

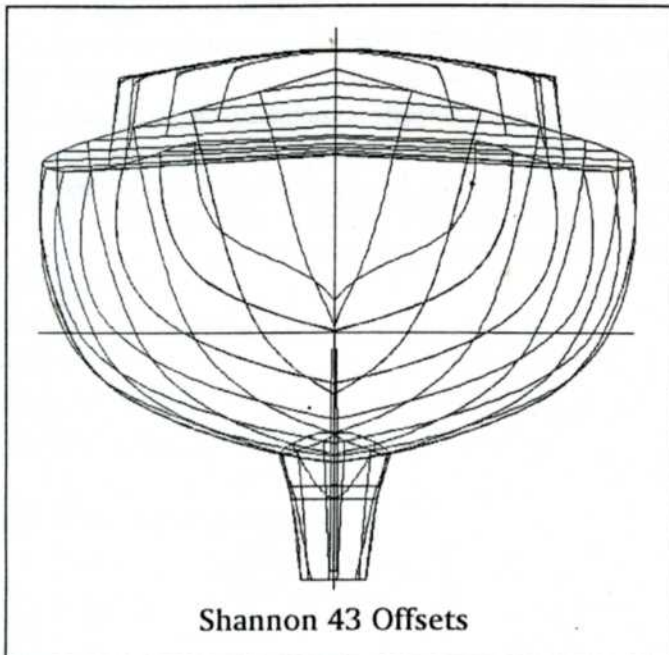
Shannon 43/46



Shannon 43 Design Concept

The Shannon 43 is a design development by Walt Schulz that is intended to be the perfect boat for a couple to sail and live aboard anywhere in the world, while maintaining a comfortable lifestyle. The 43 is manageable underway by one person, but can provide accommodations for as many as eight. Over the last 12 years, forty-six Shannon 43's have been built and are sailing the world. The Shannon 43 combines excellent offshore sailing characteristics with good speed even in light air on all points of sail, and exceptional seaworthiness. The 43's cockpit is the best among mid-size cruisers, with ample room in the cockpit including 6' 6" long seats to provide both a place to lie down and good access to deep sail lockers on both the port and starboard sides of the cockpit. Excellent forward visibility makes the 43 a pleasure to sail or dock.

The following description of the Shannon 43 will highlight the design, engineering, and construction details that set Shannon apart. Specific construction features and equipment selections are presented to demonstrate Shannon's commitment to serious voyaging boats using only top quality materials and equipment. We believe that careful consideration of the information will show that the closer the scrutiny, the better a Shannon looks.



Hull Design

The intent of the hull design of the Shannon 43 was to create a boat that would perform well in the wide range of wind and sea conditions experienced by the offshore cruising sailor. Any boat, regardless of size, represents a series of compromises, and each sailor must balance these trade-offs when selecting a boat. For instance, it is not difficult to design a sailboat that will just go fast in light winds. The designer draws a boat with very light displacement and a bolton fin keel. In order to be light, the boat must be built to minimal construction standards, and the water and fuel capacity, stowage, and machinery restricted to save weight. To complicate things further, a boat that is one knot faster at 5 knots of wind is not necessarily one knot faster in 15 knots of wind. Conversely, a very heavy boat can provide lavish accommodations and tankage, but it will pay a large penalty in light to moderate winds.

The design goal for the Shannon 43 was to create a medium-displacement boat that would accommodate the strongest construction standards in the industry, provide the necessary water and fuel capacities, and create an environment in which people could sail safely, comfortably and quickly no matter how long or short the passage. The 43 has a length/displacement ratio of 248, and sail area/displacement ratio of 18.6. The consensus of yacht designers is that boats with these mid-range figures are the best suited for long distance passage-making. The safest ocean voyage is always the swiftest, as long as the boat provides security and comfort even in extreme conditions.

The Shannon 43's hull design has been proven over the last 10 years on many ocean voyages, such as an 18 day 3,000 nautical mile transatlantic crossing in 1994 from Newport, RI to Ireland, a 47 hour 400 mile trip to Annapolis from RI, and an impressive 2nd overall and 1st in class finish in the 1991 Marion, MA to Bermuda Cruising Yacht Race. However, like all Shannons, the 43 hull was not designed to win around the buoy races, and no compromises were made for handicap rules or ratings. Shannons set records because they are fast, boat for boat, and because the people sailing them have the big advantage of being on a boat that will not tire them out during the passage.

Seaworthiness

An important objective of the Shannon 43 design is the seakeeping ability of the boat. When a yacht design discounts the element of human fatigue, the crew is forced to fight the boat, rather than sail it, which can produce an exhausting situation. If the motion of the boat is too "quick" or too "tender", those aboard may become tired, even on a short daysail. Besides being uncomfortable, fatigue can cause a dangerous situation where an incorrect decision can turn into a major disaster. The Shannon 43 hull design has soft sections forward to avoid pounding, one of the most punishing motions on a sailboat. The keel is long enough to alleviate constant attention to the helm and battery-draining autopilot adjustment. As a consequence of this keel configuration, the boat balances easily under a wide range of sea conditions and sail combinations. The aft sections of the hull design are full enough to create the buoyancy to compensate for changing weight in the cockpit and to prevent "seesawing".

Keel

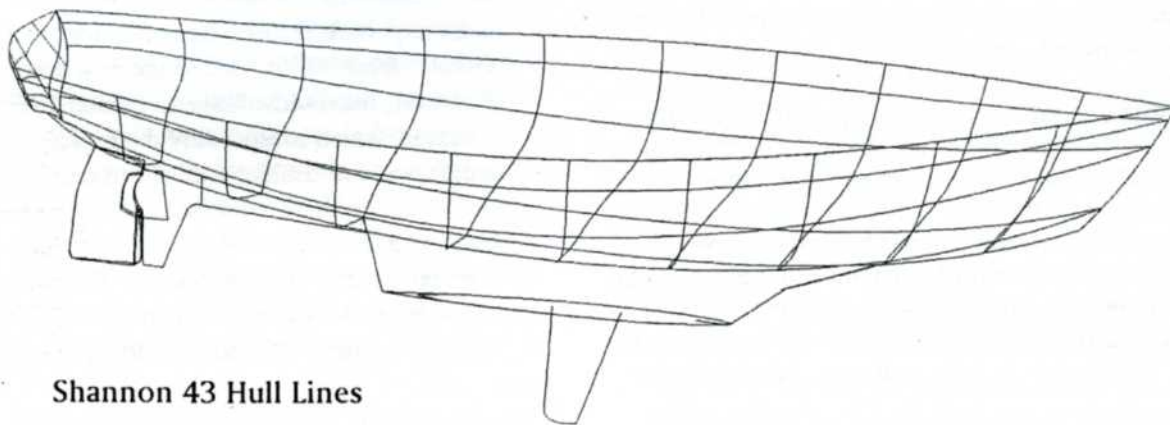
Another important design feature of the 43 is the keel design and installation. All Shannon keels are internal (the lead ballast keel is placed inside the molded fiberglass hull) versus external keels where the ballast is bolted to the bottom of the fiberglass hull. For the Shannon 43, the lead ballast is cast in four molds that reflect the interior of the hull/keel cavity. These pieces, totaling 10,000 pounds for a ballast/displacement ratio of 38%, are installed in the keel cavity and then encapsulated by laminating the entire top of the cavity to create a second bottom.

The result is definitely worth the additional effort and expense, as has been proven by serious Shannon groundings on rocks, coral and breakwaters over the past 20 years.

