

Thin Water Cruising Boats

Blue water tends to be deep water and that is what lies between the land masses we live on and the islands or continents we want to visit. But, at home and in the new landfalls that make the cruising life so wonderful, the water often gets very thin. So the compromise all cruisers have to face is whether to sail with a deep draft and avoid thin water cruising or sail with a shallow draft and live with the slightly poorer windward sailing ability of shoal draft designs.

Many of America's best cruising grounds have fairly thin water running through them. In the Northeast, the popular sailing regions around Cape Cod, Nantucket and Martha's

Vineyard are all shallow and riddled with sand banks. Many of the boats designed for the region, and Long Island Sound as well, have always been centerboarders, whether they were drawn by Herreshoff, Ted Hood or Olin Stephens.

And shallow cruising waters extend right down the U.S. East Coast through Delaware and

Chesapeake Bays, through the Albemarle and Pamlico Sounds and all the length of the Intracoastal Waterway right to the Florida Keys.

The Gulf Coast from Key West all the way to Corpus Christi, Texas, is sandy and shallow with narrow harbor entrances and extensive sandy shoals. Once you get to the West Coast, deep water runs right up to the coast in most areas. But head deep into San Francisco Bay or up the Sacramento River delta and the water thins out rapidly.

Once we leave North America it doesn't necessarily get any deeper. The Bahamas are notoriously shallow, and if you want to get off the beaten track amongst the islands you need a true shoal draft cruiser. The water throughout the Caribbean

is generally deep but there are lots of great anchorages around islands like Anguilla, Anegada and Barbuda where a shallow draft boat will get you close to the beach and out of the wind or swell.

In Europe, most of the coastal waters are deep with the exception of Holland and Germany. In the Med, you will find mostly deep water but again there are hundreds of great anchorages throughout the sea where less draft will really be to your benefit. And, if you want to use the European canal systems to cruise from the North Sea to the Med, shallow draft is a must.

VARIATIONS ON THE THEME

Designing a boat that combines shoal draft with reasonable or even



Photo courtesy Bill Kund



Island Packet Estero



Catalina 375

good sailing performance is one of the challenges that yacht designers have been wrestling with for hundreds of years.

There are seven basic solutions to the shoal draft compromise and of these each offers different sailing characteristics. Multihulls are all shoal draft cruisers; some have small keels and some have daggerboards. But all of them draw less than five feet.

Bilge keelers are all shoal-draft boats with less than five feet of draft. But, none are available from builders in the United States, and the design style, once very popular in England and tidal regions of France, Holland and the North Sea have gone somewhat out of favor. That leaves us with five modern styles to consider.

FULL SHOAL-DRAFT KEELS

The classic shoal draft keel design was the full-length keel with a cutaway forefoot and an attached rudder. The long keel was easy to build in a wood plank-and-frame method, was strong, could withstand a grounding safely and could be dried out on its own bottom for painting or repairs. Although not the best for close winded sailing, the full keel design excels at reaching and running by offering an easy motion and good directional stability.

Today, Island Packet and Pacific Seacraft lead the fleet of full keel

boat builders with very successful and capable ranges of boats.

Island Packets are designed by founder Bob Johnson who spent 30 years perfecting what is now called the Full Foil Keel design. The full-length keel distributes the internal ballast in a full-length, foil-shaped keel that adds stability, directional stability, and improves the keel's lift when sailing to windward. It is worth noting that all of Island Packet's current models have less than five feet of draft, including the new 460, which is 46 feet overall. If there is one builder in North America who has fully embraced the virtues of shoal draft sailing it is Island Packet.

Pacific Seacraft designs have wine-glass sections that lower the boat's center of gravity and make them stiff and weatherly. The 31, 34 and 37 all draw less than five feet. The full keel designs are traditional by modern standards yet have proven to be forgiving and capable at sea. Because the hull and keel are all one piece, Pacific Seacraft hulls have enormous integral strength so if the hull lands hard on an immovable object, like a rock ledge or coral reef, the keel will distribute the loads throughout the hull. World cruisers have long believed that shoal draft full keel designs like the Pacific Seacrafts and Island Packets are most suitable for any and all conditions.

FIXED WING KEELS

Modern shoal draft fin keels began to evolve in the 1980s, particularly after Australia won the America's Cup in 1983 with a revolutionary wing-keel design. Most if not all production builders of cruising boats offer shoal draft versions of their models with modern cruising fins with either wings or bulbs.

The principle is to gain the most lift possible with a NACA foil shaped keel that has as much weight concentrated in the wings or bulb as possible to lower the center of gravity. The wings or bulbs also provide an end-plate effect, which channels water flow evenly across the keel instead of allowing it to fall off at the bottom as it does on a standard fin keel.

In the early days of wing keels, builders worried that the wings might act as suction cups when the boats were run hard aground on mud banks. A lot of grounding tests were run with these early designs with positive results.

Catalina has made a significant commitment to shoal-draft, fin-keel designs and has five models over 35 feet that draw less than five feet. The keels that designer Gerry Douglas works with have swept back shapes with elliptical trailing edges and large aft fins. This shape provides a large amount of foil surface for lift and a low center of gravity. Catalina



uses all-lead keels, so the density of the material enhances the designs' innate stability.

