

Redefining Cruising Speed

By Gary Hoyt

The growing acceptance of multihulls as a new sailing solution seems to divide itself into two basic groups:

1. Those catamarans and trimarans which use the multihull configuration to achieve greater speed with minimal cruising space and comfort, and
2. Those catamarans and trimarans which use the multihull configuration to achieve greater cruising space and comfort, with speed that are marginally better and sometimes worse than equivalently sized monohulls.

In terms of commercial success, the latter group is clearly out in front, a fact confirmed by the large number of catamaran orders from charter companies. This is not surprising because the cruising sailor has never put speed at the top of his/her list. As long as speed and comfort are an either/or choice, comfort is likely to win – and speed lose – on the cruising front, the area that represents the most sales for multihulls. Still, let it be said that these charter cruising catamarans have truly triumphed in the design of new cruising comfort.

But now some new multihull designs are proving that speed and comfort need not be mutually exclusive. Conversations and correspondence with Roger Hatfield, designer and one of the operating partners of Gold Coast Yachts in St. Croix, U.S.V.I., reveal that this group is now producing what is arguably the fastest motor-sailor in the world – a 55-foot charter catamaran designed for the rough waters of the Hawaiian Islands. What's more, the boat, *The Spirit of Kauai*, had to be delivered to Hawaii on its own bottom, which is about as thorough a sea trial as one could devise.

Delivery Captain Randy West reported that the cat's top speed under power (twin Cummins 220 h.p. diesels) was 24 knots. Sailing with a spinnaker in 20 to 25 knots with the 23-inch fixed-blade props free wheeling (in neutral), the boat hit 25 knots, and the average speed for the entire trip was 11.5 knots, which is eminently respectable. "We could sail as fast as we motored, and motor as fast as we sailed," noted West, "and consequently we could set and meet a schedule regardless of whether the wind blew or not." That's pretty heady stuff – the kind of speed performance most cruisers never get to experience.

Fuel consumption aboard *The Spirit of Kauai* on this transpacific trip was another interesting item. "At top speed (2800 rpm) with the fuel tanks topped up (400 gallons), the range was 480 nautical miles. By throttling back to 12 or 14 knots, (1600 rpm), the range increased to 650 n.m. At 10 knots (or 1200 rpm), our range grew to 800 n.m., and motor sailing at 10 knots with rps at 900 (usually only one engine at a time and free-wheeling the unused prop), the range increased

to 1000 n.m." Those are very impressive numbers. By the way, I am glad to see West confirm what I have always suspected – that freewheeling props are faster than fixed props.

But there's more. This catamaran is designed to be a day charter, USCG approved and licensed to carry 49 passengers. With a full load of 49 people aboard, the boat cruises comfortably at 20 knots. "On a typical windy Hawaiian day we could sail most of the trip at 15 to 18 knots," the new skipper reports. "The boat has plenty of power for running the entrances to the harbors of Kauai, which can get quite tricky with huge waves during the summer. We can place the boat between swells and exit or enter the inlets quite comfortably."

Being driven by the practicalities of commercial charter needs, Hatfield's designs have steadily evolved to be both easy to build and easy to operate. Gold Coast employs composite construction – hulls are cedar-strip-planked and sandwiched between unidirectional glass and West System epoxy – built over frames, while masts are laid up in two half molds. Along the way, Hatfield has solved some of the old catamaran bugaboos about maneuverability, and severe speed decrease when heavily loaded. It used to be that catamarans were hard to dock and reluctant to tack. No more. These Gold Coast charter cats tack from one reach to another, and an engine in each hull allows them to spin in place under power.

Better use of the new foils, in the air and in the water, seems to be one key to the new ability of these catamarans to combine speed and maneuverability with load-carrying capacity. The rotating wing mast unleashes the full power of the main and gives efficient drive even at very low wind speeds simply because it doesn't destroy air flow right at the leading edge. This is a lesson that so-called high-tech monohulls have been slow to learn, and it's one of the things that keep them slow. In the water, Hatfield uses "fat foils" for rudders and dagger boards. Fat foils are not the optimum shape for top speed, but they resist stalling and thus stay operative at the sharp rudder angles needed to steer two narrow hulls around. The point is that charter boats can not sacrifice maneuverability for speed – but through experimentation they've found ways to get both.

So let's reassess. Can you think of any lead-based monohull of 55 feet (or 85 feet) that can sail and power 24 knots? Can you think of any 55-foot monohull that can comfortably carry 49 passengers, run big wave inlets, anchor close to the beach, and never heel enough to unnerve the passengers or slow down the boat? The fact is that modern multihulls have staked out irrefutable performance superiority claims on every front except that of common acceptance, and easy docking at marinas. The latter will be solved by new or restructured marinas – the former is a mind-set that defies logical analysis. Ever since the New York YC banned the Herreshoff catamaran *Amaryllis* back in 1876 for having the presumption to beat the pants off all the monohulls, multihulls have had to survive in virtual exile. That's 118 years in the doghouse for the high crime of sailing faster. It's time we let the blinders fall from our eyes and give the multihulls the full respectability that has been so long, and so unreasonably withheld.

It's great to see the seminal work of Rudy Choy and Jim Brown paying off in this new breed of cats. And the very sensible and seaworthy big-boat handicraft of Gold Coast Yachts deserves attention. Those interested in all manner of multihull solutions can contact Gold Coast Yachts in St. Croix at (340) 778-1004.

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