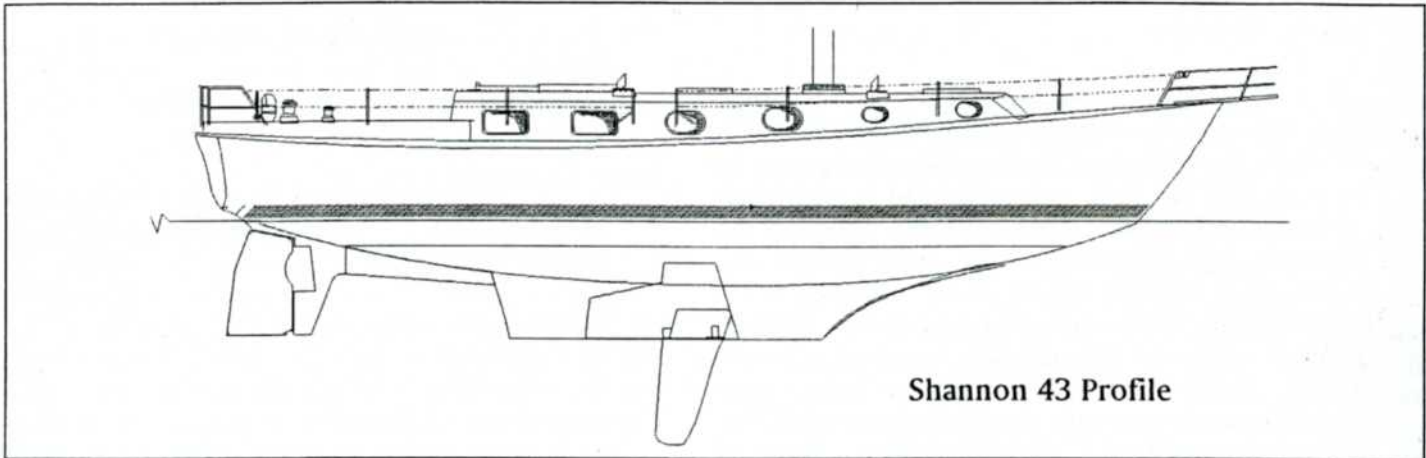
The use of bolt-on keels for fiberglass sailboats is rationalized by asserting that since the lead keel "absorbs" the impact of grounding, no fiberglass repairs will be needed. While this assertion is partially true, it fails to acknowledge the fact that when the lead is "absorbing" the impact, the shock will also be stressing the keel bolts. When an external keel grounds, tremendous shock loads occur that not only endanger the keel bolts but may also compromise the structural integrity of the fiberglass hull laminate. Another problem with bolt-on keels is that there is often no practical way to inspect the keel bolts to determine their condition after a grounding or to examine for crevice corrosion that weakens stainless steel keel bolts on older boats.

Rudder and Propeller Aperture

The Shannon 43 hull design features the rudder mounted on a substantial skeg where it is protected and securely attached. The propeller is also protected within an aperture in this skeg. While some drag is created by a propeller aperture, protecting the propeller from floating debris, lobster/crab pots, lines dropped into the water, and boatyard haul-out damage far outweighs the minimal effect of the added drag. This is a good example of the Shannon design focus on building boats for cruising, instead of trying to conform the design to racing boat rating rules. In addition, placing the propeller right ahead of the rudder gives the Shannon 43 impressive maneuvering ability when docking and powering.



Shannon 43 Hull Lines



Fixed Keel or Keel / Centerboard

The Shannon 43 is available in either a fixed keel or keel/centerboard hull. Like everything concerning sailboats there are advantages and disadvantages to both designs. The positive and negative aspects of a fixed keel are straightforward. A sailboat with 36' 9" feet of waterline length, like the Shannon 43, must carry a minimum of six feet of fixed draft in order to have decent performance, especially on the wind. Obviously a draft over 6 feet precludes some beautiful cruising grounds, such as parts of the Bahamas, Chesapeake Bay, and the west coast of Florida. In light air a fixed keel presents drag due to increased wetted surface. A fixed draft keel does not provide any hydrodynamic efficiencies when sailing off the wind. The chief advantage of a fixed keel is that it is simple, strong, and has no moving parts.

An analysis of the keel/centerboard configuration available on the Shannon 43 is more complex. The centerboard itself is fiberglass with an internal stainless steel skeleton. It is raised and lowered by a wire cable to a manual winch located within easy reach of the helm.

Since 1981 when the first keel/centerboard Shannon 50 was launched, approximately 90% of all new Shannons have had a keel centerboard configuration. That statistic is worth considering as the majority of Shannon owners have owned at least three sailboats prior to purchasing a Shannon. In the Shannon experience of many thousands of miles of hard use, including groundings with the centerboard both up and down, there have been no board failures that have compromised structural integrity. In addition to reducing the draft to 4' 9" (board up) the centerboard configuration allows for greater adjustment in the balance of the helm

by changing the center of lateral resistance of the hull. This can be especially helpful when sailing short-handed with an autopilot or windvane self-steerer.

Another feature of the Shannon hull design is the shape of the bottom of the keel. Whether fixed draft or keel centerboard, every Shannon has a large flat keel base that is parallel to the waterline. This design configuration has little importance in the United States because most boatyards have a Travelift to haul boats. In the rest of the world, however, from the Mediterranean to the Caribbean to the South Pacific, marine railways are commonly used to haul and launch boats. A sailboat with a narrow bottom bolt-on fin keel, and especially a winged keel, is difficult to haul out on a marine railway. Additionally, the advantage of the design of a Shannon, that can sit on its own bottom against a sea wall in a remote tidal area for below-waterline maintenance should not be overlooked.

Freeboard

Freeboard (the amount of hull above the waterline) is an important factor when evaluating hull design. Greater freeboard is used to increase interior volume. However, the disadvantage to greater freeboard is windage, which is especially distressing when docking in a crosswind or dealing with storm conditions at sea. Additionally, there is the issue of visual aesthetics, as a boat with less freeboard looks better than one with a high percentage of the hull out of the water. Finally, high freeboard makes getting on and off the boat from a dock or a dinghy difficult and sometimes embarrassing.

Fiberglass Construction

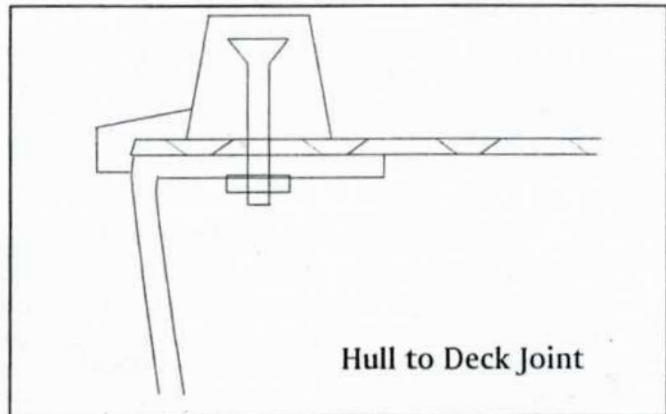
In contrast to the classic yacht appearance of the Shannon 43, with her low freeboard, properly proportioned transom, and good spring to the hull shear, the fiberglass construction used by Shannon are sophisticated and leading edge. The most important feature of Shannon's fiberglass work is the use of composite core construction techniques. Composite core construction uses a layer of structural foam that is sandwiched between two thicknesses of laminated fiberglass. A composite hull can be both lighter and stronger than a conventional hull made with only solid fiberglass laminates. Cored hulls can remove unwanted weight above the waterline and have tremendous impact strength to absorb a blow from a piling, another boat or a grounding. Solid laminate hulls are heavier in the topsides and when hit tend to fracture and fail along the filament lines of the laminate. The Shannon 43 hull uses a 3/4" semi-rigid PVC closed-cell linear foam material, either Airex or Corecell. Linear foams do not shear internally under impact, as has been found in the less expensive cross-linked PVC foams like Divinylcell or Klegecell. Extensive testing has proven that foam core materials have better memory than balsa wood cores, enabling them to spring back into shape after a concussion. Unlike balsa, foam cores do not allow water migration and rot if water penetrates into the core material from a skin fracture. Shannon does not use balsa wood core in hull or deck construction.

