

Boat Types and Uses

KNOW YOUR BOAT!

Hull Types

One thing every boat has in common is a hull. A "hull", or bottom of a boat, comes in several different forms. Each form has a unique shape that give it certain handling and performance characteristics. Your boat has the hull form that it has to best match the type of boating it was designed for. In general, hull forms fall into one of the two following categories:

Planing Hulls - Planing hulls are designed to ride on top of the water, regardless of the weight of the boat. The flatter the bottom, the easier it is to get on plane. Also, less power is needed to attain high speeds with a flatter hull. The trade off is in handling. Flat hulls do not do well in rough water. Many planing boats use a shallow "V" shape to ride better in rough waters. This [Fountain 42RC](#) shows several design elements commonly found in modern boats-- a V-bottom for better handling in rough water that uses a "stepped" hull to give additional lift.

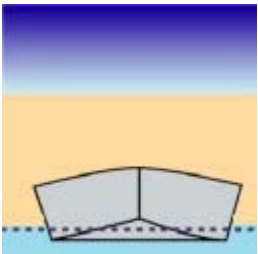
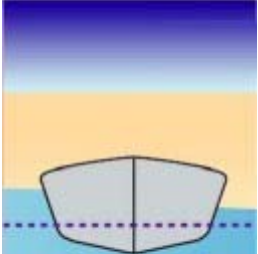
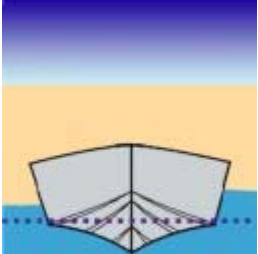
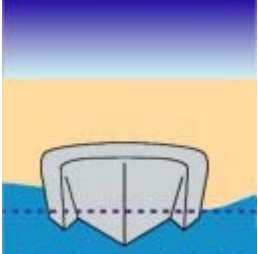
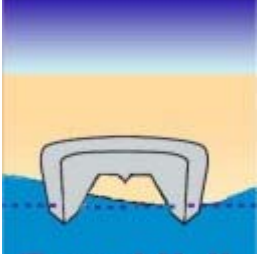


Displacement Hulls - Displacement hulls typically have a rounded bottom with a tear drop shape running bow to stern. Displacement hulls "displace" or move, an amount of water equal to the weight of the boat. Displacement hulls are very efficient-- most long range cruising boats such as trawlers and many sailboats use this type of hull. But because of their design, displacement hulls are restricted in their speed to the square root of their waterline length times 1.34. Therefore, a 64 foot boat can realistically only expect a top end speed of a little over 10 knots. The [Cape Horn 65](#) pictured below shows several design elements typically found in displacement hulled vessels such as a rounded hull form and a bulbous bow.



The following hull types are variations of planing and displacement hulls.



 <p>Flat Bottom</p>	<p>Flat Bottom - Flat bottom boats are typically small open boats such as john-boats. Flat bottomed boats can easily get "on plane" or ride on top of the water at high speeds. Flat bottom boats are typically intended for use on calm waters such as ponds, small lakes, and slow rivers because they do not handle well in choppy or rough water, especially at planing speeds. Flat bottomed boats are not very stable, caution should be used when moving around them.</p>
 <p>Round Bottom</p>	<p>Round Bottom - Round bottom boats almost "glide" through the water. Because round bottomed boats are very efficient at moving through water, most cruising sail and power boats have rounded hulls. Typically, round hulled boats move at slow speeds. Most boats with this hull type will have a keel, chines, or stabilizers, as the round form tends to roll with the waves--and tends to make everyone sea sick during rough weather.</p>
 <p>Deep -V-Hull</p>	<p>Deep-V hull - "V-hulls" are designed to operate at high speeds and to "cut" through rough water, which provides a smoother ride than flat-bottomed or round hull boats. V-hulls are not as efficient as flat or round bottomed boats, and need larger engines to move at similar speeds. The vast majority of the boats sold today have a variety of the v-hull.</p>
 <p>Cathedral Hull</p>	<p>Cathedral hull - Cathedral or multi-hulls, are two or more hulls attached closely together. This combination of hulls allows for much more stability than what is found in other hull forms.</p> <p>The air pocket that is formed between the hulls may also provide lift, helping the boat get on plane more easily and increasing efficiency.</p>
 <p>Tunnel Hull</p>	<p>Tunnel Hulls - When you see a catamaran, you are looking at a tunnel hull. Hulls are essentially two deep-v hulls joined by a platform/cockpit area. Tunnel hulls are gaining in popularity, as they offer many of the benefits of other hull designs, such as stability, speed, and roominess with few of the drawbacks. Can operate in virtually any seas, and tends to ride better than mono-hull boats.</p>

