries.

If you plan to paddle whitewater or surf you'll also need a helmet. EN 1385 is the relevant standard.

To carry personal valuables, lunch, dry clothing, and so on, one or more of the long narrow waterproof bags used by kayakers.

It's best to buy from specialist canoe shops, from people who really understand paddlesports.

Storage and transport

Store the boat under cover, preferably off the floor. The material used in these craft has UV stabilisers, but it does degrade over time.

For car-top transport, have the roof bars widely spaced to spread the load, and make sure the boat is secure with rope or straps. Some makers suggest that you transport the boat upside-down.

The safest way to carry a boat is with a person at each end. You may be able to manage short distances by carrying the boat like a suitcase, but don't try that over rocks or other uneven surfaces. Loading the boat on to the car is also easier and safer with two people.

Maintenance

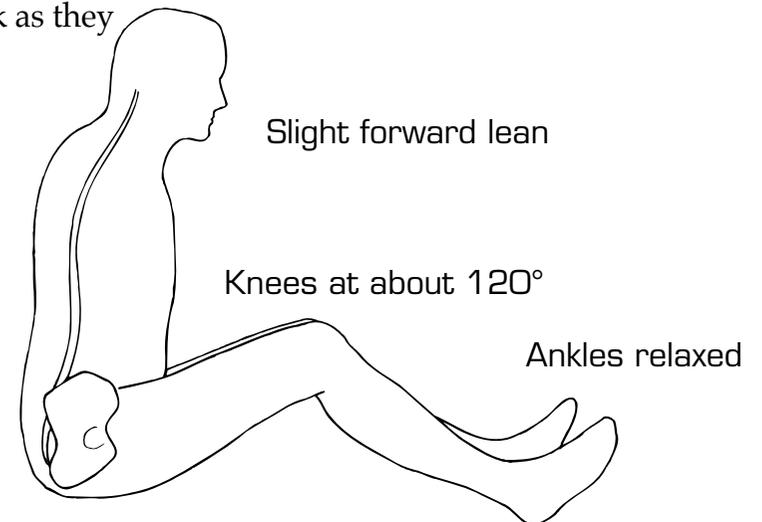
Wash everything after use, particularly if it's been in salt water. Make sure that moving parts—footrests, rudder and its pedals—move freely, without sand or mud in them. Leave the hatchcovers off so the interior dries out. Make sure that zips and buckles on PFDs work as they should.

Boat setup

You will need to set up the footrest, back and thigh straps, if you're using them, so that you can sit comfortably relaxed, with room to wriggle, yet can brace when necessary in rough water.

The footrest should be set so that the knees are slightly bent, and the ankles relaxed. The backstrap, if there is one, should be against the lower back, but again without pressure. To brace, extend the feet to tighten everything all round.

Adjust the thigh straps so that you are held firmly, but able to release them by straightening the knees.



Paddling

You may be on the water for hours on end: for comfort and safety it pays to have an efficient, relaxed style that maximises power and minimises fatigue, strain and injury.

Ergonomics and posture are important, and the diagram shows how you should look: slight forward lean (5–8°) from the pelvis, back straight without being forced, shoulders ahead of hips, head, neck and shoulders relaxed. The legs are slightly bent, enough that you can't quite push them straight without moving on the seat.

Lean too far forward and you restrict movement and lung capacity, lean back and again you will restrict movement.

Where are your most powerful muscles? No, not the arms. In paddling, your arms are little more than the linkage between the power source, the muscles of the body, and the paddle. Your arms are there to put the paddle into the water and take it out again: power comes from body rotation, right from the toes. It's body rotation that shares the load between the muscles, and smoothly produces more power and length of stroke. That's true of all strokes.

Holding the paddle



Your hands need to be about elbow width apart. A common way of checking that is the 'surrender position'. With the paddle on your head there will be right angles at the elbows. Grip the paddle with your right hand: the oval grip will help hold the position instinctively. Allow the shaft to rotate in your left hand as your wrists work in opposite directions.

The hand positions do not change. Keep the same grip whether you're going forwards, backwards, sideways, round and round, or whatever.

If you're using a paddle with asymmetric blades, like the one in these diagrams, note that the long edge is the upper edge of the blade.

The 'paddler's box'

