

ORGT Kayak Touring

Beginner / Intermediate School Notes

Course Description

This class will familiarize participants with sea kayaking equipment, introduce basic paddling strokes, and teach rudimentary safety practices. Completing this class and both trips will make participants eligible for the Intermediate/Coastal class. GT community members who complete the class and trips will be allowed to check out ORGT boats for inland (lake) use, pursuant to ORGT Kayak Touring Policy.

Course Format

Class Session – introduction, equipment, environment, day trip logistics

Pool Session – swim test, wet exits, rescues, re-entries

Day Trip – lake trip to practice launching/landing, paddle strokes, group dynamics, safety

Logistics Meeting – short meeting to set the stage for the overnight trip

Overnight Trip – two day trip including camping overnight at a designated site

Sea Kayaking or Kayak Touring

Sea kayaking is the common name for a sport that should more accurately be called “kayak touring”, since we often pursue this sport on inland bodies of water, as opposed to on the ocean. Sea kayaking often takes place on an open body of water, such as a lake, where wind and distance from the shore can be a factor in planning trips. It is distinguished from whitewater kayaking, which happens on rivers with a gradient. Whitewater kayakers confront strong currents and rapids; they learn to maneuver their boats with precision, making use of the water’s movement. Sea kayakers deal with open water crossings, shorelines, tidal currents and wind; they learn to keep their boat on a steady course, to navigate, and to cope with wind and waves.

Another difference between the sports is that sea kayakers are equipped with touring boats. We have “luggage compartments”! This gives us the freedom to be self-sufficient (like backpackers) on multi-day wilderness trips. For this reason, among others, the sport of sea kayaking places more emphasis on enjoying nature’s beauty, and coping with the challenges of living in the wilderness.

All kayaks have their roots in the boats designed by the coastal polar people of centuries past. The Aleuts, the Eskimos, and the Greenlanders had been perfecting boat design for hundreds of years before they were “discovered” by Europeans. They were extremely skilled paddlers, and their kayaks were used for hunting and transportation. They often traveled hundreds of miles by kayak in search of food. Since they lived above the tree line, their boats were built from bone, driftwood, and skin. They had sophisticated methods of waterproofing and insulating both boat and paddler. Today’s technology uses different materials, but the concepts are quite similar. Since these people depended on the sea for their survival, the sport of sea kayaking seems to have a close connection with the rich history of the kayak.

Parts of the Boat

Bow

Stern

Cockpit

Cockpit combing

Bulkhead

Hatch

Hatch cover

Foot pegs

Rudder

Skeg

Toggle or grab loop

Perimeter (deck) lines

Deck bungee

Keel

Boat Design

Boat design can be a complex subject, and you will find many opinions among aficionados. You need not understand much about boat design to be able to paddle. Here are some basic concepts. The key is that each feature has advantages and disadvantages, and that every boat represents a compromise. More stability often means less maneuverability. Better handling in waves can make for a “squirrely” boat in quiet water. A boat that does well when loaded may not handle as well when empty.

- **Length:** Sea kayaks are longer than whitewater kayaks, and have more of a keel (the ridge along the bottom of the hull). This allows them to track: most of your paddling energy goes to move the boat in a straight line. As a result, these boats are harder to turn. Given equal width and water displacement, a longer boat is a faster (more efficient) boat.
- **Waterline:** The length of the boat where it touches the water. Other things being equal, a longer waterline makes for a faster boat, while a shorter waterline makes for easier turning. A loaded boat may have a longer waterline than an empty boat, since it sits lower in the water. This would change its handling characteristics.
- **Hull shape:** A rounded bottom allows the boat (and paddler) to move with the waves. It generally has less **primary stability**, but more **secondary stability**. A flat bottom is more stable on flat water. Once the boat is flipped, however, it is also stable upside down; thus it is harder to right. A flat bottom boat generally has more primary stability, but less secondary stability.
- **Flare:** When you look at the bow of a boat, a “V” shape is created from the waterline upward. This is called flare, and is more pronounced in some boats. The narrow bottom can slice through waves. The wide top creates buoyancy, allowing the boat to ride over the tops of the waves. A combination of these features is desirable.
- **Rocker:** When you look at the keel line of a boat, you’ll see that the boat curves upward at the bow and stern. This curvature is called rocker. Boats with more rocker will be easier to turn, since the waterline will be shorter. Generally, whitewater boats have more rocker than touring boats.
- **Upswept bow** (or stern): Related to rocker, this characteristic also reduces the waterline, and allows the bow of the boat to rise over the waves. The disadvantage is that it creates *windage* (the boat will be more effected by the wind).

