

TEST

Text: Gwen Dorning

Photos: by the author and FFC



With an upwind sail-area to displacement ratio of 29 m²/t - compared to 10 for most standard cruising catamarans - the EC53 is definitely performance-oriented.

EAGLE CLASS 53



COMFORT, YES... BUT WITH THRILLS GUARANTEED!

This is not a regular multihull, nor is it a regular yard. The Eagle Class 53 is really one of a kind. Born from the combination of great minds and extremely high-tech systems, with automated foils and semi-rigid wing, this cutting-edge, high performance catamaran absolutely delivers its promises.

A new star is born

The yard, Fast Forward Composites, was established in 2015, in Bristol, Rhode Island, USA. The men behind the project are not businessmen, they are visionaries. And this is where it gets interesting. The concept was simple and straightforward: build a catamaran that would basically be a cross between a Ferrari and a Royce Rolls – Fast, luxurious and simple, but mostly fast!

The team originates from different backgrounds but shares a tremendous amount of passion for racing and innovation. There were a few require-

ments in order to appeal to the right sailor; speed, of course, but also being able to welcome family and friends. If all you need is the thrill of the seeing the knots going up on the GPS, then a full-on racing boat would do the trick. However, this is not the point here. The owner needs to be able to take his entire family and enjoy a weekend aboard with enough comfort that everyone wants to come back next time.

This is where the real work began. Finding a balanced compromise between luxury and the power of this new catamaran was the ultimate

goal. Tommy Gonzales, one of the brains behind the boat but also president of FFC, gave us an overview of the specifications drafted by the future owner who was "looking for thrills, but with style and comfort".

Local and even centralized build

The EC53 is a "Made in Bristol, RI" product, from bow to stern. All the components were built by Fast Forward Composites and the boat was launched in November 2018, then shipped to Fort Lauderdale, FL to finish assembling everything

(the yard is currently expanding an assembly area in the back of the facilities in order to be able to finish assembly in-house). The Bristol-based FFC factory, recently renovated, is about 30,000 sq ft. It's equipped with the most advanced machinery and infrastructure – including but not limited to a curing oven (75'x30'), CMS Poseidon 50/75 and ARES CMS 4628 5-axis router, large panel carbon laminating tables (30'x10'). The factory is actually rated AS 9100, which is the highest rating of quality management system for the aerospace industry. I was a little shocked when Tommy told me that there were only 15 people working at the facility. But he also reminded me that, although the place was big, ultimately the parts they build are also big.

The custom carbon fiber molds used for the EC53 are owned by FFC and will most certainly give birth to more siblings to this impressive boat.

All the composite elements are built in this large-scale facility, using high-precision 5-Axis mills, autoclaves and large curing ovens. The precision of the CNC cutting produces impeccable edges but also greatly decreases the amount of material waste. Only a couple of parts were too large to be built in-house. Luckily, their neighbor just happens to own an even bigger CNC machine, which made the logistics very easy.

Respect for the environment

One thing that struck me during our visit to the factory; the size of the garbage bins. For a full 30,000 sq ft facility, they use 2 garbage bins, including one for recycling only, and the most impressive part is that they only get collected twice a month. No need to say that FFC is not only thinking about



This forward view is a good illustration of the extreme simplicity of this catamaran, stripped of her coachroof.

the high quality of their product but also limiting their impact on the environment. As Tommy said, "all of us on the team have kids and we are trying to leave them a world that's not completely destroyed".

This very limited amount of garbage is the result of a long-held recycling habit. For example, shipping crates are recycled into storage shelves in the facility, other wooden structures turn into tool benches, every bit of unused composite is saved until they find the right fit for another building project, etc. Proof that it is possible after all, on smaller but also on larger scales. If the sink in the factory's bathroom is made from carbon fiber,

that's because it's made out of left-over components. There's no place for waste at FFC.

High-tech at every step

Tommy Gonzales speaks about the new technology used for the EC53: "You can compare it to bicycles; we used to have only 10 gears on our bikes when we grew up. Now they offer bikes with up to 18 gears. Although you know how to ride a bike, you still need to go back to basics and learn to handle



The twin helm stations, which are set well forward, free up the cockpit and offer a totally unobstructed view of the water and the sails.



The hybrid mainsail consists of a fixed wing attached to the mast and a sailcloth section for the relevant weather. An attractive but demanding process in terms of sail handling.

"THE EAGLE CLASS IS ABOUT THRILL SEEKING, PERFORMANCE, AND STYLE... BUT NOT FORGETTING COMFORT"

this new technology and adjust to the new abilities of your ride. This is why we're being extra cautious with this boat and what she can do. The new foiling technology deserves to be respected and its power to be mastered. She can fly. We just want to be the ones telling her when and how to, and not the other way around."

