

## **GOLD COAST YACHTS AND THE SIAMESE GEMINI**

*By Jim Brown*

To watch the Caribbean day begin from the heights of an island like St. Croix is to be convinced that the world is always turning toward the morning. And down by the river, there's something happening, something to suggest that the long night for production wooden boat building has ended.

This is the story of two early risers, one named Roger and the other Rich. It tells of how they independently cast themselves adrift from the landmass of society and soon thereafter found each other in the dawn. They met while wandering in the littoral zone of our no longer Virgin Islands, and they had little between them, figuratively, besides a hammer, a wedge, and a vision. The hammer was steel-willed, the wedge was made of laminated wood, and the vision was, like, out of sight, for they were blinded by the sunrise to what could not be done.

They began in the early 1980s by driving their wooden wedge between the tectonic plates of Earth's crusty economy, and the first crack they opened seemed to shed new light on modern wooden boat building. Then their wedge came up against the Caribbean's cross-cultural melting pot. They tapped on it, liked the sound, and tapped into it. Through the mid-80's they continued to hammer on their wooden wedge, and a market niche began to spread. Today, Gold Coast Yachts is America's largest producer of excursion catamarans. Taking a symbol from their trusty wedge, they produce their boats in laminated wood.

"We love wood fiber," says Roger Hatfield, who is chief designer at Gold Coast Yachts. Note the qualifier, "fiber." It implies, to the dismay of some, that wood is used in composite with epoxy and even fiberglass. However, Rich Difede, who is Hatfield's partner and Gold Coast's general manager, says, "We wouldn't be in business if we tried to build in any other way." And they certainly are in business. Since their incorporation in 1986, this outfit has achieved a 24-boat record of on-time, on-budget deliveries of fairly large, sophisticated vessels. Three of the 24 were 65-footers, and their current stack of signed contracts has them committed for many months.

What we're speaking of here is almost nostalgic. Wood is not normally considered the right material for production boat building, but GCY and others have discovered a fiscal fusion of old piece-by-piece craftsmanship of wood with the new world of polymers. It's becoming clear that if this mixture is made right (see "Wood & Epoxy," WB No.105), some fine things can happen. Such as Gold Coast's "stock" 49 passenger, 53' day-charter catamaran, of which they've built 12 sister ships to date, all complete with wing masts and U.S. Coast Guard certificates, and whose delivery time is just 12 weeks! If that's not a sunrise for production wooden boat building, then at least it's a ray of hope.

In this writer's opinion, today's boat building industry shows little evidence of innovation other than continued efforts to hi-tech the product out of reach or "chauvinize" it into obscurity. Quite apart are GCY's efforts, that are aimed at getting ordinary mortals out on the water by the numbers. Their charter sailing catamarans speak to the future of an industry that has already carried about 4.25 million passengers since 1960 -- that's about 2% of the U.S. population. The current seating capacity of Gold Coast boats is over 350,000 passengers per year, and the curve is climbing fast.

Let's talk business about GCY. First, we must recognize that this is a holistic happening. Imagine, for instance, a modern boat building company with about 30 employees that has no signs to identify its location, no air-conditioned reception lobby, no slick brochures, whose hiring policy is neither equal opportunity nor black nor white but "zebra," whose people sometimes work all night but then disappear on days when the surf is up, and whose employee-benefits package is five times the size of its marketing budget! Go ahead, just imagine. What you may rightly envision is an interracial tribe of skill fanatics, each worker pushing the others to new heights of achievement. At the time of my visit to GCY, the firm had built six boats during the past fourteen months, four of which were brand-new designs. Their sizes ranged from 38' to 53', their dry weights ranged from 4,000 to 20,000 lbs, and their prices ranged between \$15 and \$20 per pound.

Because the big-boat business is rife with horror stories about failed builder/client relationships, I asked Rich Difede how they manage the problem. He explained, "It's up to us to convince our clients that they're getting good boats and good deals, and the way we do that is through our employees. First, a steady job is a precious thing on this island, so we all tend to contribute to the very best of our abilities. But to really tap that spirit, Roger and I had to learn how to get out of the way. We used to try to be everywhere at once, working in the shop and in the office at the same time; but, you know, the phone would ring and our glue would set up... The next thing we know, our crew ran us both right out of the shop. 'Get in that office and find us more work,' they said, 'and leave the building to us!' So, by degrees, we got out of their way. It wasn't easy, and we had some teething troubles, but the result was a rare esprit de corps that is obvious to our customers. They can see that everyone tries very hard, and it shows up in the product."

