Basic Overview of Kayaks & Kayaking

The word "kayak" translates to "man's boat" or "hunter's boat". Originally developed by the eskimos, kayaks were used to hunt on lakes, the Arctic Ocean, North Atlantic, the Bering Sea and North Pacific oceans. Designed to be manually propelled with a double bladed paddle, the original kayak is a small, relatively narrow, human powered boat constructed from seal or other animal skins stretched over a wood or whalebone frame. Traditional kayaks have covered decks with one or two cockpits for the paddlers. A skirt seals the paddlers into the kayak by keeping water and spray from getting into the boat.

Modern kayaks greatly differ in concept, design and usage, ranging from easy touring, to racing in fast moving white water, to fishing and long distance ocean excursions. They may include rudders, fins, bulkheads, seats, foot braces and cargo hatches. Modern molds or forms and construction techniques are currently employed to manufacture these versatile boats out of materials such as wood/canvas, carbon fiber, fiberglass, Kevlar, polyethylene, polyester, rubberized fabric, neoprene, PVC, polyurethane carbon fiber and aluminum.

Selecting the Right Kayak

Choosing a Kayak can be a little confusing for newcomers to the sport. What types are there? What are the advantages and disadvantages between models? Is one “safer” over another? This quick overview may help. Kayak design is largely a matter of competing trade-offs: Directional stability ("tracking") versus manoeuvrability, and stability versus speed.

Kayak Length
As a general rule, a longer kayak is faster. Kayaks that are built to cover greater distances, such as touring and sea kayaks, are longer, generally 16 to 19 feet (4.9 to 5.8 m). With touring kayaks, the keel is generally more defined (helping the kayaker track in a straight line. White water kayaks, which generally depend upon river current for their forward motion, are shorter to maximize manoeuvrability and rarely exceed 8 feet (2.4 m) in length. Recreational kayak designers try to strike a balance between tracking and manoeuvrability with crafts that range in length from 9–14 feet (2.7–4.3 m).

Kayak Primary & Secondary Stability
Primary stability (sometimes called “initial stability”) describes how much a boat tips or rocks back and forth when displaced from level by water movement or paddler weight shifts. Secondary stability (or “final stability”) describes how readily a boat capsizes. Primary stability is often a big concern to a beginner, while secondary stability matters more to experienced travelers who may frequent rougher waters. Primary stability increases as the boat's volume moves away from the center line.

Kayak Beam Profile
A V-shaped hull tends to ease traveling straight (track), but makes turning harder. V-shaped hulls also have the greatest secondary stability. Conversely, flat-bottomed hulls are easy to turn, but harder to direct in a constant direction. They have the greatest primary stability, and the least secondary stability. Sea kayaks, designed for open water and rough conditions, are generally narrower, 22–25 inches (56–63 cm), and have more secondary stability than recreational kayaks, which are wider, 26–30 inches (66–76 cm), have a flatter hull shape, and more primary stability.

Kayak Paddling Ease
Some recreational kayak makers try to maximize hull volume (weight capacity) for a given length as shorter kayaks are easier to transport and store. Many paddlers who use a sit-in kayak feel more secure in a kayak with a weight capacity substantially more than their own weight. Maximum volume in a sit-in kayak is helped by a wide hull with high walls. But paddling ease is helped by lower walls where the paddler sits and a narrower width. A narrower kayak makes a somewhat shorter paddle appropriate and a shorter paddle puts less strain on the shoulder joints. Some paddlers are comfortable with a sit-in kayak so narrow that their legs extend fairly straight out. Others want sufficient width to permit crossing their legs inside the kayak.
Source: Wikipedia.org

Transport Canada - Safe Boating Guide

Safety Tips and Requirements for Pleasure Craft

https://www.tc.gc.ca/en/services/marine/documents/TP-511e.pdf

Transport Canada - Sea Kayaking Safety Guide

https://www.tc.gc.ca/publications/en/tp14726/pdf/hr/tp14726e.pdf