



Billy Black photos

# Balance 451

## ... Hits Her Stride in Florida

*By Rick White – Photos: DR*

As anyone who has raced beach cats knows, Phil Berman, who co-designed the Balance 451, is a Hobie Cat World Champion and one of the most prolific writers on the sport. Over the past thirty years he has been involved in the sale of hundreds of cruising catamarans through his catamaran brokerage firm, The Multihull Company. When I learned Berman had decided to design and build his own catamaran brand, I was curious to see what he came up with due to his extensive experience in the industry.

I therefore drove from my home in the Florida Keys to inspect the Balance 451 at the Miami Boat Show in February and later sailed hull#3 in Fort Lauderdale this past April.

Immediately upon seeing this catamaran you recognize how truly new and innovative she is, both in design

and appearance. The 451's sleek sterns and strongly forward-raked bows give her an aggressive, sports-car like appearance. And her dual dagger-boards, seven foot carbon bowsprit and screecher make it clear this catamaran means business under sail.

According to their website, Phillip Berman and Kiwi Architect Roger Hill set about designing the Balance 451 to achieve the following five objectives: (1) To design a catamaran that would easily average speeds in the 9 to 11 knot range even when well laden with cruising payloads; (2) To create an open and inviting interior that would offer excellent sleeping spaces, high end cabinetry, and a galley-up design that would allow for serious meal preparation; (3) To make the boat easily single-handed; (4) To

engineer and construct the boat for serious blue water voyaging, even in the Southern Ocean where so many of co-designer Roger Hill's customers often sail, and finally; (5) To design a boat with simple systems to operate and maintain.

Has the Balance 451 achieved these objectives?



*During our test, the Balance showed some real potential under sail.*

### **FIBERGLASS BUILD MATERIALS AND QUALITY**

During the Miami Boat Show I had the pleasure of meeting Lee Xinxiang, the chief builder of the Balance 451, who had flown over from China. It was Lee's first trip to America. He is a soft spoken, studious man, who has spent his entire working life in the boat building industry. He speaks very good English as well.

As Lee explained the Balance 451 is built in Guandong City, South China, about an hour's ferry ride from Hong Kong. Lee jointly owns the 5,500 square foot factory, Startown Marine, with Micah Zimmerman, an American businessman who has lived and operated a range of businesses in China for the past fifteen years. Zimmerman is a passionate sailor who began sailing on Corsair trimarans in the China Sea. Lee was trained in yacht and ship building engineering at Huazhong University of Science and Technology. He has advanced training in Rhino and Autocad and CNC operations and is fluent in Chinese and English. He is clearly one of China's foremost toolmakers and was involved in many of China's most impressive sailboat builds, including the Dubois designed Clipper Round-the-World yachts, where he served as Quality Control Manager. His experience in the industry is extensive.

According to Lee the 451 hulls are built in female tooling that comprises two large tools - one is a monocoque tool of the entire hulls and under-bridge, and the other is the deck and coach house tool. He is using Ashland gelcoat, E-glass glass and all vinylester resin in his builds. He uses Divinicell foam core for the hulls and decks, and his bulkheads are also made with foam core Divinicell. Lee explained to me that he is also using carbon fiber extensively in high load areas of the hulls and decks. He is currently building his daggerboards in all carbon fiber as well his bowsprit and davits.

The hulls are laid up using the resin infusion process, while many of the deck parts are done in traditional wet bag technique. As Lee explained, "We build as light and strong a boat as we can without sacrificing strength." Roger Hill engineered the 451 to achieve ABS Offshore Racing engineering standards and to exceed ISO standards. Zimmerman told me over emails that he is, "Confident no builder of a production, female tooled catamaran today could build lighter fiberglass parts than us unless they are doing so at a significant sacrifice to strength."

Judging by the workmanship I examined the tooling of the 451 is first class in every respect. The decks felt rock solid, the hatches were robust and strong, and the quality of the gelcoat and non-skid superb. One thing I noted is that all of the deck hatches are recessed flush with the decks using the new



*With its inverted bows and daggerboards, the Balance 451 is clearly positioning itself in the family of sporty cruising catamarans.*



*The cockpit has a folding table around which all your friends can comfortably sit.*

Lewmar flush deck hatches. The look and functionality of these deck hatches is outstanding. The tall stanchions were robust and the quality of stainless parts very high.