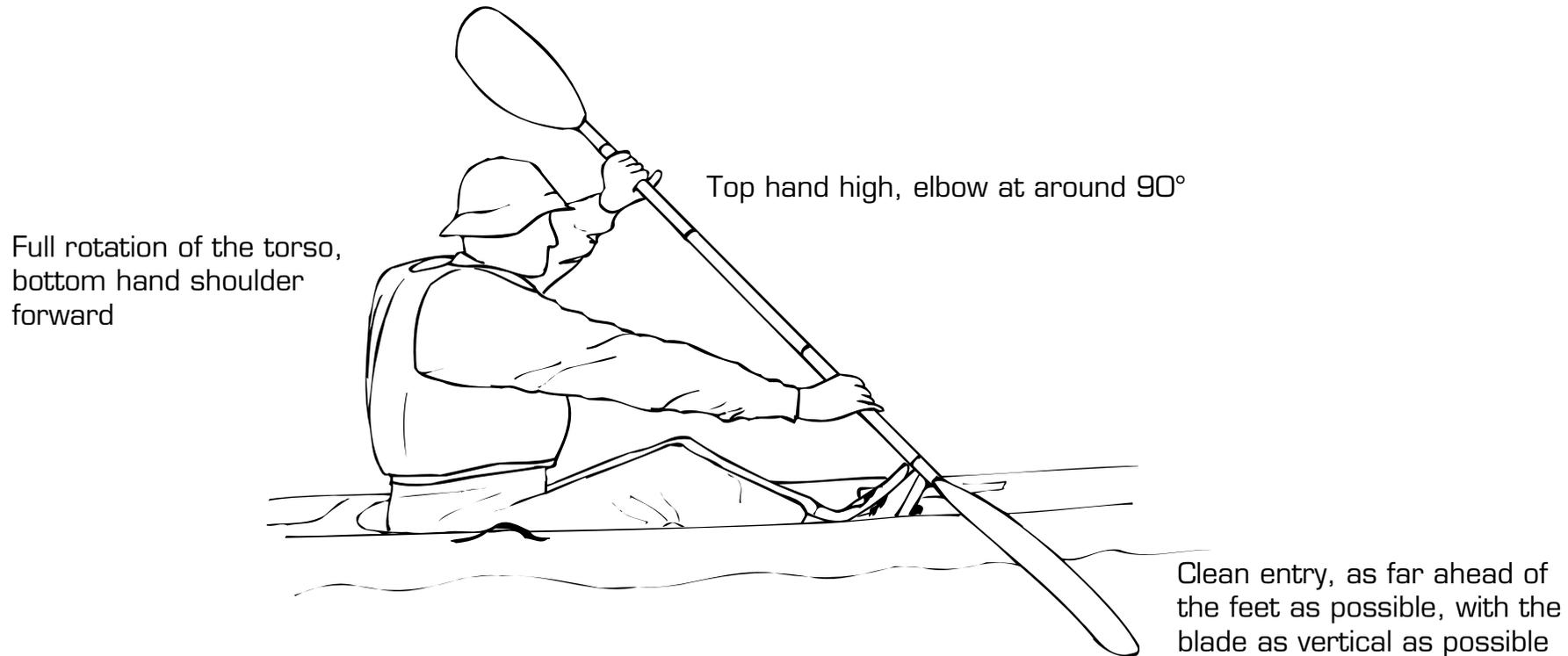
The shoulder is the joint in the body with the greatest range of movement. It's also the most susceptible to dislocation and other injury. To reduce the likelihood of injury, and also to develop the most power, the elbows should always be in front of the line of the shoulders. The roughly rectangular volume in which the hands work is called the 'paddler's box', and that space rotates with the shoulders. If you want the paddle blade behind you, as in reverse strokes, it means that you rotate the body so that your elbows remain in front of the line of the shoulders.

Forward paddling

You want to go places, so forward paddling is the important stroke. It's usually described in three phases.

Catch

The catch is the start of the stroke, the entry of the blade into the water.



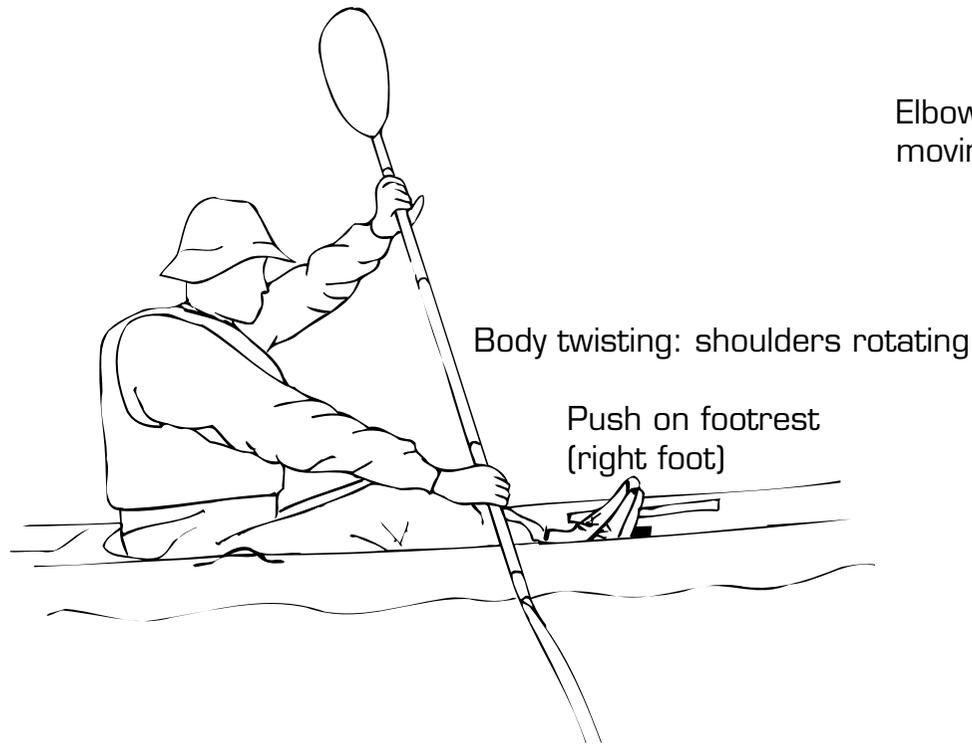
Think about the bottom hand taking the blade to the water in a spearing motion, with the top hand following the shaft movement, but not pushing the blade in. Completely bury the blade as quickly as possible, keeping the bottom hand several centimetres clear of the water throughout the stroke.

Power

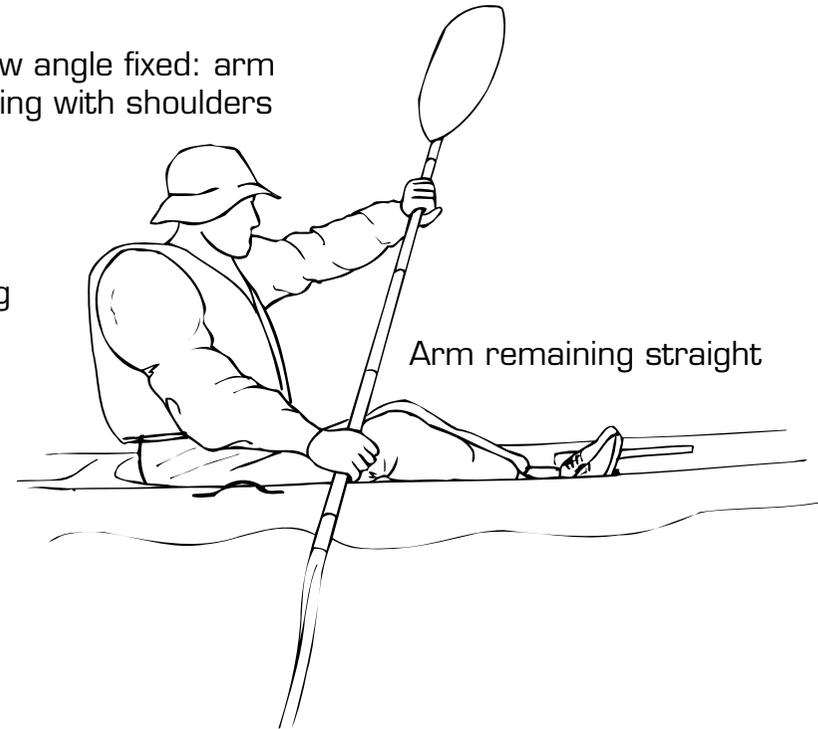
Think of the blade as being fixed in the water: you pull the boat past it. From the catch, the stroke is 'taken' by the whole 'pulling' side of the body—toes, leg, hip, torso, and shoulder—all working smoothly together.