Laminate Schedule

Shannon hulls are hand laid-up in one piece. There is no centerline seam where two half hull sides are joined together. One piece hull construction also allows for continuous transverse fiberglass laminates for added strength. The Shannon hull laminate schedule calls for an initial layer of NPG isophthalic gelcoat followed by a layer of 1.5 ounce mat set in vinylester resin. Next, a layer of 2mm Coremat is used to prevent print-through of the roving materials underneath set in iso resin. The laminate schedule then calls for multiple layers of biaxial unidirectional filament 2408 roving. The 3/4" foam core material is then set in Corebond mastic from the shear to the turn of the bilge, with solid laminate at the keel. This mastic produces greater adhesion between the core and the laminate than does the use of resin. The core is followed by multiple layers of 2408 roving, with additional reinforcements of 1708 45/45 bias roving, Kevlar / glass hybrids, woven roving and epoxy resin are

added in high stress areas like the stem, chainplates, rudder post, bulkhead attachments, and internal hull flange. The use of the isophthalic gelcoat and a vinylester resin veil-coat in combination with Interprotect 2000 epoxy barrier undercoats applied before the bottom paint completely protects against osmotic blistering.

Shannon does all the fiberglass work in its own dedicated lamination building with a controlled environment to insure proper curing. More importantly, Shannon's crew of experienced laminators treat their work as the most significant part of every Shannon. The result is a fiberglass hull and deck able to deal with the rigors of the sea for several lifetimes. When only strength and durability are considered, the fiberglass materials and methods used by Shannon are undeniably those best suited for an offshore cruising sailboat of the highest quality. Shannon's ten year warranty on the hull and deck fiberglass laminate attests to the conviction that Shannon's fiberglass work is the finest in the industry.



Hull to Deck Joint and one Piece Hulls

The strongest and most watertight hull to deck joint is achieved by a substantial inboard flange along the top of the hull mold at the shear. This flange makes a substantial base so the deck can be bonded and thru-bolted to the hull. An inboard hull flange on a one piece hull like the Shannon 43 requires laying-up the hull inside a two piece mold. Upon completion, the mold is separated to allow release of the hull from the mold. This is a labor intensive method of construction. In order to have the considerable benefit of an inboard flange, but not the difficulty of laying-up inside the mold, some boatbuilders lay-up the two halves of a hull separately and then join the pieces by tabbing the hull together down

the seam. The seaming of a two piece hull can make the centerline section (which is the area subject to the most stress) the weakest part of the hull. This is an unacceptable method at Shannon. The 43 hull is laid-up as one piece in the bolted-together mold which allows the fiberglass laminates to be continuous athwartships, with overlaps of double thickness on the centerline.

The hull to deck joint is bonded with Sikaflex structural adhesive/sealant and mechanically fastened with 3/8" stainless steel bolts, washers, and aircraft lock nuts on 16" centers. The deck is further secured by thru-bolting the teak toe rail on the deck with 5/16" bolts on alternate 16" centers, and then thru-bolting the genoa track on the toe rail with 1/4" bolts on 4" centers. Because the bolts are staggered, the deck is thru-bolted to the internal hull flange at least every eight inches. In over two decades, no Shannon has had a hull to deck joint structural failure, in spite of some significant accidents and hurricane damage.

Deck Plan

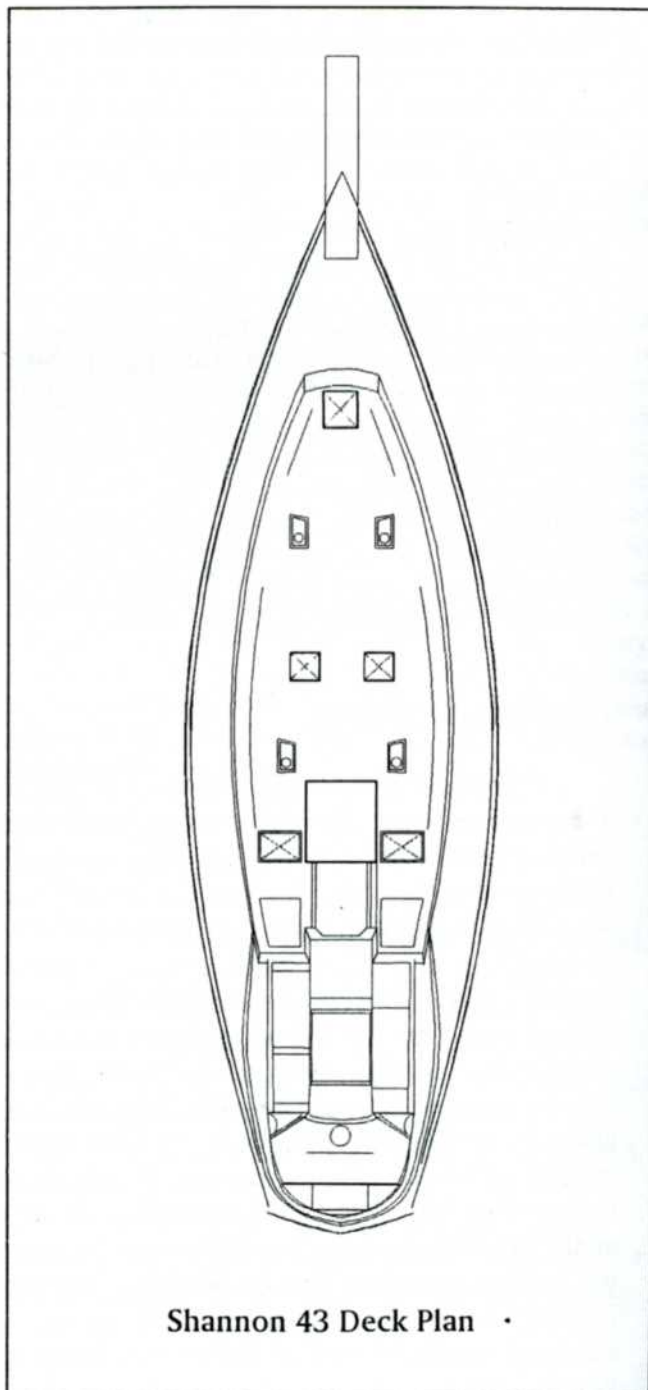
The deck configuration of the Shannon 43 successfully reflects the reality that eighty per cent of time awake on board is spent in the cockpit, and that safety while underway should be of paramount importance.

Special attention has been paid to designing the best deck plan possible. Sailing a boat at times requires leaving the cockpit and going forward to tend sails or handle docklines and anchors. The non-skid areas in the deck are an exclusive Shannon feature. Shannon's non-skid has a custom molded-in raised diamond pattern that provides excellent traction and prevents "hydroplaning" on wet decks. This non-skid is simple to clean, and the diamond pattern can be repaired easily if the gelcoat is ever damaged.

Sidedecks

The sidedecks on the Shannon 43 offer ample space from the trunk cabin outboard to the teak toe rail, double lifelines, and 30" tall stainless steel stanchions. Mast stays and genoa tracks are positioned outboard at the toerail. This is a significant safety difference between the 43 and the typical combination racer/cruiser.

Going forward at night or in bad weather on a boat with shrouds and genoa tracks right in the middle of the sidedeck can be difficult or even hazardous. The one or two degrees improvement in windward performance that inboard shrouds and tracks may provide does not warrant this liability, except for the daysailer or die-hard-racer. Accepting the premise that safety should be foremost, the Shannon 43's sidedecks allow an unobstructed passage from the cockpit to the bow.



