## Paddling

Once you are on the water, it is time to control this beast of a boat that seems to have a mind of its own. In theory, paddling is really rather simple. There are only three types of strokes: propelling, turning and bracing. But these three stroke types can seem somewhat daunting when one considers the multitude of variations and stroke combinations. With the proper level of skill, just a simple flex of the wrist can alter the direction of travel and the angle of the boat.

Check first to make sure you're holding your paddle correctly. Choose the side of the canoe on which you want to paddle. This side becomes your on-side. Your hand on this side is the shaft hand (i.e., the hand that holds the shaft of the paddle). Your other hand is the grip hand, which rests on top of the paddle's grip and controls the angle of the blade. Your hands should be spaced comfortably about shoulder width apart, and your arms should remain mostly straight. If you plan to tandem paddle with one partner often, remember that you need have opposite on-sides.

There are a few basic principles for achieving maximum efficiency from a paddle stroke. First for maximum power transfer, angle the blade perpendicular to the force of resistance. In other words, when you want to move the canoe forward, hold the paddle vertically such that the face of the blade points flat towards the rear. Also, as you apply power through the stroke, ensure that the blade remains vertical to the water's surface. Any alterations to the lateral and vertical angles of the blade will either affect a turning motion or create lift of the water (wasted energy if you're just trying to go straight).

When you execute a paddling stroke be sure to not be a "lily-dipper." In other words, make sure that the blade of the paddle is fully submerged in the water at the mid-point of your stroke. You should power the stroke from your major muscle groups. You'll find that you have much more strength and endurance in your back and shoulders than in just your arms. Therefore, by rotating your torso and unwinding through the stroke, you'll go further than from just pulling on the paddle with your arms. Also by rotating your torso such that your chest always faces your paddles, you'll protect yourself from possible shoulder injuries. When you first start out, this principle is easily applied by watching the blade throughout each stroke. As you gain experience, you'll be able to rotate your body effectively while looking in any direction; usually the direction you want to go.

The basic strokes are really pretty simple. Some of the basic strokes in paddling are the forward stroke, the J-Stroke, and various forms of cross strokes, including cross forward, cross draw and cross back.

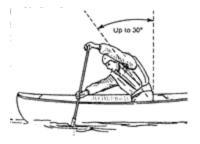
*Forward Stroke:* The paddle enters the water comfortably ahead of the paddler's position. With the blade perpendicular to the keel line and the paddle vertical, pull straight along the side of the canoe. Keep both arms relatively straight throughout all phases of the stroke. Push forward and down over the blade with the top arm and pull with the lower arm. Body and shoulder rotation provides much of the power.





*J-Stroke:* This stroke provides forward momentum at the same time that it keeps the canoe on a straight course. Start off with a forward stroke, but then push the top hand farther out over the water than the lower hand. This motion moves the blade under the boat and carves the -by levering the paddle off the boat. The last push away from the boat should be a quick one.

*Cross Forward:* Executed parallel to the canoe's centerline. Both hands remain over the water, keeping the paddle shaft vertical to the water. The stroke is short and performed in front of the body. The paddle is planted as far forward as a person can lean comfortably. Move the upper body forcefully to an upright position and stop the stroke at your knees. An underwater recovery helps to establish a quick back-and-forth rhythm.





*Cross Back:* More often used by solo paddlers, this stroke requires good upper-body flexibility. The paddler crosses over the boat with the paddle and inserts the blade opposite the hips. The body must be rotated until the shoulders are almost parallel to the boat's centerline. This stroke is a powerful way to stop a boat quickly to scout a rapid, and is usually used with a back stroke to maintain position in the river.