The bottom arm remains in a fairly extended position throughout this phase, with the top arm, elbow bent, and hand at around eye height and 30–40 cm in front of the head, following the rotation of the shoulders.

Think of the arms and shoulders remaining fixed through this phase, forming a 'frame': in other words the elbows are not bending or straightening but remaining at the same angles. The top hand does not push, it follows the shoulders.



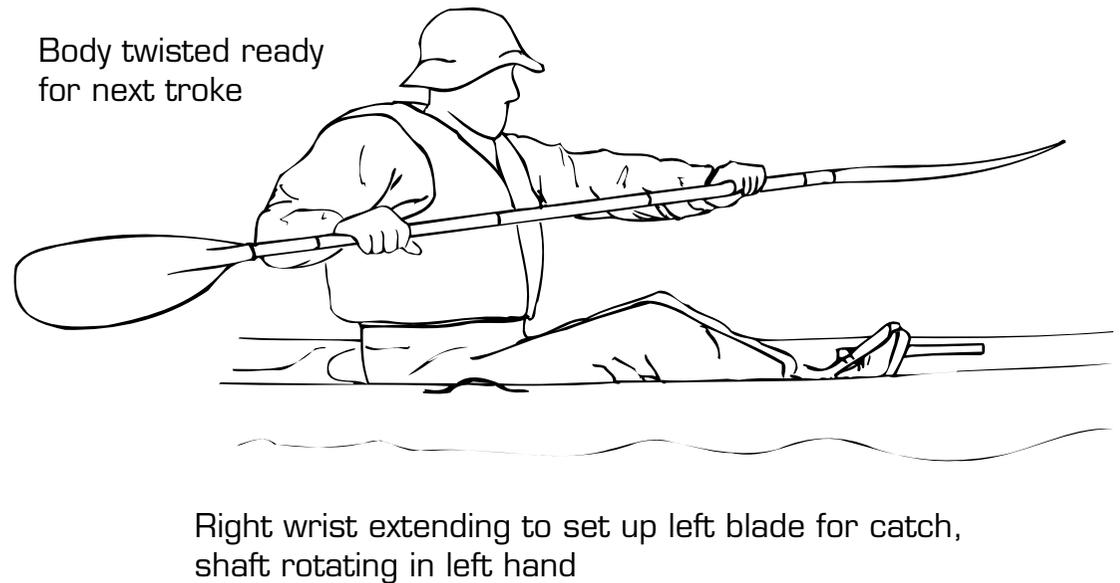
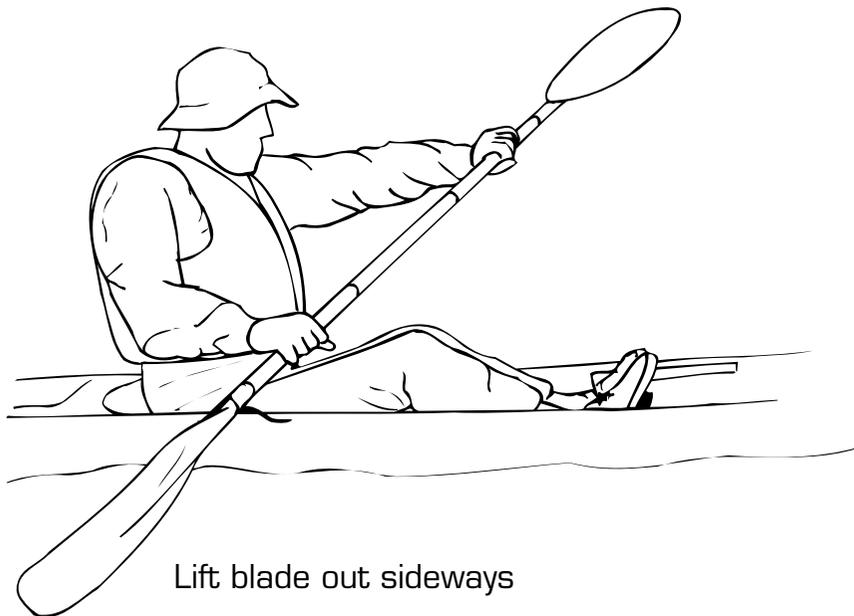
Elbow angle fixed: arm moving with shoulders



Exit and recovery

The stroke is finished when body rotation is complete. Taking the stroke too far is simply wasted effort. At exit, the blade moves out of the water to the side, with the top hand still high and the bottom elbow bending to lift the blade. That elbow should stay low and relaxed. At this stage the paddle is parallel to the centreline of the boat, but over the side.

You are now in position to set up for the catch on the other side, where the stroke is a mirror image.



Touring strokes

When you're paddling for hours on end you will prefer a more relaxed stroke. All the principles described above still apply, but the stroke will be a little lower and wider, with the top hand lower.

In windy conditions a lower stroke is safer and more stable, with the top blade less exposed to crosswinds, and with the blade in the water able to provide a little support.

Going straight

For a while it may seem that the boat has a mind of its own, as it wanders about. Make sure you are holding the paddle correctly, and are paddling evenly on each side. Notice that the bow yaws from side to side with each stroke: get the timing right and you'll go in a reasonably straight line.