Cockpit Design

Along with seaworthiness, performance and safety, another important concern in boat design is comfort. A substantial amount of drafting time was expended, and three full size prototypes were developed, to create the optimum cockpit layout for the 43. Unfortunately, many boatbuilders (and many boat buyers) only focus on interior space and layouts below. Consequently they have ignored the critical design and space issues of the cockpit. A small cockpit does not provide necessary room and comfort. The angle of the seat back and the width of the seat become critical considerations after a few hours sailing. The Shannon 43's cockpit has seats that are long enough to stretch out and lie down on, and the space between seats is close enough that shorter people can brace themselves when the boat is heeled. Cockpit seats that are too short for sleeping preclude a rest in the cockpit, whether for an afternoon nap when anchored or while underway at night. The 43's cockpit also was designed for easy movement while going forward from behind the wheel. The primary winches, instruments, and engine panel are positioned for access and visibility from the helm, so that when sailing it is not necessary to constantly move to see instruments or tend sails. The cockpit of the 43 is a secure and dry place -- it is deep enough to keep you comfortably surrounded by high coamings that keep water out. Because it is critical that the cockpit drain quickly, especially when filled by breaking waves in storm conditions, there are a total of eleven scuppers in the cockpit, four 1 1/2" and seven 3/4". Another example of Shannon's emphasis on offshore safety is the custom liferaft storage well below the cockpit sole or in the transom. The liferaft is secure from theft, protected from waves, and located close at hand where it can be reached safely and quickly. In the extreme conditions of having to abandon ship, the crew does not have to leave the security of the cockpit for the foredeck in order to get to the liferaft, or to go below in order to drag it on deck. Another safety feature of the cockpit design is that it permits the use of a full length emergency tiller installed directly onto the rudder post in front of the pedestal that can be used while comfortably seated. Emergency tillers on other boats are often too short or are located in such awkward locations that they are very difficult to use for more than a few hours.

The cockpit on the Shannon 43 has two deep sail lockers and a shallow storage pan under the cockpit seats to port and starboard. Even though roller furled jibs make it a misnomer to call these sail lockers, these

storage areas are rapidly filled by fenders, inflatables, lines, etc. By removing the sail locker partitions, access to the back of the engine, stuffing box, rudder quadrant, and other machinery is achieved.

Bow Platform

The bow platform or bowsprit on the Shannon 43 serves many functions. It extends the sail plan horizontally, allowing for a double headsail rig. The bow platform also allows for carrying two oversized anchors (of different design), each with a separate anchor rode and its own deck pipe into the divided chain locker in the bow. Unlike other boats, where it may be necessary to get another anchor out of a cockpit locker at 3 AM when the boat starts dragging during a line squall, the 43 has another anchor ready that can be set quickly and safely. The Shannon 43 can carry either nylon line or chain anchor rodes, depending on the owner's choice, and will also accommodate virtually any type windlass. The bow platform is secured by bolts through the deck and a solid rod bobstay. The stainless steel bobstay fitting is bolted to the hull just above the waterline. It is so strong that a mooring pennant can be shackled through a special fitting so that the entire boat can swing off the bobstay fitting, without any concern about chafing. This is particularly important if moored in storm conditions. Beyond rig and ground tackle considerations, the bow platform provides an ideal vantage point for spotting coral heads or bottom changes when exploring unfamiliar waters.

Ventilation, Ports, & Deck Hatches

Proper ventilation is very important both when underway or at anchor, especially in warmer climates such as the Caribbean. There is generally some wind in an anchorage, but a boat must be able to open up and take full advantage of the breeze. On the Shannon 43 there are four 4" vents with baffled dorade boxes, twelve opening ports (every port on a Shannon is an opening port), and five deck hatches. The three forward watertight deck hatches are superior to the common metal frame hatches. These hatches can leak at the flange where the hatch frame is attached to the deck, and their gaskets may let in water during storm conditions. Shannon deck hatches are an integral part of the boat and have base flanges molded into the deck. The hatches are made of interlocking teak frames and a heavy plexiglass

top. Also, the Shannon hatches can be repaired or rebuilt using basic tools. Damaged metal hatches generally need to be replaced, which can be a real problem in remote cruising areas.

Custom Interior Layouts

Every Shannon 43 interior is custom created to suit the tastes and requirements of the individual owner. A sailboat should support a comfortable lifestyle, whether it is used for weekend cruises or for circumnavigations that may last years. People go sailing for pleasure, adventure, exploration, and to be close to nature. A boat should enhance these experiences. At Shannon, there are no limitations imposed on the design of the interior layouts because of a molded hull liner or fiberglass interior pan. There are no standard modules that must be incorporated into the layout. Selections of the many layouts for the Shannon 43 include a forward cabin with a centerline double berth or traditional V-berths, one head or two, separate stall showers, a guest cabin with a double berth, and a main salon with a table and sliding settee transom berth seating.

Developing the Custom Interior

At first glance, a prospective owner might be intimidated by the prospect of designing a custom interior and dealing with countless decisions. The reality at Shannon is neither intimidating nor confusing, but rather a truly unique experience of participation. Unlike a completely new custom vessel with no point of reference for decision making, a Shannon 43 owner has the opportunity to take advantage of the experience gained from over 300 Shannon owners. Since no two Shannons have ever been exactly the same, a substantial reservoir of knowledge from the choices that have been incorporated in the previous boats has been maintained.

As part of the purchase process a potential owner meets with Walt Schulz and members of the construction team to discuss such requirements as the intended use; principal cruising locations and likely passages; the good and bad features of the owner's previous boats; the choices of machinery, equipment and rig, along with the interior layout possibilities. During this process any ideas, concerns, and questions are addressed. Interior construction drawings and a detailed

Shannon Custom Production Order are prepared. With Shannon's state of the art computer design software, it is possible to develop various custom layouts for viewing on a color monitor. These plans can then be rotated for three dimensional views.

These initial discussions also serve to accurately select any optional equipment so the total cost of the boat is known prior to the start of construction. A day at Shannon laying out a boat is a unique and exciting experience that creates a bond between owners, their boat, and the people who will build her. At Shannon, owners deal directly with people who design, build, own, and actually sail Shannons in offshore conditions. This synergy of owner and builder achieves the goal of the ultimate bluewater yacht.

Interior Construction Specifications

Following hull molding and ballast installation, the next stage is bulkheading -- the first step of the interior construction process. In many ways, a Shannon 43 is similar to a wooden boat built inside a fiberglass hull and deck. Full length fore and aft stringers are installed below the cabin sole to stiffen the hull. A gridwork of transverse mahogany floors are then fastened into the stringers. These sub-floors are treated with wood preservatives and are removable in order to allow removal of the tanks located below the cabin sole. Shannons are among the few yachts that provide the ability to remove fuel and water tanks in a non-destructive manner. Individual bulkheads are then attached to the hull by a sophisticated tabbing process. A half-round polyester fillet sets the bulkhead away from the hull to prevent a hard spot in the hull where the bulkhead meets the hull. This half-round shape also gives strength to the multiple layers of 1708 biaxial 45 degree bias laminates that are set in epoxy resin. An interesting feature of Shannon's bulkheading process is that strands of fiberglass pass through holes in the bulkhead and are then laminated to the hull. These reinforcements serve as a mechanical bond between the hull and bulkhead, complimenting the secondary chemical bond of the tabbing. While the stringer systems and bulkheads are being installed, Shannon's cabinet shop builds the lockers, drawer banks, and cabinets that will be mounted between the bulkheads. For these components, owners can pick the specific style for locker doors, drawer faces, counter fiddles and bulkhead paneling from a selection of woods including cherry, teak, mahogany, and birch, along with a range of synthetic laminate and solid materials for galley and head countertops. Mortised and tenon glued joinerwork,

screwed cornerpost construction, and louvered doors are all brought together with consummate skill by Shannon craftsmen. All surfaces on the inside of the hull are sheathed in wood strips called ceilings, instead of painted fiberglass or -- even worse -- carpet/vinyl glued to the hull. These ceiling strips and the airspace behind them insulate and ventilate the boat. They also allow any moisture that forms on the inside of the hull to drip down into the bilge without saturating the contents of the lockers. Shannon is one of the few boat builders left who still make cabin soles from 5/8" solid teak planks, double screwed, with holly spline insets to prevent slipping, instead of using teak veneer plywood that can wear through in a few years.