Both Beneteau and Hunter have cruising designs between 33 and 37 feet that have drafts less than five feet. Beneteau uses a bulb designed with an aft swept foil keel. The bulb trails aft of the keel where it won't collect seaweed or crab pot lines and where it will place the bulk of the casting's weight directly below the boat's center of gravity. The shoal-draft version of the new Beneteau 37 draws only four feet, seven inches but is still able to fly plenty of sail and has been noted as a fast, close winded cruiser.

Hunter has developed its own brand of wing keel design for their shoal draft models that combines the efficiencies of NACA foils with the low center of gravity and end-plate effect of a wing keel. The Hunter 36 draws four feet, 11 inches while the smaller Hunter 33 draws only four feet, six inches. The Hunters come standard with roller furling mainsails and jibs, which are easy on the crew. The keel shapes and the depth of the centers of gravity both aid the boats upwind and provide an easy stable ride.

Sabre Yachts in Maine offers wing keels as an option to the deep performance keels they provide as standard equipment. The Sabre 386 has a shoal draft of only four feet, 10 inches. Designed by Jim Taylor, the shoal keels are advanced cruising fins with hydrodynamic wings that add stability and lift. Sabre builds classic high quality cruiser-racers that have proven to be both winners on the race course and excellent cruising boats. With the shoal draft option, the 386 can take her crew anywhere.

ComPac Yachts in Florida has been building shoal draft small cruisers for years. Not long ago the build-

ers introduced the new ComPac 35, which was designed as a couple's cruiser with a shoal draft Scheel keel that is both offshore ready but capable of cruising thin water, too. The Scheel keel has a swept back bulb that lowers the center of gravity and creates minimum drag as water flows over the foil. Built on the west coast of Florida where cruising depths are often under five feet, the ComPac 35 is right in its element.

Hanse from Germany has two boats in their cruising line that draw under five feet, the 320 and 350, and true to the company's mission the keel design and configuration are tilted toward modern shapes and performance characteristics. The shoal keels are modified cruising fins with fairly deep chords and aft sweeping ballast bulbs. This design allows Hanse to enhance ballast-to-displacement ratios and performance upwind.

The fixed shoal keel solution to the designer's problem of draft version performance is the simplest and least expensive to build. And, in the long run should require the least maintenance.

KEEL-CENTERBOARD DESIGNS

When you think of classic New England builders, most of us think of names like Hinckley, Morris, Sabre, Tartan (actually Midwest), Bristol and Little Harbor. Because these builders and the designers behind them were creating boats for sailors who cruised and raced in New England in the summer and then headed south to Florida, the Bahamas, Bermuda and Caribbean in the winter, the boats had to have shallow drafts but they also had to perform well upwind and they had to be offshore capable.

Certainly over the years there have been issues with centerboards. They can bang annoyingly as the boat

rolls. They can be lodged either up or down. And, they can actually fall out of the boat if a pin fails. But, these days, the problems once associated with centerboards have largely been subdued with innovative technology.

The only production builder offering modern keel-centerboard designs in 2009 is Tartan Yachts, which has three models, the 3400, 3700 and 4100, all of which draw less than five feet with their boards up. Tim Jackett designs the Tartans and has created a line of cruisers that carries on the classic Tartan traditions of quality, performance and comfort.

There are other keel-centerboard designs out there that can be had on a custom or semi-custom basis from builders like Shannon Yachts in Rhode Island.

SWING KEELS

The option to add ballast to the centerboard gives a designer and builder the chance to create a truly shoal draft boat that will also sail up-wind with the alacrity of a modern fin keeler.

In essence the swing keel is a cast foil keel that hinges inside the hull. When retracted the trailing edge of the keel fits into a slot in the bottom of the hull and the leading edge is parallel with the bottom of the boat. In the retracted position, and with the rudder(s) kicked up, a design of this type will sit nicely when dried out.

With the keel down, the foil is in place to provide lift as you sail to windward and the ballast in the keel is low where it adds stability.

The only production builder who offers cruising boats over 35 feet with swing keels is Southerly in England. The southerly line ranges from 35 to 57 feet and with the keels retracted all of the boats draw less than three feet—even the new Southerly 57RS (raised saloon).

Southerly has been building swing keel boats for 20 years and has perfected the science of deploying and swinging heavy moveable ballast that is also a sailing foil.

RETRACTING KEELS

Retracting keels have become popular on mega yachts that need the depth of a deep keel for performance but need shallow drafts to enter normal ports. And, we have seen occasional custom cruisers equipped with retracting keels, since the principal is so attractive.

A retracting keel does just as you would imagine, it retracts into the boat when you want to sail in shoal-draft mode and is then lowered when you want the lift and stability of a full fin keel in deep water.

Because the keel is a ballast keel, the unit is heavy and requires a mechanism to raise and lower it in a controlled way. Muscle power can work on boats of up to 40 feet or so, but above that a powered winch is required, all of which adds complexity to the boat.

The only production builder in North America to offer a cruising boat with a retracting keel is Hake Yachts in Florida. The Hake 32 RK is a compact but capable cruising boat that can sail or power in as little as 20 inches of water but, with the keel lowered will draw a healthy six feet, six inches.

The 32RK was



Southerly 38



Tartan 4100

designed specifically for Southern Florida and Bahamian waters and has proven to be an excellent cruising solution that will work just about anywhere the water is thin.

Thin water cruising can be the most fun way to explore new islands and cruising grounds. So, if you have plans to venture over the horizon be sure to check the depths in the places you want to visit before you decide on the right boat to sail there.



Hake 32RK