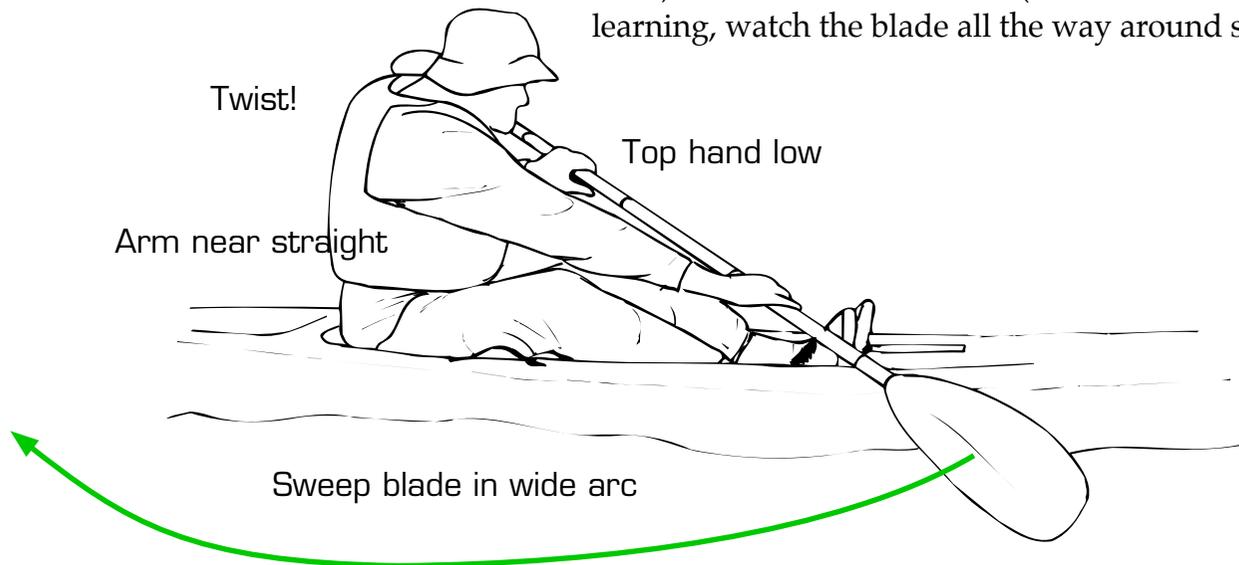
At first, you will tend to overcorrect too late. That's normal, and you'll improve with practice. If the boat has a rudder, put it down, but do not attempt to steer with it. Use the rudder simply to reduce the amount the boat yaws. As you improve, pull it up and paddle without it.

Sweep strokes

Sweep strokes are the main strokes for turning the boat at low speed, either to manoeuvre into position or to keep the boat running straight. You might prefer to start paddling by practising the forward sweep so that you develop some confidence that you can control the direction of the boat before starting on forward paddling.

As with other strokes, power comes from the torso muscles, but here the stroke will be a long wide arc, the longer and wider the better. For a forward sweep, twist to reach forward and put the blade in as close to the bow as possible. The lower arm is slightly flexed, the top hand low, just high enough to clear your knees. The blade should be completely immersed, just beneath the surface.

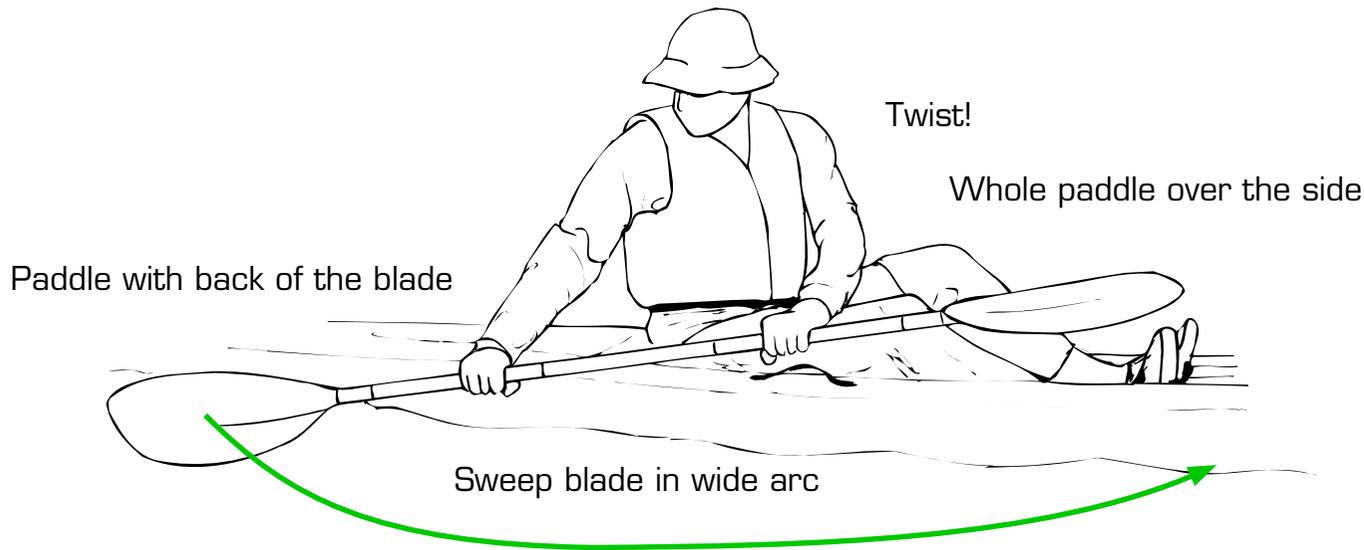
Apply power by twisting the body in the opposite direction, keeping shoulder and elbow angles fixed, so that the blade moves (relative to the boat) in a wide arc all the way to the stern. While you are learning, watch the blade all the way around so that you develop the full twist necessary.



The reverse sweep works the same way, but in the opposite direction. Begin by twisting so that the whole paddle is over the side and put the blade in close to the stern. (No, don't change your grip on the paddle: all reverse strokes are with the back of the blade.) Now twist the other way to move the blade in a wide arc all the way to the bow.