But what about the tire kickers and pricing and the contracts and the...?

"We're not bothered by tire kickers because of where we are," said Rich. "If a guy comes all the way to St. Croix to talk boats with us, we know he's serious, so that's why we don't need any signs or fancy fronts. We're actually a semi-custom builder, but about half of our boats are built on a contract price. When it comes to naming that price with confidence, it's hard to beat the benefits of repeat production of similar vessels. For the other half, like new models and such, we prefer a cost-plus deal, with an estimated price. If the estimate is exceeded, our profit declines, so we have no incentive to drag out the job. It wasn't too difficult until a tough customer named Hugo came along. That hurricane blew the roof and the walls off the shop, and vacuumed away almost everything except their trusty hammer and a half-built 53' catamaran, which itself would

have been sucked into the funnel were it not for the building's bare steel frame. Difede's residence suffered damage but retained its roof because, he says, it is bonded down with epoxy. Hatfield's house, a Ferro cement dome, survived almost unscathed to become home to two of his workers' families, while the delivery date on the cat was put back a month. Just a month. Woe be it if they ever lose that hammer.

But how is it that Gold Coast Yachts can thrive at a time when so many boat builders are going under? Is it because these boats are designed and built to address the needs of a diverse and developing market? If so, then let's take a look at Gold Coast's designs, at how they address the market, and how that relates to wood.

Hatfield has imagineered his workboats to sail like racers, yet they don't scare mom, pop, and the kids. They're built to ultra light scantling, but can be certified by the U.S. Coast Guard for passenger service. They do not utilize a host of industrial secrets, space-age materials, mysterious assembly techniques, or high-tech tooling. As a matter of fact, the Gold Coast premise is to avoid using any tooling at all. Of course, this is not "mass" production. As Difede says, it is "semi-custom" production -- each product is conceptually similar but can be readily tailored, right down to its shape and size and fabric, to fit a specific charter operation.

"I wouldn't want to be a mass production builder today," says Difede, "because when a product is standardized, it becomes a commodity and its value drops. The inescapable result of fiberglass molding is standardization. Our approach is to offer each client a one-of-a-kind boat, but one that Roger already knows how to design, that our people already know how to build, and that I already know how to sell. It took us a few years to develop the basics, but we're past the experimental stage. Because of the varying applications of our boats, we're not likely to be faced with the need to standardize, and with the flexibility offered by this composite wood/epoxy construction, we don't have to."

Nevertheless, the materials that Gold Coast uses are mostly old standbys: Douglas-fir plywood and lumber, and Western red cedar strip planking. Everything is sheathed and coated with regular West System brand epoxy and ordinary fiberglass; no Kevlar and no carbon fibers are normally used. However, everything is laminated of small pieces of wood. Roger says, "It's the wood fiber that we want, because it's so amazingly strong for its weight and its cost. We still put boats together piece by piece, but when we get done with the epoxy, the whole sprawling catamaran is a single unit, and the wood fiber is in matrix with epoxy so it stays permanently dry. It's truly a one-piece, composite structure that's totally unlike a traditional wooden boat."

Addressing a diverse market on a production level seems to require a computer. Like the circular saw, it has become standard equipment in the modern boat shop. For instance, Gold Coast's computer whiz, Duane Branch, who was trained at The Landing School in Maine, has eliminated the drudgery of lofting on the floor. This means that Roger can easily massage the gull forms of even their "stock" models to suit the payload requirements and operating route of each client. Depending on whether the boat is to be for term charter with a few live aboard

guests or for "Cattlemaran" service with a thundering herd, or whether it is to have inboard engines with lots of tankage or just auxiliary outboards like most of their boats, or whether it is to operate in protected water or the open sea, Duane can quickly adjust the hull form to suit and calculate scantlings to satisfy Coast Guard regulations. Then, the plywood frames can be easily cut to exact size from computer-printed patterns, set up, and strip-planked in relatively short order by Gold Coast's whiz-bang crew.