Boat fit

You should be able to sit comfortably in the cockpit of your boat, with a little bit of back support from the band or backrest provided. Your hips should be in contact with the sides of the seat. Your feet should touch the foot pegs with your ankles partially flexed. Your knees should be bent, and you should be able to bring them in contact with the boat by pressing on the foot/rudder pegs with the balls of your feet. When you relax, your knees may fall away from the boat and be “free” within the cockpit. You should be able to maintain erect posture (slouching will interfere with your paddling technique).

When you paddle, you should connect with your boat at the feet, knees and hips, thus allowing you to transfer the energy from your paddle to move the boat while also controlling the lean of the boat.

Boats and Buoyancy

All sea kayaks need to have one important feature – buoyancy. You need to be assured that the boat you are paddling will not sink, even when you dump it over and fill the cockpit with water. We accomplish this in one of two ways:

- **Bulkheads and hatches:** If your boat has sealed hatches fore and aft, then these will keep water out when you flip. The air trapped within the hatches will provide the floatation. Needless to say, this is true only if the hatch covers are on correctly!

- **Floatation:** Some boats are designed without bulkheads. This means that you must fill the bow and stern with some sort of material to displace water in the event of a capsize. If you are on an overnight trip, your waterproofed equipment may fill up the entire cavity of the bow/stern, thus displacing enough water to keep the boat from sinking. You should test this! Beware – equipment tends to escape from a capsized boat and float away! A more reliable method of displacing water is with a float bag, which is an inflatable bladder you insert and secure in your boat.

Environment

Wind:

- ◆ Wind generally increases later in the day.
- ◆ A 22 knot wind causes a drift speed of about 3 knots for a paddler.
- ◆ Many experienced paddlers can barely make forward progress in a 20K headwind
- ◆ Most beginner paddlers will be uncomfortable in a 10K headwind.
- ◆ Wind causes a boat in motion to weathercock. Paddlers must compensate for this.
- ◆ The protected side of a landmass is called the leeward side.
- ◆ When standing on a lee shore, the apparent wind will be minimal. Conditions offshore may be dramatically different!

Waves:

- ◆ Waves travel across the water. The water itself doesn't travel (exception: standing waves on rivers).
- ◆ Main hazards to small boaters from waves occur when they interact with land (IE breakers)
- ◆ Waves reflect off cliffs and headlands, causing chaotic conditions.
- ◆ Waves are created by wind. Variables are velocity, duration, and distance. Strong wind traveling across a large body of water for a longer period of time will create the biggest waves. It follows that the bigger the lake, the greater distance of unprotected water, the greater the potential for big waves.
- ◆ Most paddlers are more comfortable paddling into the oncoming waves, since you can paddle over or through them. Unfortunately, this may not be the direction you need to go!
- ◆ When a wave approaches from the side, tilt your boat slightly toward the wave, and place your paddle in the wave for more stability.
- ◆ Power boat wakes create waves. If you have time, you can turn your boat to face the wave. Otherwise, relax your hips and let the boat rock loosely from side to side while maintaining your center of gravity with your torso stationary.

Other Boats:

- ◆ Power boats may be the biggest hazard on a lake or intercoastal waterway. They travel fast, drivers may be inexperienced, and they may not be paying attention (or able to see you even if they are paying attention).
- ◆ You have the right-of way, but don't rely on others to respect it!
- ◆ Stay close to your group for visibility, and keep your group to one side of the channel. Paddle in group formations that reduce the likelihood a power boats will choose to pass between two kayaks.