One or more forward sweep strokes can be used to keep the boat straight if it wanders as you paddle forwards. When you want to turn on the spot, alternate forward sweep on one side with reverse on the other.

As you develop confidence, look where you are going rather than watching the blade through its arc.



Reverse paddling

You will want to back out of some situations. The starting position will look much like the start of a reverse sweep, except that the blade will be flat on the water. Using power from body twist, and with arms straight, drive the blade forward. Twist around for the stroke on the other side. Keep the blade in close for power, sweep it wide if you need more control.

To see where you're going, look over one side as you twist around.

Brakes?

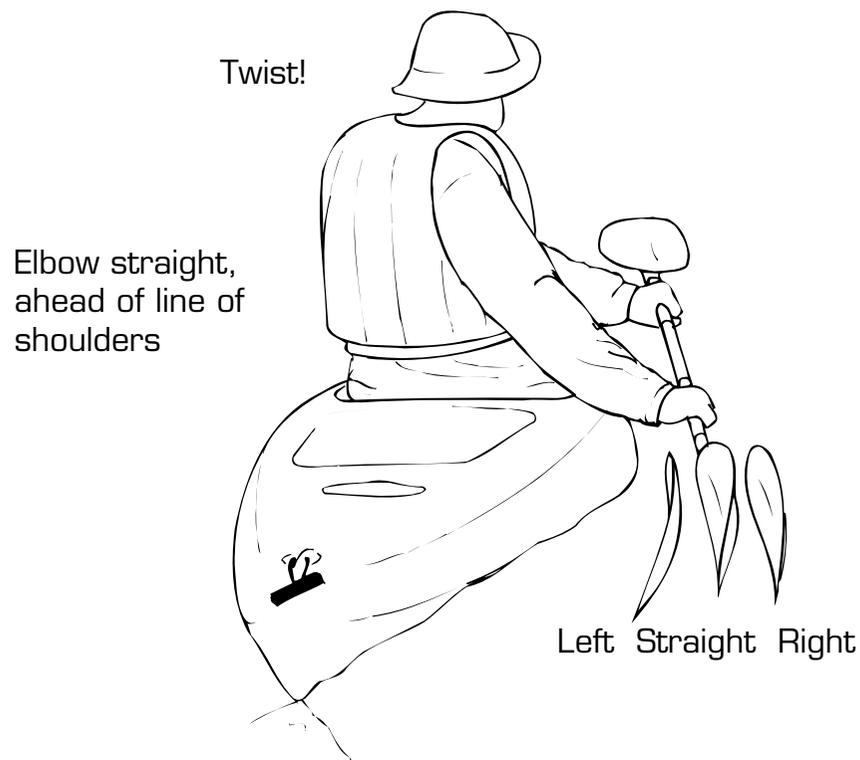
If you need to stop in a hurry, the emergency stops. Going forwards, make short reverse strokes, with blade close to hull, and shaft vertical. Make the strokes on alternate sides to keep straight.

In reverse, make short forward strokes, on alternate sides.

Stern rudder

Stern rudder strokes allow you to guide the boat through obstacles, or control it downwind, with the ruddering added to the end of a long forward stroke.

The blade position is that for beginning a reverse sweep: paddle over the side, body twisted. The elbow must be near straight. By varying the position of the blade you can turn either way.