The mast for the 451 was designed collectively by Roger Hill, Phil Berman and Selden Spars. They decided to use a single spreader rig with one set of diamond wires and a single set of lower shrouds. As Scott Alexander from Selden Spars explained, "Berman and Hill wanted the rig to be clean and have as few terminals as possible for safety and the ease of replacing the standing rig when necessary." All of the other fittings on deck are top of the range materials. The sails were co-designed by Berman and Bob Pattison of Neil Pryde Sails. The boat that I test sailed had a spitfire radical cut main and jib. Pattison said they can do the mainsail in a fathead design for those that want it, but felt that cruising sailors were "better off with an easier to operate and more durable spitfire head."

### **INTERIOR FINISH AND CABINETRY**

As Lee explained to me at the show, "Guandong is the heart of the furniture making business in all of China, if not the world. All of our furniture is made at the same factories that produce for the finest hotels in the world. They do cored doors and cabinets for yachts that are fantastic."

The evidence of the cabinetry quality is all over the boat. I counted over 84 stainless latches on the many drawers and cabinets in the boat, all of which Lee explained are honeycomb core with hand finished varnish. This, clearly, is where a boat builder in China has a peerless advantage over builders in Europe or North America. They can lavish hundreds of additional hours on cabinetry and interior finish without significantly adding to the cost of the boat.

The boat I inspected had a high gloss finish Cherry wood interior and the doors shown like polished glass. It was explained to me that the buyers of a 451 can chose the finish of his woodwork (satin, flat, or gloss) as well as the choice of wood.



*There is a warm atmosphere on board.*



*The forward cabins are set athwartships, enabling the hulls to be kept nice and narrow.*

### **DESIGN AND ENGINEERING**

Zimmerman explained that The Balance 451 is more or less the evolution of Roger Hill's many catamaran designs, most of which were built custom in New Zealand and Australia. The Balance 451 was based on the platform of a Hill design that was popular in Australia, called the Montebello. The 451 was the merger of Roger's design with Phil Berman's customer feedback input. Berman redid the interior design and layout, designed the owner version, and Roger and Berman made her longer and faster, redid the rigging and line handling ergonomics, and worked closely with Selden Spars and Neil Pryde sails to make the 451 a serious performer that could be easily single-handed.

### **ACCOMMODATIONS**

The 451 comes in three interior configurations. A three cabin owner version with an office and single berth aft on the port side, a three cabin version with three queen suites, and a four cabin layout with two or three heads. So far all of the boats sold have been owner versions.

In order to sustain the hull fineness required to sail at high speeds, Hill elected to turn the queen berths forward over the bridge, creating landings so sleepers can get off either side of the bed. He wanted the berths to be heavily ventilated with forward hatches and to have enough headroom for reading and sitting up at night. I must say they are spacious and easy to get in and out of.

The galley is a good size, if not massive, and focuses out onto the cockpit with large opening doors so that the interior spaces connect nicely with the exterior spaces. The semi-circular seating outside is inventive and the sculptured cushions I sat on were very comfortable. The overall feeling inside and out, at least on this cherry wood version, was open, light and inviting.

### **UNIQUE FEATURES**

One of the features on the boat that intrigued me was the combination of dual dagger-boards combined with small mini keels. As Roger explains, "The dagger-boards are lifted up above the mini keels in shallow water for protection and the mini keels protect both the sail-drive and the rudders and allow the boat to be beached." Total performance sailors might not want the little mini keels, but for anyone who has ever experienced a broken dagger-board or needed to beach a catamaran, these small keels have great appeal for shallow water sailors. Also, a cat such as this can rest on the bottom at low tides without having to worry about hull damage.

I learned from Zimmerman that they are happy to build the boat without the keels for those that want this, but he cautions that he, Berman, and Hill believe it is a poor tradeoff for those who are voyaging.