Hatfield's basic hull form requires planking with narrow strips in its rounded underbody, but the topsides are flat enough to permit graduating to plans that are progressively wider all the way to the sheer; by the time the crew gets about halfway, planks 6' wide can be used, and the operation goes very fast. After fiber glassing the exteriors with unidirectional roving, the hulls are 'glassed inside, too, then righted and aligned with each other. Crossbeams made with plywood walls and lumber truss work are bonded to bulkheads already existing in the hulls; this fuses the hulls together. The platform between them, and the superstructure, are completed mostly with plywood sandwich panels having lumber I-beams in their core. Many of the non-hull fabrications are built outside the boat. Larry Harris, Gold Coast's West Indian shop foreman, explains, "That Roger, he got it aahl worked out so we just play with Tinker Toys. When tings come ready make-up, we just trim to fit, scuff sand, and bond it aahl together with goo and glahss."

Larry makes it sound simple, but the skills entailed in this type of wooden boat building are at least as advanced as, but often very different from those of traditional construction. The craftsman's challenge is to think in composite terms, and to do good work fast by making every stroke count. One observes a state of controlled mayhem at this facility. The pace is pumped by the workers pushing each other: "come on, you guys, we've got to get this deck down before lunch so we can do the other one this afternoon..." "Dad it, mon, cause we go into paint de buggah tonight!" Indeed, the crew is obliged to spray paint late at night. It takes about 100 gallons of epoxy primers and linear polyurethane paints to put the shine on a 53' cat, and their finish is excellent by workboat standards, but if painting were done during mealtimes, the vapors would gas-out the diners at a nearby restaurant. The shop is actually located in a national park, and it's likely to stay there until the government makes a space for the firm in an industrial area. Officials wouldn't think of closing down the firm, because it provides precious jobs. On the contrary, word is that the government now wishes it had managed to attract, through its tax-incentive program, about 100 small firms like Gold Coast instead of the two or three industrial behemoths which now deface the downwind side of their very real estate.

A critical aspect of designing for this modern charter boat market is sailing performance. Riding on one of these cats, any bloke from Kansas can experience waterborne sensations more exhilarating than those available even aboard the AMERICA's cup contenders. While I was visiting the GCY shop, I met one Don Kincaid, who is the operating partner with Dennis Conner in a GCY catamaran named STARS AND STRIPES (it is not the AMERICA's Cup racer, it is a Gold Coast 53). This craft operates out of Key West, Florida, along with about 10 other "cattlemarans." Kincaid said, "Key West gets about three million tourists a year. About half of those go out on the charter boats, and the bulk of them go on the cats because they want to sail

fast We commonly show our customers 15 to 20 knots. We've done 18 knots with 56 people aboard, and 24 knots with 40 aboard. On its delivery passage to Florida, one Gold Coast 65 sailed 370 miles in 24 hours. That's really sailing for a workboat, and that's what people want.

How does Hatfield design for this market? "I don't do anything that multihull designers haven't known about for years," he says, "and there's nothing in these boats that can't be built by an advanced amateur in his own back yard." Nevertheless, Roger has apparently put it all together. Of particular interest is his combination of "fat foil" rudders and daggerboards with wing masts; such masts are unprecedented on workboats. "It's the combination of these aero and hydro appendages," he says, "that makes even these utilitarian craft really perform, and with more than just raw speed.

By reputation, multihulls are known to be unweatherly and difficult to maneuver. However, their supposedly innate inability to go to windward was disproved once and for all in the controversial 1988 AMERICA's Cup races, where the little STARS AND STRIPES catamaran was seen by millions of TV viewers out-pointing and out-footing the huge single hulled NEW ZEALAND. But problems in tacking, in negotiating crowded waters, and in dockside handling still plague the more ponderous multihulls. This maneuvering problem has often been tolerated in the design of private multihull yachts, but it was seen by Hatfield as needing a complete solution for commercial vessels. He accepted that the narrow hulls of his cats are weight critical, that they must be designed with enough displacement to prevent deeply immersing their ends when carrying a full payload, for it is deeply immersed ends which restrain such narrow hulls from being turned smartly by their rudders. He then accepted that maneuvering difficulties are often caused by improper shape and size of the centerboards and rudders. Nonfoil-shaped rudders, for example, when given steep angles of attack during turns, are vulnerable to stalling, which causes their hydrodynamic efficiency to collapse suddenly when it is needed most. He knew that "fat" foils resist stalling past much higher angles of attack than thin foils, so he made his rudders and dagger boards really deep and fat. That is, they are narrow and deep and their section is relatively thick for their chord, like a killer whale's dorsal is high and thick relative to a sailfish's "sail."