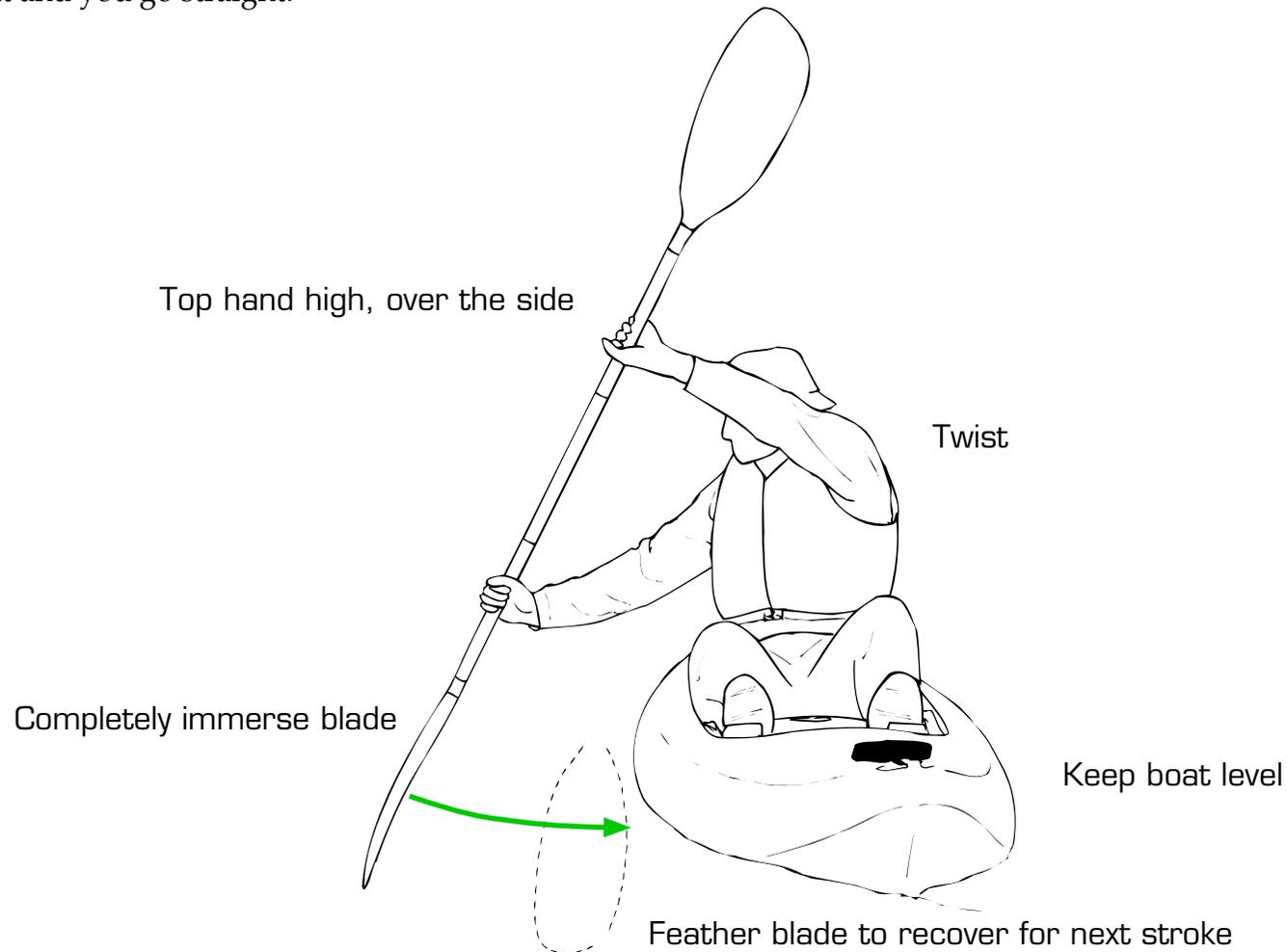


Draw stroke

You can go sideways to form a raft with another kayak or to approach a jetty with draw strokes.

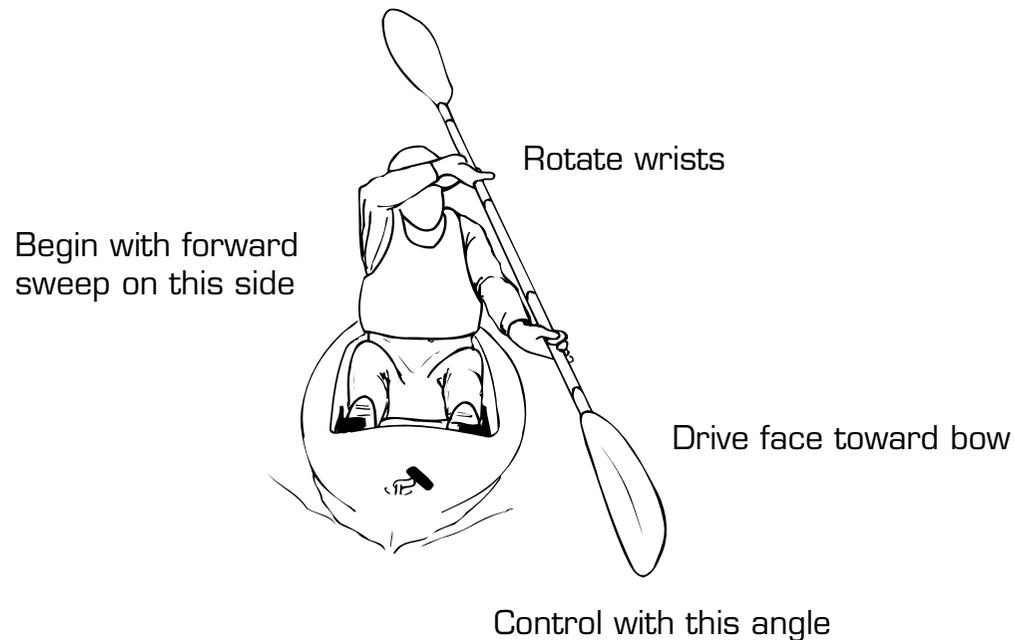
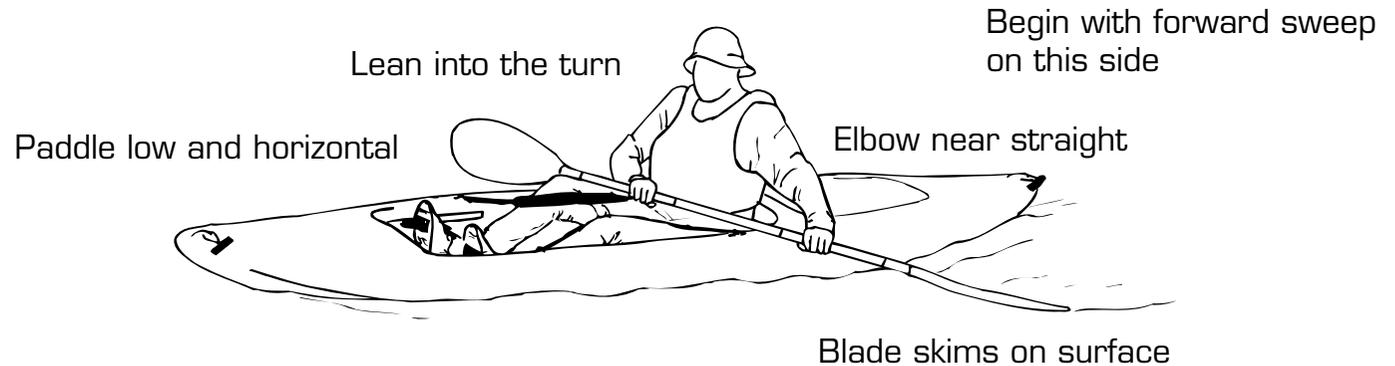
Turn the body to face the way you will be going. Keep the shaft vertical with the top hand high, and over the side. Reach out with the lower hand and draw the blade towards the boat, keeping the top hand steady. Before the blade touches the hull, lift the wrist, rotating the paddle 90°, and slice the blade away for the next stroke.

Working the blade nearer the bow turns the kayak one way, nearer the stern the other direction: just right and you go straight.



Two turning strokes

The **low brace turn** is an easy safe turn for whitewater SOTs. Begin with a forward sweep on the opposite side, then hold the paddle near horizontal and out at about 90° so that the blade skims along the surface. Lean on to the blade. If you have thigh straps, lean the boat into the turn. (This is called **edging**.) As the boat slows, put the boat back level and continue paddling.