The helm station is a traditional bulkhead design to starboard with a hard top bimini. Hill elected to bring the jib sheets, halyards and reefing lines to an electric winch aft of the helm station. In some respects the design is similar to that of the Catana, with all of the line handling done at the aft end of the cockpit in a dedicated work area at hip level for proper winch operation, line tailing and storage. It really wasn't until I went for a test sail that I saw how easy it was to manage the lines on the 451.

Several layouts options are offered by the yard, but all with the same attention to detail and level of comfort, such as here in the bathroom which doesn't feel cramped.



A cruising boat, the Balance 451 has loads of lockers and lots of stowage. Neat!



### HOW DOES SHE SAIL?

The winds were blowing consistently between 14 and 18 knots from the South to South West as we sailed South from Fort Lauderdale. The motion of the boat as we powered out to sea was smooth and when we hit the rougher ocean swells we experienced a few little slaps but nothing persistent or jarring.

Phil Berman was on board as skipper and he immediately raised the main and rolled out the screecher that is attached to the 7 foot carbon bowsprit. Wow! Talk about acceleration. Soon enough we were cruising along between 11 to 13 knots and then as we headed out a bit further into the Gulf Stream we started to encounter some waves. Berman took her out about 3 miles offshore and then jibed back toward the coast and soon enough we were sailing in the 13 to 15 knot range when surfing. The helm was balanced and easy and sailing the boat in those conditions was surprisingly easy.

Heading back North, against the wind and current, Berman rolled in the screecher and unfurled the self-tending blade jib. Upwind we were sailing consistently in the 8.5 to 9 knot range at about 34 degrees apparent, or about 43 to 44 degrees to the true wind. Berman explai-

ned to me that he wanted people to be able to sail the boat themselves, so he elected to use a two part mainsheet system without a traveler. By centering the mainsail upwind without sheeting in too tight, tacking the boat was a simple matter of turning over the helm as the jib and mainsail took care of themselves. Berman handed me the helm and said, "You try it." I just turned the helm over about 3/4 and she came right through the wind, the jib slid over, I reduced the rudder angle a bit and off we went.

As we headed back to Fort Lauderdale the winds began to subside a bit, falling into the 10 to 12 knot range. Our upwind speed with the blade jib dropped to about 7.2 to 7.6 knots. But as we headed into the channel Berman rolled out the screecher again. Sailing at 65% degrees apparent we were up to 9 to 10 knots again in 12 knots of wind.

### PRICE AND VALUE

The base price for a Balance 451 is \$525,000 as of April 2015. For that price the boat comes with some very nice equipment. That said, like all builders these days, it is the case that to get a truly well-equipped boat for cruising, proper electronics, air conditioning, generator, solar panels, bimini, etc., the Balance 451 ends up around \$575,000 to \$660,000 FOB Hong Kong.



#### TECHNICAL SPECIFICATIONS

|                                     |
|-------------------------------------|
| Builder: Startown Marine            |
| Naval architect: Roger Hill         |
| Length: 13.605 m                    |
| Beam: 7.11 m                        |
| Draft: 0.80/2.10 m                  |
| Light displacement: 8.39 t          |
| Laden displacement: 9.9 t           |
| Air draft: 19.19 m                  |
| Mainsail area: 65.63 m <sup>2</sup> |
| Jib: 24.22 m <sup>2</sup>           |
| Screecher: 66.1 m <sup>2</sup>      |
| Spi: 127 m <sup>2</sup>             |
| Fresh water: 600 l                  |
| Fuel: 300 l                         |
| Motors: Yanmar 2 x 29 hp            |
| Price: US\$525,600 ex-tax           |

## THE COMPETITION

| Model                              | S2C45     | O' Yacht CL4 | Outremer 45       | Dazcat 1495 | Neel 45  | Catana 47 |
|------------------------------------|-----------|--------------|-------------------|-------------|----------|-----------|
| Builder                            | Swiss Cat | O'Yachts     | Outremer Yachting | Multimarine | Neel     | Catana    |
| Weight in tonnes                   | 10.5      | 7.6          | 8.7               | 6.5         | 6.5      | 10.9      |
| Upwind sail area in m <sup>2</sup> | 122       | 124          | 110               | 120         | 106      | 139       |
| Basic price ex-tax                 | €770,600  | €590,000     | €469,500          | €744,000    | €450,000 | €609,700  |