Storage Space and Access

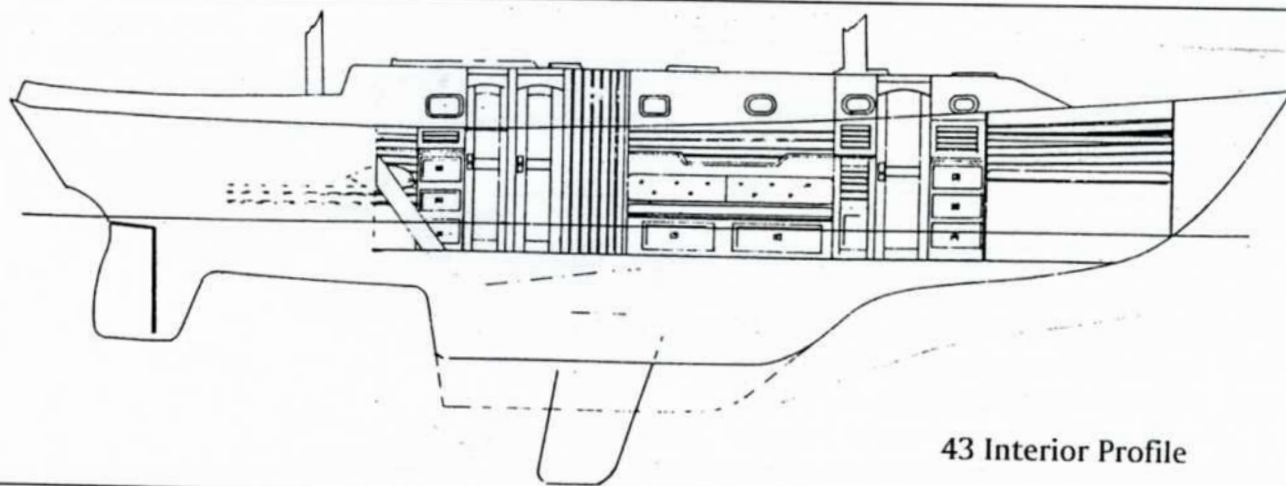
The Shannon 43 interior provides many storage spaces for all the supplies, personal gear, and equipment that one needs for making long passages while living aboard. To satisfy liveaboard cruisers' desire for maximum storage, the 43 has lockers, drawers, medicine cabinets, cedar lined hanging closets, book shelves, and other storage areas. The custom interior construction technique means every available space can be used for some type of storage. When experienced cruisers come to order the Shannon of their dreams, a proper place is found for every item they know they need. Over the years the list of built-in items has come to include custom computer systems, fireplaces, gun lockers, electronic keyboards, chess sets, washer/dryers, cat litter boxes, and even a tantalus -- an antique crystal brandy decanter.

In addition to maximizing storage space, another important feature of the interior of the Shannon 43 is the concern for access to equipment and machinery access.

The Shannon philosophy acknowledges that almost anything on a boat that is mechanical or electrical will someday need to be repaired, if not replaced. Therefore, access must be provided to all parts of the boat to allow maintenance and removal of machinery. The main engine, optional generator, fuel and water tanks, centerboard, pumps, electrical wiring, rudder and all other equipment can be removed simply, without having to damage or cut anything. By contrast it is not unusual to find boats where equipment access for maintenance and repair is all but impossible and removal requires a chainsaw or cutting torch. A boat built with inaccessible equipment will be aggravating day in and day out, and it will be very costly the first time major repair work needs to be done.

Galley

The basic galley configuration of the Shannon 43, like many other areas of the boat, reflects the input of the many Shannon owners over the last two decades. The U-shaped galley of the 43 provides a secure place to work with ample counter space and excellent storage. The three burner stainless steel LPG stove with oven, refrigeration with freezer and a side opening door, along with deep double stainless steel sinks make food preparation enjoyable at anchor and practical underway. The galley is located so as to receive light from the overhead hatch and ventilation from the eye level portlights.



43 Interior Profile

Sailplan Choices

Because Shannon builds yachts for serious offshore sailing, the primary focus in rig design is optimizing performance and minimizing sail handling workloads, without compromising safety. Just as custom designed layouts characterize the interior of every Shannon, the sailplan and rig of each boat is different based on her owner's requirements. The Shannon 43, as a rule, is rigged with double headsails for ease of handling and a variety of different sail combinations, depending on the weather. The classic Shannon cutter rig has twin side-by-side forestays on the bow platform that can accommodate both a yankee and a large genoa either roller furled or conventionally hanked on. Just aft of the actual stemhead is the staysail which is available either loose footed or on a self-tending club boom sheeted to the cockpit. The staysail is an excellent heavy weather sail that can be used for heaving-to in storm conditions. Thus, three sails are carried forward of the mast ready to go as wind conditions change without having to drag a jib out of a cockpit sail locker. The twin headstays on the bow platform also allow for excellent wing-and-wing sailing with two jibs in the trade winds.

The ketch rig on the 43 provides balance, versatility and ease. The 43 ketch rig is a true ketch with a good sized mizzen, not a sloop with a broom stick stuck in the cockpit. The different sail combinations with a double headsail ketch provide simple sail handling. The ketch essentially eliminates the need to reef the mainsail in most conditions. When the wind increases to over 25 knots, the mainsail is dropped rather than reefed. The boat then continues to make hull speed under headsails and mizzen ("jib and jigger") combination. As the wind speed increases, sail area is reduced by reefing and then dousing the mizzen, without having to leave the safety of the cockpit. A ketch rig also allows for use of a mizzen staysail, which is the easiest to use of all the downwind and reaching light-weight spinnaker-type sails. The efficiency of ketch rigs has been demonstrated best by the winning performances of ketches in the recent Whitbread around the world races.

Scutter Rig

The new Shannon "Scutter" rig offers a variation on the cutter/double headsail ketch theme. In 1994 Walt Schulz developed the "Scutter" (short for sloop/cutter to reflect the combination of the foretriangle plan of a double headsail sloop and the mainsail of a cutter) as an alternative rig for all Shannon models, including the 43. On a conventional sloop, a 140% genoa cannot be reefed down to much less than 110% and still power the boat. A rolled up genoa loses its shape compromising its structural integrity. Consequently, it has no efficiency when reduced more than 30%. Roller furling a large genoa is no substitute for a true working jib in heavy winds. On a single headstay boat the required headsail change when winds increase means dangerous foredeck work at the worst time. By contrast, the "Scutter" rig keeps the boat sailing well in a wide range of wind speeds, without putting the crew in harm's way when making sail changes.

There are two different "Scutter" headsail arrangements available for the Shannon 43. One is with a conventional roller furling 140% genoa positioned at the stemhead. Four feet forward of that sail on the bow platform is another stay that accepts a working jib, also on a roller furler. In less than 20 knots of wind, the boat is sailed just like a sloop, with main and full genoa. As the wind picks up, the genoa is rolled in 30% to a predetermined and reinforced position. With more wind, the genoa is fully furled and the working jib is rolled out. The jib can also be reduced by 30% to the size of a storm sail for extreme conditions. Another choice for the "Scutter" rig provides a self-tending headsail. The primary headsail is a 100% genoa on a self-tending boom that adjusts fore and aft on a sliding track to allow for a better sail set as the apparent wind comes aft. In light winds the working jib can be rolled out for additional sail area and the boat sailed as a double headsail rig. This variation of the "Scutter" rig has the convenience of a self-tending sail, even though the sail itself is much larger than a typical staysail. With the self-tending "Scutter", the 43 can be tacked with no need to touch a sheet. Another feature of the "Scutter" rig is that the center of effort on the headsails moves forward as the sails are furled, reducing the weather helm typically encountered on other boats in the higher wind ranges. The "Scutter" rig also incorporates a mast head crane, resulting in the relocation of the back stays further aft.