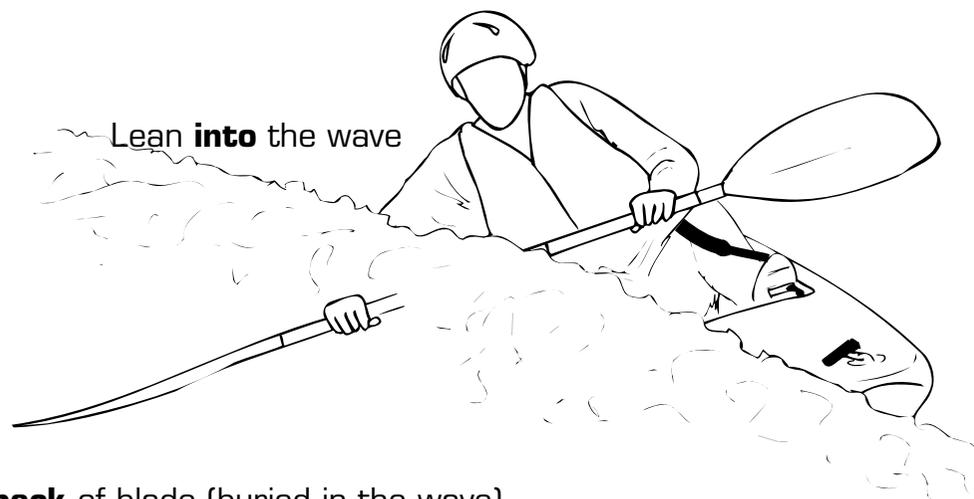
The **bow rudder** stroke is for whitewater SOTs or the bow paddler in a double. The position is that for a draw stroke, but with the blade well forward, and angled. Note that the wrists, especially the top one, must be rotated a long way. In a single, begin with a forward sweep on the opposite side. As you finish the turn, lift the wrists and begin a forward stroke.

Support stroke

On flat water you will hardly ever need support strokes on a SOT. In surf or white water you will need to support yourself. Although the paddle is used, the righting action comes from the hips, which means you will need to be held by thigh straps.

Reach out with the paddle, back of the blade down, shaft near horizontal, elbows above the shaft.

In waves as shown here, lean **towards** the wave, on moving water, lean **downstream**.



Support on **back** of blade (buried in the wave)

Paddling a double

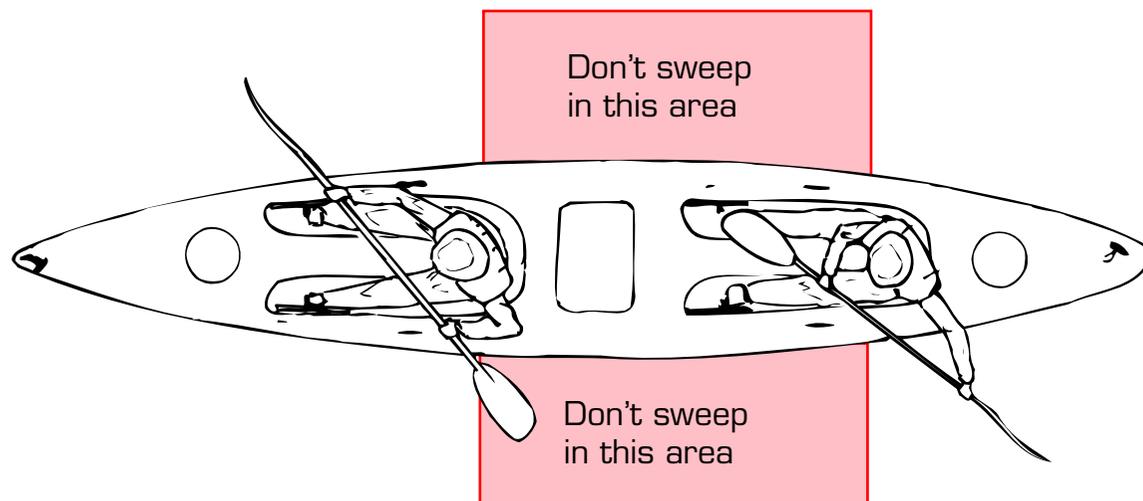
Everything discussed above applies to double SOTs. But there are a few extra things to consider, the first being that you must keep together so that the boat moves smoothly, and you do not clash paddles.

Paddling a double is an exercise in cooperation, communication, and coordination. Each paddler must know what the other is doing, and understand how the boat will react to each stroke. Effective teamwork takes practice.

The stern paddler has a better overview of the boat and its surroundings, and is better able to control its direction with steering strokes, and of course the rudder if there is one. On the other hand, the bow paddler has a better view of nearby obstructions, and is therefore able to warn of them and begin taking action.

At first most communication will be verbal: with experience, paddlers will react to each other's strokes and the environment. Verbal communication is best as 'turn left' or 'avoid that snag' rather than naming a stroke: 'draw'. This helps each other understand where the boat is to go rather than blindly following stroke instructions.

There are important differences when it comes to turning strokes. Sweep strokes are through only 90° as shown below, and not the full arc. Only the stern paddler should use stern rudder strokes. Any strokes bow paddlers make behind them are a waste of effort, so this is where you use bow rudder strokes.



Different waters

Your first paddling is best on sheltered flat water, where you can learn to handle the craft without being distracted by wind, wave or current. Before long you will want to try something different.

Open water

This might be a lake or an estuary. The danger here is the wind. It will slow your progress, and may blow up a nasty chop. The wind will also carry away your body heat, so make sure that you are warmly clothed. Hypothermia is always better prevented than treated.

Be particularly careful if children are paddling. They lose heat more quickly than adults, and may not have the power to get back to shore against an offshore wind.

Paddling with wind and wave behind you is where you may find the rudder useful. Don't try to steer with every passing wave, but use it to keep the boat on course.

If it's a river or shipping channel, the rule is to keep to the right. As for other traffic, the general rule is that if it's bigger, faster, or more expensive than your kayak you keep out of its way.

Moving water

Experts paddle SOTs on big white water. That takes skill and experience, best gained with a qualified Instructor.

