How *SHEARWATER* Came To Be

By Ted Cary

The Shearwater project began as a concept in the mind of Bill Mathers. Bill spent part of his youth as a U.S. Navy salvage officer, refloating vessels which had fallen victim to V.C. mischief along the coast of South Vietnam. He liked the work, the sea, and the travel. So when he left the navy, he stayed with the sea and travel. Thirty years of working in marine construction and marine archeology, with thousands of miles of sailing aboard the two boats he's owned, has left him with some definite opinions as to what he wants in a vessel. When he decided to get what he wanted it was clear that none of the production boats, and few if any custom designs, were even close enough to use as a starting point. Bill had spent eight years sailing the seas of Southeast Asia aboard his 80 foot S&S schooner, built in Hong Kong in 1937. He returned to the States in 1990. Then had three years of sailing the Chesapeake Bay and Caribbean with his Tektron 50, an open bridgedeck, performance-oriented catamaran designed by John Shuttleworth. To his mind, in the interest of safety, utility, and enjoyment, the new boat would be a catamaran. He went shopping for a designer who would work with him. A few false starts led him to a surprising but fortuitous choice.

Jim Donovan had developed a sold reputation in yacht design. But all his work had only one hull. Still, he was an avid beach cat sailor and was eager to expand his portfolio into the multihull field. The enthusiasm, technical competence, and attention to detail reflected in his impeccable drawings convinced Bill that Jim could help transform his concepts into an extraordinary vessel.

The two of them planned, Jim drew, and Bill looked for a builder who could help with structural engineering and deliver the final product within a reasonable time frame and budget. One of the more promising bids came back from Gold Coast Yachts in St. Croix, U.S.V.I. Forty-three of the forty-seven boats GCY had built were commercial day charter boats. In the grueling arena of 365-day-a-year sailing, their products have an enviable record for low maintenance and longevity. And Joe Colpitt's uncommonly fast and comfortable 56-foot trimaran *Virgin Fire* was convincing evidence that the design and building teams at Gold Coast Could successfully collaborate with an owner/designer. After several rounds of negotiation a contract was signed, and owner, designer and builders committed themselves to the creation of *Shearwater.*

A cooperative project like this is not an easy thing. The participants can go their separate ways at completion, but the product of the union will probably be around for a long time. The outcome will have long-term consequences for both reputation and personal satisfaction. Everyone involved wants to see a functional work of art at sea trial time. Those who spend their lives making boasts tend to be decisive and opinionated. It's required conduct if you ever want to launch one. The little office at Gold Coast witnessed some spirited exchange as the design was adapted to meet GCY engineering parameters and the construction techniques were matched to

the requirements Jim and Bill had established. Mutual respect, open minds, and well-presented evidence kept the process moving.

Let's take a look a Bill's original wish list, and see how close the reality is to the dream. The boat is intended to be both home and cruising vessel for the owner. It was also expected to serve as a platform for surveying of shipwreck sites, for the purpose of archeological recovery. It needs to deliver a crew of six to eight members to remote sites in a timely and economical fashion. Then it must work as a dive platform and site plotting office, as well as a living quarters for the archeologists. To be effective at all of these tasks it must be fast, sea kindly, stable, have a sizable deck, provide areas for personal privacy and socializing, have functional desk space, and a mechanical shop, and incorporate conveniences for efficient work. It also must be simple enough to be reliable and easily repaired. Shoal draft expands the utility, since shipwrecks are often shoal water groundings. To boost crew confidence and morale, the vessel should be unsinkable.

The stability at anchor, deck space, and sleeping quarter's privacy are best provided by a cat. Payload and space requirements, considered along with performance demands, will determine displacement. Then we get down to the decisions that have more possible choices, with less clear difference between them, and where compromises must be made. The score here determines where she falls on the scale from adequate to excellent.

Hull shape bears heavily on speed potential, carrying capacity and quality of the ride. The target for sailing speed was over 15 knots. That indicated hulls with a waterline length-to-beam ratio around 12 to 1 and fairly buoyant ends for a high prismatic coefficient. Jim had to consider, however, that very high prismatics deliver the speed along with high vertical accelerations as the ends bounce over waves rather than easing through them. Maximum speed was not worth accepting a rough, exhausting motion. A carefully crafted compromise was required.

Also to be considered was motoring performance. Bill decided that 6 to 8 knots powering speed would fill his needs, allowing engine weight and fuel tankage to be kept moderate.

Bill wanted the simplicity of a fixed mast, but was willing to consider a rotating spar if it could be demonstrated that it was simple to use and reliable. Roger Hatfield asked him to sail a boat with a Gold Coast built rotating mast, and talk to the crews of GCY boats. The final choice became a slightly modified version of the 72-foot stick for *Virgin Fire,* providing better drive, at price and weight figures competitive with a fixed aluminum spar. Bill says the mast is self-tending while sailing, requiring only a pair of lines to fine-tune the angle to apparent wind direction. That combines with the self-tending jib to make tacking a matter of simply turning the wheel. No sail handling required unless the light air reacher is deployed.

The standard construction methods at GCY have been strip planking and plywood/stringer components, with occasional use of honeycomb or foam core. Jim showed convincing evidence that a shot at the target weight was going to require a lot more composite work so *Shearwater*

was delivered with fir strip bottoms, Baltek DuraKore topsides, high-density foam inserts at all openings, foam-core decks and cabin top, and Nidacore honeycomb-cored bulkheads, bridgedeck panels, and furniture panels. The vacuum-bagging pumps ran a lot of hours, and it shows in the stiffness and finish. And with all of the structure less dense than water, no amount of damage could sink her.

Mathers 57’
Dimensions LOA 56’9" BOA 30’0 LWL 54’0" Hull Width 6’0" **Draft** Rudders down 4’6" Rudders up 1’11" Dagger down 9’0" Displacement 30,000 lbs **Sail Area** Main 1,128 ft² Jib 427 ft² Reacher 925 ft²

Ted Cary, “How “Shearwater” Came to be”, *Mutihulls Magazine*.