This allows for 15% more roach in the fully battened mainsail, enabling the "Scutter" rigged 43 to sail to windward reasonably well without the use of headsails. By eliminating the dependency on large overlapping genoas to make the boat go to weather, the "Scutter" rig requires much less winch work sailing to windward than a sloop. The features of the "Scutter" can be combined with the addition of a fully battened mizzen for a "S'ketch" rig, resulting in endless possibilities for the cruising sailor.

As with most things concerning boats, there are definite trade-offs with either the classic cutter, "Scutter", double headsail ketch or "S'ketch" rigs. Each rig offers good performance combined with easier sail handling. The double headsail arrangement provides two sails forward of the mast that require much less work to sheet-in when tacking compared with the large genoas on sloops. The racing rating rules favor genoas that extend aft of the mast with little benefit in terms of absolute speed and that penalize a cutter rig because of the long main boom and the long "J" measurement (the distance from the mast to the forestay). Ketches also suffer significant rating rule penalties for around the buoys racing, although they are faster in terms of absolute speed in most offshore conditions. Shannons make no concession to rating formulas, and are therefore powered by the smallest practical headsail for the minimal amount of winch work with the most speed. Another disadvantage of sloop rigs that are taller than 65' is that the boat cannot fit under the highway bridges of the Intercoastal Waterway. All the rig options of the Shannon 43 are less than 65 feet off the water.

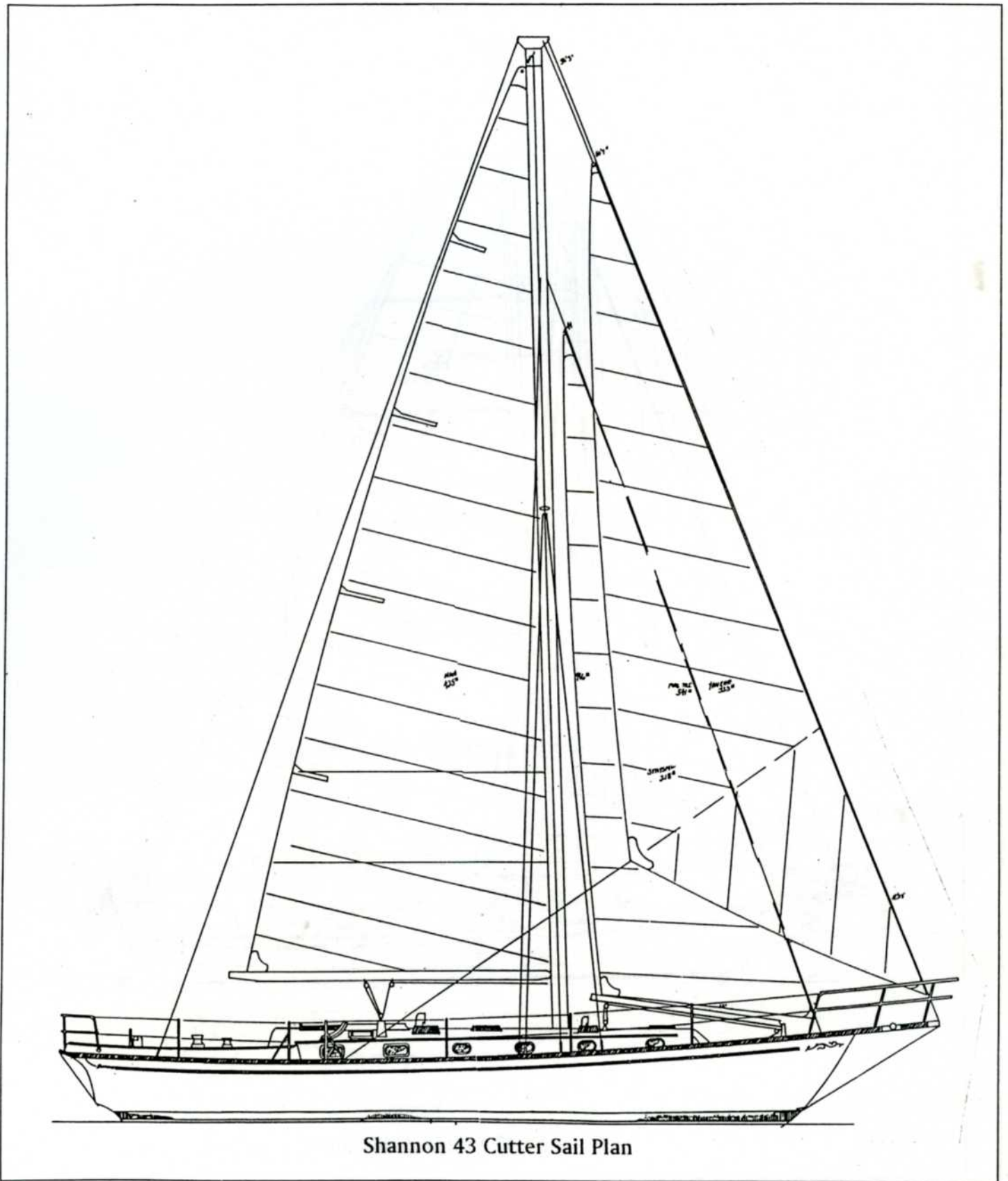
Many quality boats feature internal mast furling or stow-away mainsails, a necessity due to their tall sloop rigs. For a variety of reasons, primarily related to inefficient sail shape and equipment reliability problems, Shannon does not recommend internal mast furling mainsails. To give the same ease of handling as a stow-away system, the 43 can be equipped with the main halyard and continuous reefing lines lead aft to the cockpit. With the installation of an electric self-tailing winch, mast track and cars, full length battens, line stoppers and lazy jacks, raising the main and putting in reefs can all be accomplished from the cockpit with the same ease as a stow-away system. The Shannon reefing option has the advantage that if any component of the this system fails, the sail can still be lowered, and reefs put in the old-fashioned way. However, stowaway mainsails are available at owner request.