Then, he combined these fat underwater appendages with the aerodynamic marvel of the rotating wing mast, a design feature normally seen only on skinned-out racing craft. Unlike most modern yachts, these vessels are mainsail-driven; rather than headsail-driven; their powerful fully battened mainsails are merely augmented by small jibs, which are easily tacked. On some of Hatfield's cats, the jib is even fitted with a club boom or with a Bierig CamberSpar, both of which afford self-tacking. With this rig, a GCY catamaran is capable of a maneuver seldom attempted with multihulls; in mild conditions it will tack from one reach to another, or even sail in continuous circles, tacking and jibing itself, without the crew tending the sheets! This indicates that when the craft is close hauled, even in a hard wind with steep waves, the helmsman can be virtually assured of ending up on the new tack whenever he wants.

Now you've got a real workboat, one that can sail up narrow waters with a big load but a small crew, dodging traffic, and belly-up to the beach or snuggle against the dock or grab the mooring, all the first time and without repercussions. This kind of handiness is often required of vessels in the Caribbean charter trade, where a blown maneuver can end in collision with a fast-moving competitor or a very stationary coral head. A final benefit of this rig is seen when motor sailing in very light airs, where the wing mast in combination with the big, battened mainsail will provide some forward drive even at very low angles of attack. This results in squeezing real thrust from the slightest zephyr by amplifying it with the increased apparent wind created by motoring at a fast idle. For chartering, this can save the operator and passengers from the ignominy of going out sailing but ending up just stink potting.

Hatfield believes that the wing mast has a positive influence on maneuverability by virtue of its ability to maintain a stable airflow at lower angles of attack, which is during the critical portion of the maneuvers when ordinary sails are luffing and their thrust is therefore turned off, and by refusing the parasitic drag caused by the usual cat's cradle of standing rig and spreaders. "Aircraft design has long since gotten away from wires and struts, and for good reason," he says. "Survival comparisons made after Hurricane Hugo taught us that the windage on our masts is significantly less than on rigs with lots of spreaders and wire. Our masts have much less chord for their thickness than is usual on wing spars, 2:1 instead of the usual 3:1, and the nose of our sections is absolutely round. Because of these differences, I believe our wings have less drag than ordinary rigs -- even when the wind is from the side! I know, it's hard to believe, but both wind-tunnel testing and examples of hurricane survival support the notion."

GCY builds their own wing masts on site. Like their catamaran hulls, the masts are strip planked in wood, but from the inside out. Douglas fir strips of only ¼" thickness are edge glued into female station formers, which are laid out clamshell fashion. The inner surface of each completed shell is faired and fiber glassed, and its full-length plywood "shear web" is installed. Then the two shells are closed and bonded together, the formers are removed, and the outer face is faired and fiber glassed. A judicious reinforcement of wood and fiberglass is used at the hounds, inside and out, to accept the loads of all shrouds and stays being attached at a single point. This concentration of rigging is necessary to permit the mast to rotate into the oncoming wind when sailing, and it is this rotation that greatly increases the efficiency of the spar/mainsail foil.

The whole arrangement is just like on a Hobie Cat, but in enormity, the mast for the GCY 53 being 65' long. A substantial portion of the wing cantilevers above the hounds, unsupported by any rigging, but its fat section, when combined with the great longitudinal strength of its fir strip construction, is quite capable of withstanding the strain. The reliability of the rig has proven excellent in commercial service on many of Gold Coast's Boats. This rig certainly would find its way into monohulls if they were wider, with enough beam available for attaching the shrouds so that they did not conflict with the sails. As is, monohull wing masts are normally freestanding, which usually requires lots of costly carbon fiber in the spar and lots of space-consuming structure in the hull. Therefore, the advantages of the inexpensive, wood/composite, rotating

wing mast, with its streamlined three-wire rig and its quantum improvement in maneuverability and speed, are all features most applicable to multihulls.

So, that's why these boats maneuver smartly and sail fast, as they must in order to satisfy this market. But, what about the market itself? Why is chartering in general, and multihull chartering in particular, on the increase?

