Canoe Skills

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Parts of a Canoe and Paddle

ENTERING A CANOE

Before discussing how to paddle a canoe, let's explore the major cause of wet paddlers: getting into a canoe. A canoe is designed to carry a load when supported totally by water. It is not a bridge. It is very vulnerable to capsizing and very unstable with one end on shore, the other end in the water and the mid-section unsupported. Put the canoe in the water parallel to the shore. Place one hand on the near gunwale and one foot in the center of the canoe. Crouch low and grab the far gunwale with the other hand as you transfer your weight to the foot in the canoe. Swing your other foot into the canoe and drop to your knees. Remain there while your partner boards, then assume your paddling position. If you must enter perpendicular to the shore, use a paddle to distribute your weight as you cross along the canoe centerline to your seat. Your partner should help stabilize the canoe. Reverse the procedure when exiting a canoe.

PADDLING A CANOE

The basic theory of paddling a canoe is to place the paddle in the water and move the canoe toward it. There are only two actions possible with a canoe paddle: you can place the paddle in the water and pull the canoe toward the paddle, or you can place the paddle in the water and push the canoe away from it. Pulling and pushing are the only options because the paddle blade has only two sides!

*Right:* This is the proper paddle position. Stroke as close to the centerline of the canoe as possible.

*Wrong:* This paddle angle will cause the canoe to turn rather than make forward movement.

Keep the paddle as near vertical as possible. Your upper hand should be at eye level. Reach out with your lower hand as far as possible, arm fully extended. Dip the blade in the water and push with your upper hand. Don't continue the stroke beyond your body, as you'll waste effort. Keep it in front of you. The idea is to create a fulcrum with your arms. Remember, move the canoe toward the paddle. Slice the blade out of the water by dropping the top hand and feather the blade during the recovery. Switching sides is okay, it rests some muscles, while helping to maintain course. You can switch sides every 5-6 strokes to keep the canoe going straight without using a steering stroke. One canoeist can call "hut" and you switch sides together.

Paddling with two people is very much a team effort. Usually the bow (front) and stern (back) canoeists paddle on opposite sides. The bow canoeist is responsible for the power strokes that keep the canoe moving. The stern canoeist adds to the power, but is also responsible for setting the direction of the canoe and fine adjustments to the canoe's balance. If both parties keep a regular stroke pace and change sides at consistent intervals, all will usually go well. However if the bow canoeist tries to take control by steering the canoe using his paddle or changing sides frequently, problems will occur and the
canoe could veer off course. To avoid these problems let the stern canoeist control the canoe direction. The bow canoeist determines the frequency of changing sides and is on the watch for underwater rocks and logs.

**BASIC CANOE STROKES**

There are eight basic strokes: the Forward or Power stroke, the Reverse or Back stroke, the Sweep stroke, the "J" stroke, the Stern Rudder stroke, the Draw stroke, the Pry stroke and the Sculling stroke. The examples shown explain how to maneuver the canoe without having to change sides for paddling:

**Forward or Power Stroke:** To paddle on the left side, place your right hand on the grip. It controls the blade angle. Your left hand holds the shaft several inches above the blade. Keep this hand out of the water. Wet hands only cause blisters. (To paddle on the right, just reverse hands).

**Reverse or Backwater Stroke:** This important stroke gives you time to decide which way to go, slow your approach to a standing wave, or for an emergency stop. Opposite to the power stroke. An important stroke for abrupt stops such as when you encounter underwater rocks or logs.
**Sweep Stroke:** This stroke is used for partial pivots and turns, and great when you are canoeing solo. The sweep is similar to the forward stroke, however the paddle (in this example at the stern) is extended further out over the water, and allows you to make turns opposite to the side of the stern canoeist.

**J' Stroke:** To keep a canoe on course, the stern canoeist must make some adjustments to his stroke. The most common way is by using the traditional 'J' stroke. Flip the paddle out at the end of a forward stroke and either push out (pry) or rudder to maintain a straight course. This movement pulls the canoe slightly to the side of the stern canoeist. Best stroke when soloing in a canoe.

**Stern Rudder:** Depending on the power stroke of the bow canoeist, canoes tend to drift opposite to the side the stern canoeist is paddling on. To adjust the direction of the canoe to maintain a straight path or harder turn, the stern canoeist braces his paddle against (or near) the side gunwale and rotates his paddle outward at an angle, creating a rudder. This movement pulls the canoe harder to the side of the stern canoeist.
**Draw Stroke:** The draw stroke is used to change the direction or rotate the canoe opposite to the side of the stern canoeist. The draw is a deep stroke. Lean out over the water as you begin your stroke, pull the paddle inward towards the canoe. Remove the paddle before you hit the canoe and do not let the paddle get swept under. While stationary, with both canoeists applying the draw stroke, the canoe rotates quickly. When paddling, the bow canoeist can use the draw and the stern canoeist apply the sweep stroke to quickly turn the canoe.

**Pry or Push-over Stroke:** Opposite to the draw stroke, the pry stroke will rotate the canoe on the same side of the stern canoeist. It is another deep stroke. Place your paddle close to the side gunwale and push straight out. While stationary, with both canoeists applying the pry stroke, the canoe rotates quickly. When paddling, the bow canoeist uses the pry and the stern canoeist applies the stern rudder to quickly turn the canoe. Like the draw stroke, this becomes a great stroke to evade underwater rocks and trees.