Spars and Rigging

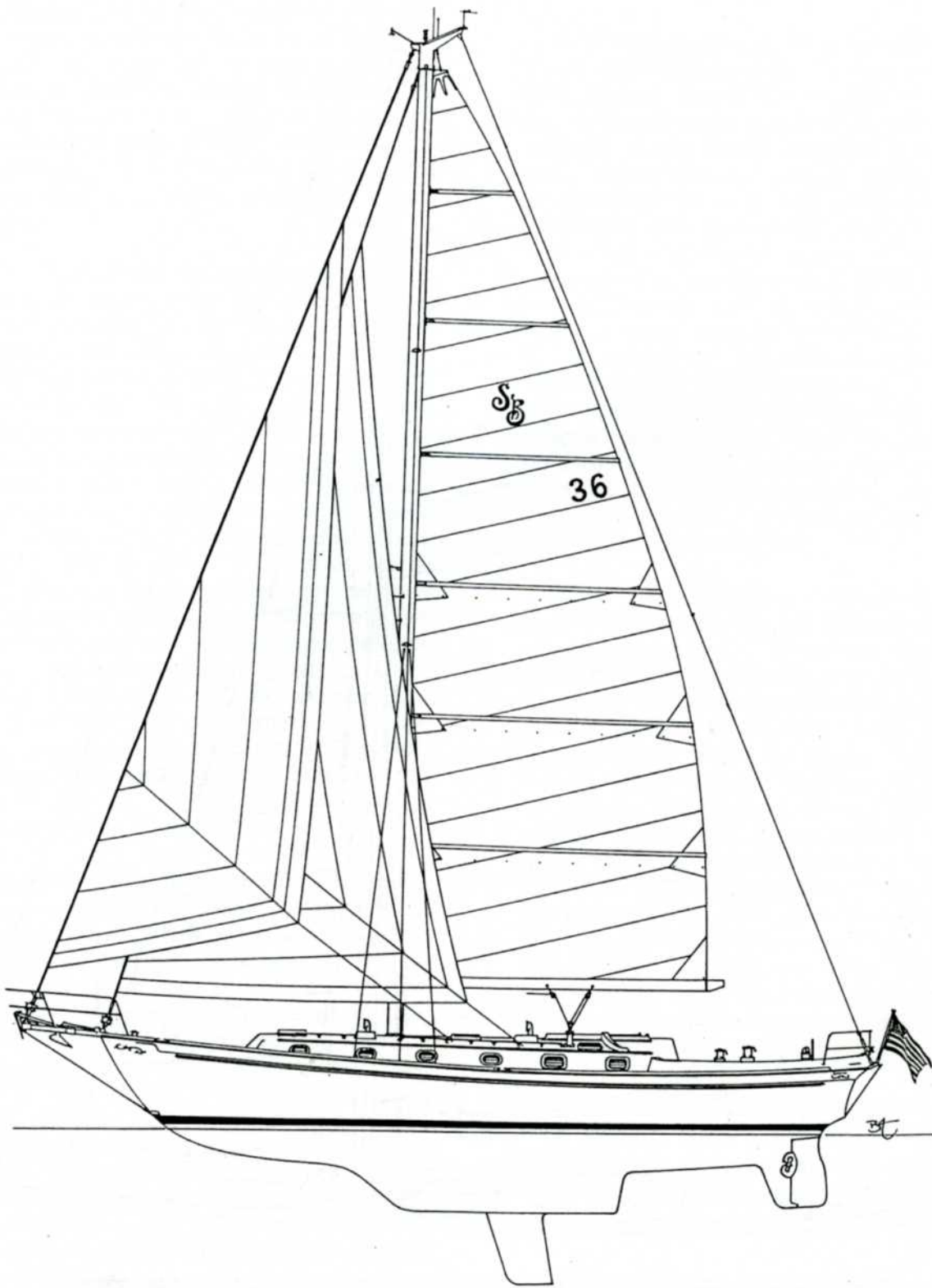
Shannon spars are oversized aluminum sections with a white Awlgrip finish. The mast goes through the deck and is stepped on the keel. It would be unconscionable to put a deck stepped main mast on an offshore cruising vessel. Decisions as to mast height, roller furlers, mainsail reefing, halyard and winch layouts, track and car systems, whisker poles, and lazy jacks, are all part of the owner's dialogue with Shannon before the final rigging choices are made. Quality, however, is the consistent theme. Mast, boom, blocks, and standing and running rigging of the 43 are all oversized for an added measure of safety. The Shannon 43 utilizes 5/16" x 3" 316 stainless steel chainplates each secured with five 1/2" stainless steel bolts. Even though the chainplates are outboard at the toerail they are not attached directly to the hull. The chainplates are installed on transverse bulkheads which are fiberglassed to the hull. By placing the chainplates transversely (wide part of the chainplate athwartships), the correct mast shroud angle can be achieved.

The standing rigging is Navtec rod rigging, with open barrel turnbuckles and external mast tangs as standard equipment. While rod rigging has the advantage of less stretch and better return, its big plus from Shannon's perspective is the elimination of possible failure from the crevice corrosion often found with 1 x 19 wire rope at the swaged end-fittings. When rod rigging is combined with external mast tangs, a broken rod can be replaced with a piece of standard wire rigging anywhere in the world. Shannon rigging has a backstay that is split at the bottom which allows the load to be distributed to two chainplates. Shannon primary halyards run outside of the mast. While internal halyards may reduce windage minimally, they are difficult to replace should they break while at sea. Internal halyards also eliminate the option to use the genoa or yankee halyard tail as a temporary main halyard or to be able to go aloft for repairs on either end of a halyard.

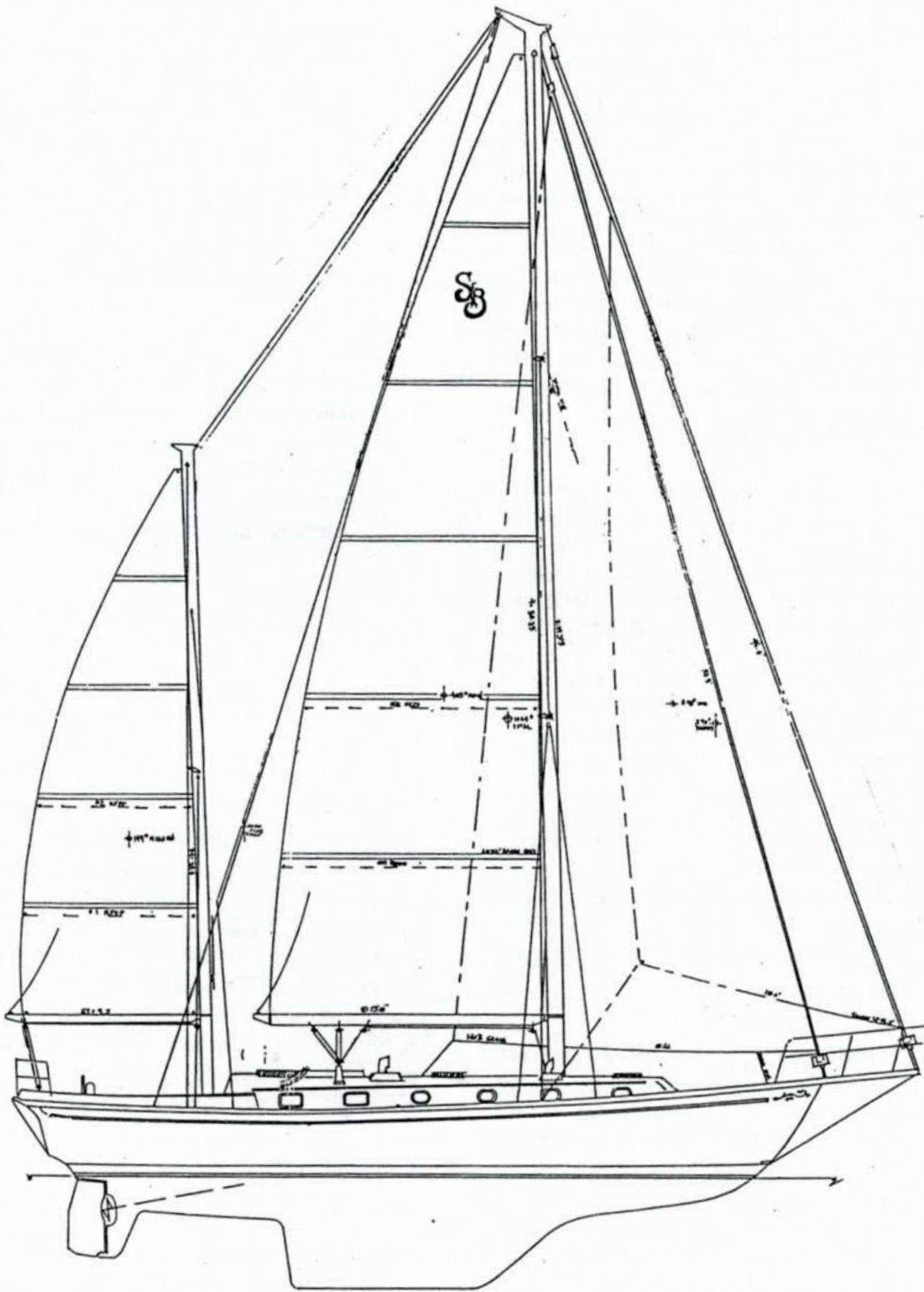
The standard sailway equipment package for the 43 includes as part of the purchase price a mainsail with three reefs, genoa, working jib and sailcovers by the sailmaker of the owner's choice.