"Not everybody can have their own Tivoli Gardens," answers Hatfield. "To enjoy some of the finer things in life, you've got to go to the park." What he's saying is this: It's not possible for everyone who wants to experience truly contemporary sailing to own a big, modern catamaran. Owning a significant yacht of any kind these days is fraught with new costs and complications, to the extent that fewer people are buying or building their own. Yet it is a marketing paradox that more and more people seek access to exciting, water-oriented recreation. Many charter operators offer diverse activities, such as sailing combined with diving, windsurfing, fishing, and stopovers; most GCY boats are even equipped with underwater windows. Experience is showing that the vehicle of choice for such diversified excursions is often a multihull -- catamaran or trimaran.

A survey of sailing multihull charter boats would include everything from Dick Newick's original TRINE, a 36' plywood trimaran that has been sailing excursions in the Virgins continually since 1956, to the 100' catamaran recently proposed by Rudy Choy, designed to carry 100 passengers inter-island in Hawaii at 40 knots. These two venerated multihull pioneers, Newick and Choy, privately initiated multihull day-chartering in two locations where it now thrives: Newick in the U.S. Virgin Islands and Choy in Hawaii.

Conversely, in the French West Indies, government has profoundly influenced chartering. In order to relieve taxpayers in France from having to keep the Indies financially afloat, tax incentives were enacted to give investors impetus to bankroll an explosive tourist development in the French islands, and this has given multihull chartering a tremendous boost there. Most of the boats are French-designed and built. But Gold Coast Yachts has developed independently of all that. Most of their boats operate in U.S. waters where they must submit to strict Coast Guard scrutiny. A successful charter operation depends a lot on marketing the service as entertainment, on location, and on finding a booking agent who doesn't skim off all the profit in exchange for filling up your boat. But the boats can indeed fill up, sometimes several times a day, and the earning power of some operations is legendary.

But, why multihulls, really? Is it performance alone that makes them pay? No, it's also space and motion. The bridge deck of a big cat is more like a pavilion than a tunnel. Passengers flock aboard the multihulls because they want, and they get, cocktail-lounge comfort and dance-floor spaciousness together with sailing thrills. Of course, there is a portion of the public that prefers tradition to speed; tall ships and windjammers still have wide shellback appeal. But another segment of the market, the one most likely to grow, is composed of people expecting more for their recreation dollars than the common, plodding bake-outs and the scary, tipsy soakings

perceived to be typical of monohull sailboat rides. It's a matter of nautical nostalgia versus modern fun in the sun. "I realize," says Hatfield "that for many people, the choice between monohull and multihull is an emotional choice, but we're talking business here. I get seasick, so passenger comfort is a high priority in our boats."

Indeed, the subliminal barrier of seasickness now imposed on the entire boating industry, especially chartering, is probably more constraining than any other influence. Multihulls address this constraint in this way: The primary difference between a monohull and a multihull is not in the number of hulls, but in the relative narrowness of the individual hulls. As a rule, the narrower a boat, the smoother the ride, except that narrow monohulls roll and heel. The inescapable business choice for charter boats is for the longer, skinnier, but still more stable multihulls. "And, says Hatfield, it just happens that long, skinny hulls are much easier to drive through the water at speed. If multihulls were just more comfortable, there wouldn't be nearly as many of them around as there are, or as there are going to be."

But what about safety, the area where multihulls have been most controversial? Well, word has it that insurance rates for charter multihulls are becoming attractive relative to those for monohulls. The underwriters are receiving fewer large claims for the multis, partly because passengers are less likely to slip and fall, and also because these craft can sustain grounding, fire, collision, and even shipwreck without ending up a total loss. Why is that? Because they are built of buoyant materials and carry no ballast, so they cannot sink. When completely scuttled they can float high enough to obviate the need for passengers to enter lifeboats, and when cast ashore by breakers they can be deposited, with crew still aboard, above the surf line. In short, they just don't go away. They can capsize, but designer Gary Hoyt, who originated the famous FREEDOM series of monohulls, has said, "The danger of tipping over a modern cruising catamaran or tri is no greater than that of tipping over your family car." And, if I may add, the aftermath of capsize is much preferred to the aftermath of sinking.