On any moving water, lean downstream for support, especially if you are swept against an obstacle. On a SOT you might even climb onto the obstacle to escape. Lean upstream, away from the obstacle, and you can be pushed under, perhaps to be trapped. Partly submerged trees are particularly nasty in this regard.

If you are forced to swim in moving water, lie on your back, feet at the surface, and feet downstream. Your partners on the bank should have a throwbag.

Keep well away from weirs, both upstream and downstream. They have evil habits of trapping boats and paddlers and churning them round and round.

Always inspect any moving water before you paddle it.

Surf

With a bit of practice you will be able to perform the tricks of the board riders, and then some. Kayak paddlers roll in surf, but when you come off you can easily climb back on again. To do that, kick your feet to the surface so that you can swim across the boat rather than try to lift yourself. If you're separated from the boat, stay on the seaward side and call a warning to anyone in its path.

To go out through surf, try to time things so that you meet waves before they break or after they are well broken. Paddle hard straight through breaking waves. Stop paddling, and you may find yourself going backwards.

On a wave, especially as you are being pushed sideways in the 'soup', lean towards the wave.

Follow all the normal surfing safety rules. The person on the wave always has right of way.

Playing safe

There are risks in all watersports: perhaps that's one reason why we enjoy them. Reduce the risks by

following the obvious advice: wear your PFD and adequate clothing, paddle in a group (four is a good number), and make sure someone knows where you are going. (The Australian Canoeing Float Plan is designed for this.)

If you're going any distance, carry food and water, first aid gear, mobile phone, etc.

If something goes wrong, can you get yourself out of trouble?

Your State waterways authority has published a safety booklet for small boat users. It's worth getting a copy and following its advice.

Environment

On the water, you leave no trace. But do leave the land as you find it: avoid trampling vegetation, and always carry out anything you carry in.

Paddle quietly, and you may be rewarded with a close look at birds and other wildlife. Dolphins and other creatures may even approach you. Enjoy, but don't disturb them.

If you're fishing or diving from your SOT, follow all the appropriate rules.

To sum up

You can have a lot of fun on your SOT. Develop your skills and you will enjoy it even more as you explore our waterways and their wildlife.

The State canoeing associations and their clubs can give you lots more information on paddling (they will have courses) and their local waters. The clubs will welcome your membership, and you can then paddle in the company of like-minded people.

Acknowledgements

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This book

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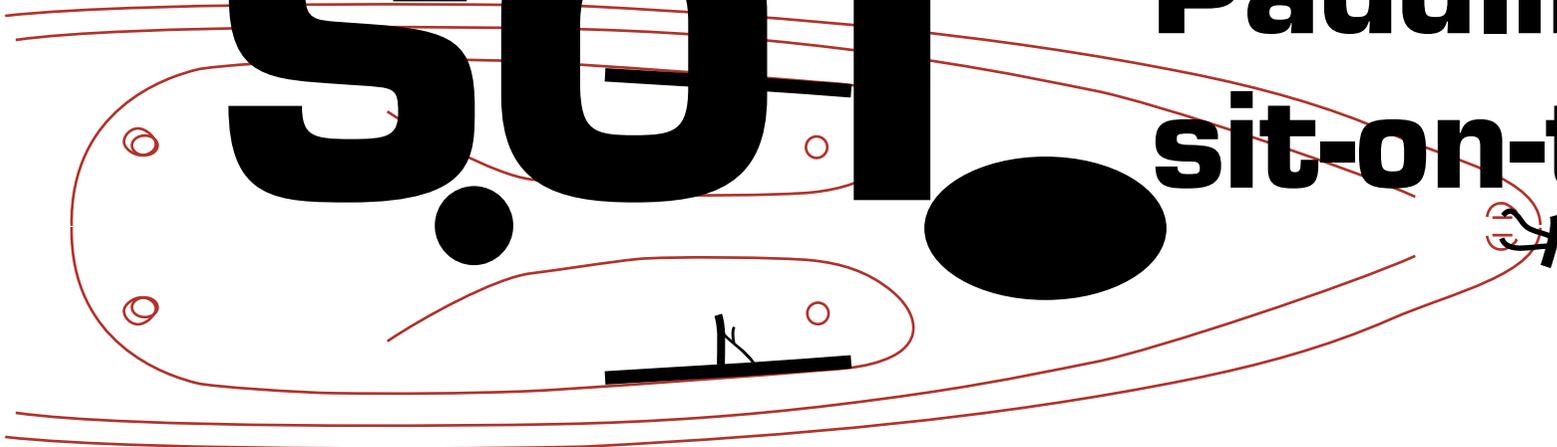
Canoeing Western Australia: PO Box 57 Claremont WA 6010 (08) 9285 8501

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The US Web site www.sit-on-topkayaking.com has a wide range of information covering boats and other gear, paddling, safety advice. etc.

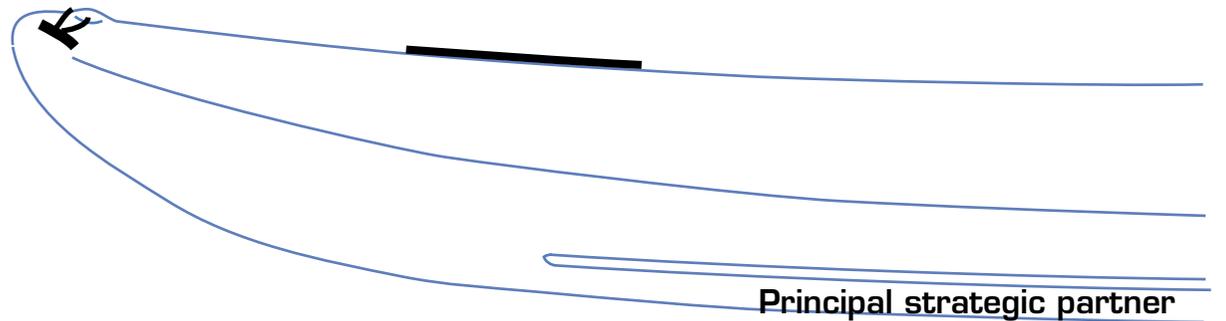
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Paddling your sit-on-top



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