Shannon 43 Cutter Sail Plan



Shannon 43 Scutter Sail Plan



Shannon 43 S'ketch Sail Plan

Machinery and Equipment

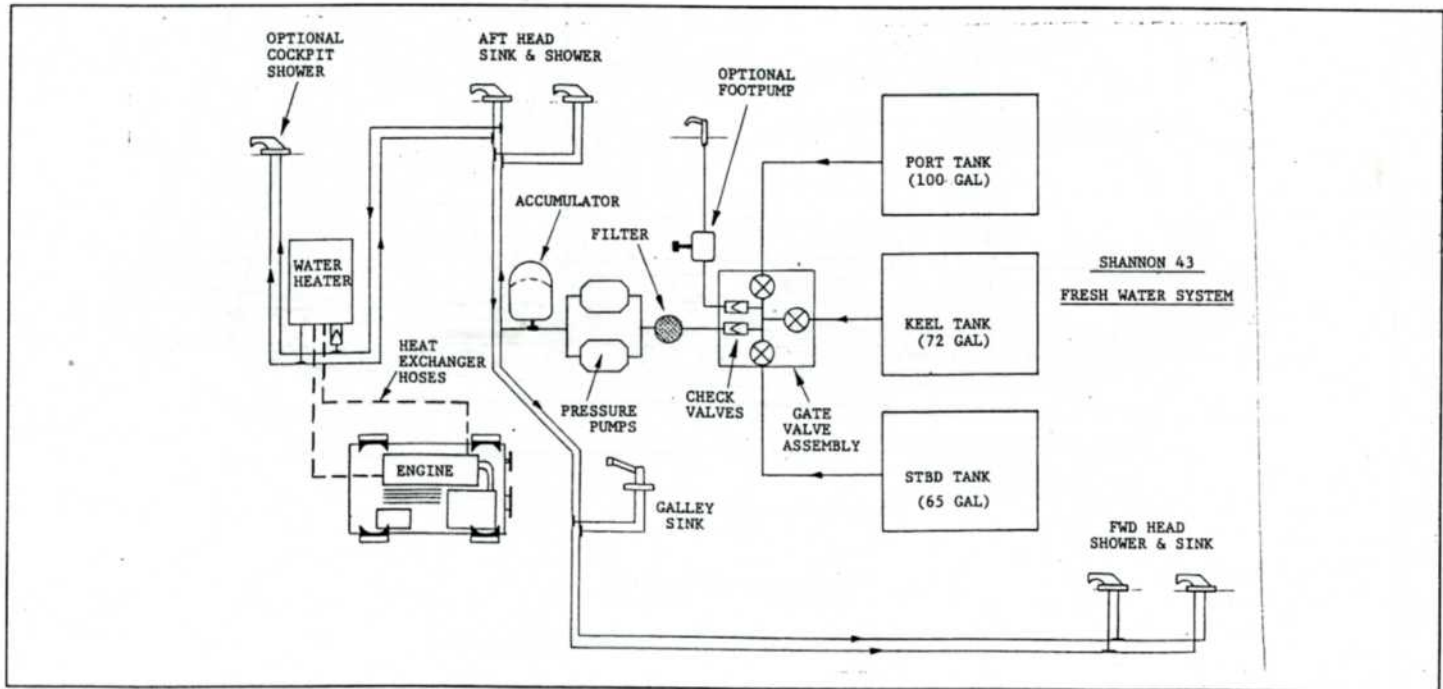
One of the best ways to determine the quality of a yacht's construction is to look at the machinery and equipment that comprise the boat's bill of material. Many of the important pieces of machinery and equipment that go into a quality yacht can be very difficult to inspect when a boat is on display at a boat show. The best way to evaluate a yacht is to examine the boat in various stages of construction, and then to thoroughly inspect a finished boat. Since there are no rules, few construction standards, and limited government regulations that a boatbuilder must follow, the buyer's best assurance is dealing directly with an experienced and reputable quality builder like Shannon.

Tankage and Plumbing

A shortage of tankage is one of the most common concerns of experienced cruisers. All Shannons have generous tankage and allow the owner to choose how much is allocated to fuel or water. The typical Shannon 43 has three fresh water tanks totaling 200 gallons made from 316L stainless steel, with baffles, and isolator valves for self trimming and water use management. With stainless steel tanks the fresh water will not be tainted by styrene and is not prone to the growth of bacteria and fungus, as can happen with PVC or fiberglass tanks.

The fresh water system has two ShurFlo pressure pumps, plumbed in parallel. If one pump fails the other pump can still provide water. In keeping with the Shannon philosophy of systems redundancy, a fresh water foot pump is also standard as additional backup. There is a 10 gallon stainless steel hot water heater made by Atlantic Marine that uses the engine cooling water, or 110VAC from shorepower, to make hot water. All thru-hulls are bronze full way seacocks, installed with separate backing blocks, wirewound hoses and double hose clamps. The seacocks, pumps, hoses, and valves are labeled with plastic tags for quick identification in an emergency.

The head toilets (the typical layout has two heads) are the Raritan PEII. While fixing a clogged head is an unpleasant job, it sometimes needs to be done. This head can be completely disassembled and Shannon supplies a head repair kit standard with each boat. The showers, icebox, and head sinks all are plumbed overboard and do not drain into the bilge.



Electrical System

The Shannon 43's electrical system conforms to ABYC (American Boat and Yacht Council) standards for wiring and installation of electrical components. The color-coded copper strand tinned wiring is placed high around the perimeter of the hull, not in the bilge, and is accessible behind well-ventilated covering boards. All the thru-hull hardware, chainplates, rudder post, and engine shaft are bonded together for lightning and electrolysis protection. The 12 VDC electrical power is supplied by a 200 amp high output alternator with an external regulator charging five 115 AH gel-cell batteries in a two bank configuration. The 12 VDC and 110 VAC electrical systems are controlled by custom master panels with selector switches, circuit breakers, ammeters and voltmeters. Interior lighting is provided by 10 overhead dome lights, 8 bulkhead mounted halogen reading lamps, and 4 under-counter florescent lights in either stainless steel or brass depending on the owner's choice of finish. Several of the dome and florescent lights have dual bulbs for red night-lighting.

Electronics

The Shannon 43 is delivered with the basic electronics as standard. These include Raytheon ST 60 depthsounder, speed and distance log, and AWI/AWS (apparent wind indicator), and a ICOM VHF. Extensive optional electronics are available, with custom installation and interfacing, based upon each owner's equipment preferences and specifications. Shannon provides valuable input on the ever-changing world of marine electronics and communications based on what gear Shannon owners say is working best. Each boat has a copper strapping counterpoise or ground plane glassed to the hull for a SSB (single side band) radio antenna. While some owners do not have a SSB radio installed originally, this is one item that is impossible to properly add later. It is therefore included in every boat for possible future SSB radio installation.

Engine

The standard fresh water cooled diesel engine is either a 71 HP Westerbeke (W-71C) or a 75HP Yanmar (4JH-2E). This choice is an owner's decision, with preference often based upon either prior experience with the manufacturer, or the fact that the Westerbeke is naturally aspirated and the Yanmar is turbo-charged.

These engines are oversized for the weight and form of this hull so that they will deliver more than enough power for the three blade prop, high-output alternator and engine drive refrigeration.

With three 5052 aluminum alloy fuel tanks totaling 105 gallons, the 43 has a range of 600 miles at a cruising speed of 7 knots (8.3 knots top speed). The fuel system includes a Racor water separator/fuel filter and independent tank gauges. The engine compartment is insulated with lead lined acoustical foam. There is sufficient space in the 43's sail lockers and interior for the installation of optional equipment such as a generator, air conditioner, desalinator, heater, inverter, etc. all to the owner's specifications. Complete engine controls and instrumentation are provided. The steering system is an Edson pedestal quadrant and sheave steerer.