Still, the mono/multi controversy will rage on. From my own 35-year involvement with multihulls, I've learned that the prospect of the yachting community truly embracing them is about as likely as a sushi franchise crowding out McDonalds. There may be impressive bursts of multihull popularity, such as in beach cats and trailer-able weekenders, and the stunt races will persist, but the yachting community cannot help but view them as culturally alien. Multihulls were the first real seafaring vessels known to mankind, and so can be rightly called "traditional," but their concept as Asiatic. East is not West, and never the twain – except when it comes to money! The real strength of this phenomenon is in commercial vessels, both power and sail, so it comes down to money, and to energy and efficiency.

Rich Difede, who is the business man of the GCY tea, speaks of efficiency in two contexts: "Roger and I aren't happy unless our cats will sail to windward at 14 knots in a Caribbean seaway and still keep the passengers dry and happy -- and why not? After all, wind is free. But fossil fuels are not, so in our new line of catamaran powerboats, speed is not the issue.



Efficiency is the issue. How much does speed cost? How much, in terms of initial investment, operating expense, and passenger comfort does it cost to go fast?"

This question applies to all of Gold Coast's boats, but it is especially pertinent when applied to the highly energy-sensitive, cost-competitive realm of commercial passenger ferries, a field which has great potential for growth because the world's harbor cities are becoming increasingly gridlocked, and municipalities are hard pressed to fund the construction of massive new infrastructures like tunnels and bridges. All over the world, more people are taking to the water not just to play, but also to get to work.

GCY has entered the commuter ferry field with an extremely inventive, visually startling, yet relatively low-tech configuration which Hatfield calls his "Wave Piercer." Like certain other modern ferries, this one is designed to avoid the need of going over the crests of waves by piercing through them, instead. Again, passenger comfort is a big factor, and the Gold Coast design goal is not pure speed, but pure efficiency. Difede concludes, "I think ferry operators will be attracted to our Wave Piercer. It has at least adequate speed, but more important, it has the smoothest ride for the best speed for the least cost -- and that's in all three columns on the ledger: initial investment, long-term maintenance, and fuel consumption.

I found Gold Coast's first prototype Wave Piercer, the 39' WATER TAXI, very strange looking. I was not alone in this reaction -- during sea trials, I noted that the craft was met with many doubting double takes. Allowing that the appearance of purely commercial vessels is often awesomely functional, nevertheless this, this...animal, sitting at the dock, looks like some prehistoric creature in a state of indisposed repose -- say, a giant bat hanging upside down asleep. But when it comes awake, it takes off through a steep chop with 18 passengers at 18 knots dead level and bone dry, and is propelled by nothing more than a pair of measly 100-hp outboards."

The owner-operator of the first prototype GCY Wave Piercer, Mr. Per Dohm, has two generations of experience running passengers for St. Thomas to St. John, high islands which throw a tight, 5-mile-wide venturi across the Caribbean tradewind. Dohm has operated several ordinary small ferries and one conventional power catamaran, and he's delighted with the new craft. As we headed out for trials, he explained, "The seaway in this strait refracts between the islands and builds up. Sometimes it's like speed bumps on a road that's also scattered with potholes. But this boat is so smooth and quiet that my passengers don't realize how fast we're going, and the hulls are so easily driven that I occasionally make the run on just one motor. Even with a full load of passengers and both motors running, the fuel consumption is less than a gallon per mile."

To achieve this efficiency, Hatfield has designed a deceptively simple, if bizarre looking, configuration. Compared with hydrofoils, air-support craft, and SWATH vessels, this concept features just two straightforward hulls, with no articulating appendages or accessory power requirements for the likes of blowers and hydraulics. Hatfield distinguishes his concept from like-

sounding predecessors by explaining, "Some other fast catamaran ferries do indeed have hulls which pierce waves, but they just don't pierce them soon enough, and that's what makes it necessary for some of them to include a third, central bow. As you can see, the forward cantilever of our hulls, ahead of the vessel's center of gravity, is far longer than in other wave-piercing configurations. It's long enough to announce oncoming waves in plenty of time so that the addition of a third, central bow, which serves only to rescue the craft when it dives into steep seas, is just not necessary." What Roger didn't say is that diving into steep seas caused decelerations that cause seasickness, the bane of many fast ferries.