**Sculling or Feathering Stroke:** Keep the paddle in the water at all times and both canoeists feather on the same side. Rotate the blade in an arc or figure eight fashion as you pull the paddle towards you. This is a slow moving, quiet, but precise stroke for coming alongside an object such as another canoe, a dock or the shore.
HANDLING A CANOE

When you feel confident about canoeing you can take it out on a lake or calm stretch of river and practice paddling straight. But how do you handle a canoe on open water with wind and waves? Canoes are wonderfully seaworthy craft, but they have a design flaw: they're topless. If the waves pick because of the wind, don't panic. It is very difficult to upset an empty canoe. It is people who tip canoes over. Don't get in water beyond your capabilities. Follow these tips:

Prepare yourself - Always wear a personal flotation device. If you have a pet dog, obtain a PFD for him as well. Be aware of any abnormal weather patterns that might occur later in the day. Test out the water temperature. Tell others where you are going and when you plan to return. Avoid nighttime canoeing.

Prepare your route - An average paddler can travel 4 km/hr. Take into consideration the route and portages. Avoid as much as possible areas of open water where wind and waves become a factor. Chart out islands or accessible shoreline to rest on. Watch out for areas of motorized boats.

Prepare your canoe and possessions - Waterproof your gear in plastic bags. Tie valuables to the yoke or seat frames. Make sure your canoe can float if tipped. Carry a spare paddle and a buoyant heaving line. Bring floating seats. Bring a water bailer or pumping device. Carry necessary food and water. Wear protective clothing and head gear. Waterproof your map and know what to expect in the way of portages. Bring a sound signaling device (i.e. whistle). If planning to paddle at night store a navigation light.

Set up a chain of command - Generally the person in the stern is in charge. He is more aware of the state of the canoe, controls its direction and sets the final weight distribution in the canoe. Follow his directions and trust his signals. The person on the bow usually determines the side one paddles on.

Know your partner - Find out about the swimming and canoe skills of others in the canoe.

Carry a bailing bucket - This is helpful to bail water if the waves are high.

Know your canoe - Make sure your canoe has not leaks and can float if submerged.

Sink your canoe - Go out in the canoe and near the shore jump overboard. Practice getting back in. Sink the canoe and practice refloating it and bailing out water. Also practice navigating back to shore without bailing by sitting in the submerged canoe or holding on to the overturned canoe and kicking to shore.

Paddle a suitable canoe - Think about waves when you buy your canoe. Big wind makes big waves. Big canoes are drier in big waves.

Trim the canoe - A canoe should paddle somewhat bow-light. A bow-heavy canoe is difficult to control-more so in the wind. A well-trimmed canoe rises with waves to help you stay dry, and it responds better in confused waves.

Unite with your canoe - If you are seated, a foot brace and gunwale pads give you a solid connection. You can respond to the waves with your hips to control lean. If kneeling, use knee pads (and whitewater thigh straps) for the same secure control.

Lower your center of gravity - All in the canoe can drop to their knees and continue paddling. If you're still concerned, you can always sit on the bottom and slowly paddle to a nearby shore.

Bridge the waves - Open canoe racers use long, fast flared-bow canoes to accelerate between wave-tops. In small, compact waves, a fast canoe paddled aggressively spans
wave troughs to maintain control, boat speed, and dryness.

**Quarter the waves** - Angle the canoe into the waves so you take the brunt with the side of the bow. Lean your canoe away from a steep wave to keep the windward gunwale high. This requires confident bracing on the opposite side coupled with timing to match the wave period.

**Know the weather** - Before departing on a trip be aware of the weather conditions. High winds usually pick up in the late afternoon. Consider carrying a portable radio to get the latest weather forecasts.

**Paddling a headwind or sidewind** - To paddle into heavy winds and if paddling solo, shift your body forward to the middle of the canoe to make the canoe bow heavy. The stern, now being lighter, will be blown downwind causing steering to more easier and controllable. Keep your body center of gravity and your equipment low to make the canoe more stable in the water.

**Slow down** - In confused, sloppy waves, reduce forward speed to avoid "punching" into steep waves. It might feel as if the canoe is wallowing, but it is less likely to crash into waves and take on water. Quick back strokes by either canoeist can slow the canoe just before an exceptionally large wave to prevent the bow from burying itself in a deep trough. Time your stroke to allow the bow to rise on the oncoming wave and then settle gently into the trough. Reaccelerate to maintain boat speed.

**Turn sideways** - When you are really threatened, the driest ride is sideways to the wave. But note this is not the most secure. It is also the "rolliest," and requires that you ride the canoe with your hips. Practice this in non-threatening waves such as turning sideways to a motorboat wake. Let the canoe roll up and over as the wave passes. Keep your paddle "working" in the water, and absorb the rolling motion with your hips.

**Use natural wind breaks** - Most obvious is a lee shore or the lee of an island. Even up to two miles away, waves will be less ferocious. You might need to adjust your route. Wind waves are built by three factors: wind strength, time blowing, and distance blowing over open water (fetch). You can't affect the first two, but paddlers seek to minimize fetch.

**Deck it** - Use a spray cover. Those who like the "open" in canoeing resist decks, but they're an effective and legitimate solution if your itinerary is likely to include heavy water.

**Avoid waves** - Use good judgment. The size and steepness of waves are often not obvious from shore. Anticipating an open-water crossing, consider that waves may be greatest away from shore, where wind has had an opportunity to work.

Before going on any canoe or canoe/camp trip proper training in this activity is highly recommended. Topics should include:

- Water regulations
- Leadership skills
- Weather knowledge
- Hypothermia and first aid
- Environmental practices
- Equipment handling and packing
- Trip planning
- Water rescues and water safety
- Canoe rescues
- Paddling techniques
- Rescue techniques
- Water regulations
- Low impact camping
- Portaging skills

This material can be used to fulfill partial requirements for the [Watercraft Badge](#).