Lightning:

- ◆ Serious hazard. Thirty seconds between flash and thunder means the lightning is about five miles from you (sound travels one mile in about five seconds). This is within striking distance.
- ◆ Keep your group together, for communication purposes. Use whistles if necessary.
- ◆ Get off water and away from beach. Safest place is in the center of a uniform stand of trees.
- ◆ Once on land, group should spread out (but maintain visual contact, and crouch on your life vests)

Clothing

Boaters should always take proper clothing along to deal with changing weather conditions. Wetting from rain or waves can combine with wind to create an unexpectedly chilly experience on the water. Over the course of several hours this can drain a paddler's energy and even lead to hypothermia on an otherwise warm day. Immersion in cold water after a wet exit should also be considered when choosing clothing and supplies for a trip.

- **Hats:** A wide brimmed hat will keep the sun off of your face, ears, and neck (though you should still use sunscreen on sunny days to protect against rays reflected off the surface of the water). The same type of hat will usually provide adequate shielding against rain as well, or warmth in cold windy conditions. A reliable strap may be needed to help keep it on during periods of high wind.
- **Shirts:** A quick drying shirt made of polyester or nylon can be useful in protecting your arms and shoulders from the sun (reducing the need for large amounts of sunscreen), provides some warmth against wind in cool conditions, and offers some protection from mosquitoes and other biting flies on shore as well. Cotton should generally be avoided on all but the hottest of days.
- **Insulating layer:** This could be a synthetic or pile top or pants. The purpose is to add thickness (insulation). Cotton does **not** work, as it loses all insulating value when it gets wet. The insulating layer is effective for cold, but not for wind. For this reason it is often combined with splash tops or paddling pants.
- **Splash tops, paddling pants:** Made of waterproof material and protect from rain, spray, and wind, but are not completely water tight at the sleeves and neck.
- **Wet suits:** Made of neoprene rubber and offer additional protection against cold water immersion by trapping a thin layer of water against the skin, which is then heated by the body to provide a layer of insulation. Wet suits should fit snugly in order to function properly.
- **Dry tops:** Similar to spray tops, but add gaskets at the wrists and neck to improve protection from the water. These can make for a much more comfortable day in cold and/or rainy conditions (as long as you stay in your boat).
- **Dry suits:** Similar to dry tops, but include coverage for your legs as well, with gaskets at the ankles to keep water out. In contrast to wet suits, dry suits insulate by keeping water out completely, and paddlers generally wear a layer of insulating underwear or fleece of varying thickness underneath, depending on the temperatures expected.

Packing

Waterproofing:

Sea kayak gear compartments are usually dry if you shut the hatch covers correctly. This is important, because they also provide your floatation. Nonetheless, gear should be waterproofed. Use a **3 layer system** for things you really want dry (like your sleeping bag):

- 1) Durable plastic bag (Trash compactor bags and ziplock freezer bags are great)
- 2) Dry bag (ORGT can lend these)
- 3) Hatch cover

Positioning Gear within the boat:

- ◆ Pack in small stuff sacs and dry bags so items can be loaded in flexible configurations.
- ◆ Long narrow things (tents poles, etc.) can make use of narrow hatch spaces in bow or stern.
- ◆ Minimize the need to strap non-essential gear on deck, as it increases wind resistance.
- ◆ Pack heavier things (esp. water) near cockpit to keep greatest weight near the center of the boat.
- ◆ Pack heavier items along the bottom of compartments and lighter items nearer the top.

- ◆ Boat should be trim side to side, fore and aft. If the boat cannot be trimmed precisely fore and aft, most paddlers do better with a slightly stern heavy trim.

Loading Boats

When loading boats onto a vehicle, you want to prevent movement from side to side, as well as fore and aft. The tightest lines will be the *girth lines*, which secure your boat by wrapping around it's middle. There should be 2 girth lines per boat. A *trucker's hitch* is recommended to tighten the girth lines.

Lines should be tight enough to prevent independent movement of the boat (if you try to move the boat, your whole vehicle should move) BUT, *lines should not be so tight as to noticeably deform the boat*. Be especially careful with fiberglass boats, which can crack when too much pressure is applied!

Bow and stern lines are important in case of an accident, to prevent the boat from becoming a missile! These should be tied to your bumpers. Since they are not the primary tie-downs, they need not be very tight. If they are too tight, they can cause major damage to the boat. Most boaters use a *taut-line hitch* here, since it is adjustable after it's tied. Fiberglass boats must be placed on padding or suspended from straps. Ropes should be re-checked for tightness after a couple hours of driving, or after rain.