A romping ride in this extraordinary boat revealed that, like many high-performance sea craft, it is most efficient when operated within a specific performance envelope. The variables of Sea State and payload must be carefully considered when deciding how fast to make a given run. Its riding motion, when lightly loaded and operated at less-than-piercing speed, seemed no better than that of a good conventional craft its size, but this disappointment was easily overcome by opening the throttles. Yes, rough-water motion actually improved with speed! Of course, there is a limit to speed, but that limit was encountered at velocities and sea state that would long since have broken an ordinary boat.

I'm sure it's possible to break a Wave Piercer, too, if that's the aim, but on my trial I never experienced the spine-jarring slams typical of planing multihulls. Crosswind turns were performed without rhythmic rolling, downwind steering was crisp, and dockside maneuvering, with the two widely spaced propellers, was positive despite the long, cantilevered bows. Another phenomenon observed was the lack of deceleration when those long bows impaled the waves. Seeing half the boat underwater up ahead was certainly different, but it soon became apparent that these bows can pierce upwards through the surface just as easily as downwards -- they always climbed out. More surprising was this: The submerged bows didn't make bow waves; at least, the bow waves seemed unreasonably small, and they parted from the vessel somewhat farther aft than usual. Resistance seemed actually to decrease when the hulls began to operate not as submarines, but as very long, streamlined "bulbous bows," which are those sub-surface protuberances seen lurking just below the cutwaters of modern-day big ships and are so important to reducing wave drag. Hatfield's unique geometry is the subject of a current patent application.

Yes, the prototype GCY Wave Piercers are built of wood/epoxy. In these developmental designs, the ease of making changes during and after construction, and between prototypes, means greater design flexibility for both the designer and the client, and the degree of success or failure can be determined rapidly for a minimum investment. Polished molds are just not needed to produce even these futuristic craft. In fact, the hulls of the Gold Coast power cats are built just like the wing masts on their sail boats -- strip-planked in female clamshell formers. The bridge and superstructure are sheet plywood, requiring the same medium-tech skills and materials already familiar to the Gold Coast crew.

Who knows? The Wave Piercers might even take off in the pleasure market, for uses like dive boats and sport fishermen. Certainly they have a sufficiently odd appearance to start a cultist fad. But unlike the useless tail fins on a '57 Caddie, these protuberances really do something!

So, what's the big picture? How, really, does a phenomenon like Gold Coast Yachts integrate with wooden boat building in general? I'll try to summarize: First, wood/epoxy can lead to surprising productivity from a trained boat building crew, and productivity, of course, when combined with an expanding market, results in the rapid feedback of information to the designer from boats quickly built and put into service -- especially when that service is daily and commercial. This feedback helps the designer expand and refine a library of computer drawings, which are easily massaged on-disc to satisfy a disparate clientele. Customized but production built boats are priced without having to amortize costly tooling. Today's customers often want boats that are not available from standard molds, and designers know that the cost conscious alternative is wood/epoxy composite. It's like, integrated, mon!

Okay, that's enough objectivity about GCY. Let's try now to address the subjective aspects of their boats, their "feel." Imagine, eyes closed if it helps, the sound, and even the taste and the smell, but especially the gait, of some heretofore-unridden mount. Let's say this beast has evolved to live its life at speed where no living creature now lives at speed -- at the interface between water and wind. Consider that these two fluids, one of which is some 600 times more dense than the other, vigorously slide against each other on oblique and swirling courses of their own, and in so doing generate fantastic, patterned undulations at the stratum where they scrub. It is at this stratum while immersed in both fluids, that our mount soars. With her lean, twin torsos, what a piece of work she is, what a difficult, exciting life she lives!

Now, imagine a human being, you perhaps, perched upon the muscled arch that joins her as a Siamese Gemini. She rapidly negotiates the interface, plunging through the undulating pattern from one fluid to the next, both flying and swimming, as you ride!

All right. Now, knock on her, yes, with your knuckles. Note the lucky sound, and the surprising sense that this critter is mostly made of wood.

It's okay to open your eyes now. What do you see?

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*Multihull pioneer Jim Brown designs, builds, and writes about boats.*

Jim Brown, "Gold Coast Yachts and the Siamese Gemini,"  
*Wooden Boat Magazine*, No. 110, January/February 1993, p. 54-65.