This is why the foiling system on this boat is entirely automated. Most of the accidents with large foiling cats happen while being trimmed manually. Human error basically. For the EC53, the software of the autonomous foiling system was designed and installed by Portuguese designer/engineer Renato Caldas, who was on the test sail with us. This technology is precise, and its development requires a full understanding of the foils and wing dynamic. This control system basically stabilizes the dynamic of the platform thanks to electronic sensors that send feedback directly to the foils. This allows the use of high-performance – and therefore potentially unstable - T-foils, without compromising safety. The crew can then focus on driving the boat and handling the sails and the hybrid wing.

This hybrid wing is a revolutionary part; developed by FFC as well, it is made of two sections: a lightweight carbon fiber wing (capable of rotating 360 degrees) and a battened mainsail in order to be able to control the sail plan better and take in a reef in case of stronger winds. FFC owns the patent. The builder is proud to be, once again, at the top of innovation. The wing is covered in Oratex aviation fabric, which is a non-toxic, environmentally friendly system

that offers a long-lasting solution for the hybrid wing.

A catamaran designed to fly

The test sail was scheduled for mid-July, in Bristol RI, which should have offered perfect sailing conditions. However, the forecast was giving only 2 knots of wind, and rain for that day... not ideal for a high-performance catamaran like her. At least, that's what we thought.

We set sail at around 1pm, in light rain and about 3 knots of wind. As we went down the Providence river, heading towards the ocean, the sun came out and the wind ever-so slightly picked up to 5 knots. Sure enough, once the screecher was up and the mainsail attached to the wing, she was already making good speed. With our 5 knots of true wind coming at 35° to our port side, she was smoothly sailing at 9 knots over the ground. A couple of gusts at 10 knots on a beam reach saw us pick up the pace: we enjoyed some fast acceleration up to 15 knots. Flattering and invigorating performance, but smooth and gentle. You can obviously feel the power of this racing beast. The port hull gently lifted its bow for a few minutes, but without upsetting the balance of the boat. We switched the code zero for the Solent as the wind veered and we tacked a few times in the Narragansett Bay. The steering wheels, made out of carbon fiber, are very responsive, with a soft touch and the ability to jump from one side to the other is incredibly convenient to keep a perfect angle of view whichever tack you're sailing on.



Why wouldn't the cockpit of a racing catamaran be convivial?

There's no doubt that the balance of this platform is incomparable. With the sails correctly trimmed, there is absolutely no weather helm, and the weight being completely centralized (engines, mast, crew) means there's nothing to make the boat want to luff or hinder performance in any way: you could let go of the wheel... the Eagle Class holds her course to the degree.

Even though the weather conditions were pretty light that day, the crew of the EC53 assure us they've seen her up to 30+ knots in sportier conditions – which I entirely believe after seeing what she was capable of in only 6-10 knots of wind. She is made for an exciting time of the water, there is no doubt about it.

A word from **Tommy Gonzales,** CEO of FFC



"The owner really wanted us to take her to the Caribbean for Christmas, and therefore before it was fully completed, which we did. This was actually the perfect sailing grounds to test her out once the last details were sorted. All of us, including the most experienced ones, learned a lot from this boat while on the water. New sensations, new reactions, new speeds.... But all in all, we want to make sure that we keep it safe, this is what our entire team is aiming for; thrills with style and the security of bringing her back in one piece".

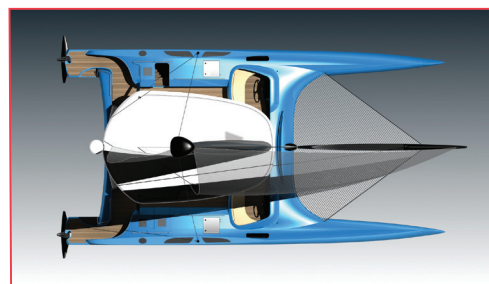
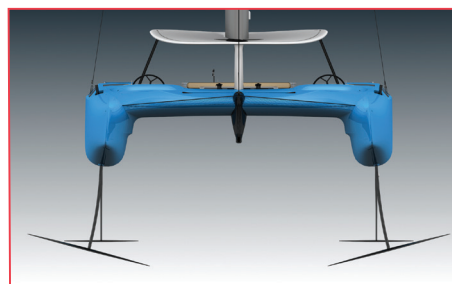
The yard has managed to house a double berth in each hull as well as a large bathroom.



Living space – Open but inclusive

The sailing platform that Fast Forward Composites offers with this innovative catamaran is innovative and modern: she embraces conviviality without losing sight of the ergonomics required for racing. The cockpit is entirely open, with gray antiskid painted flooring (synthetic teak), a bar and other fittings in carbon fiber. As for the seats, they're in red leather. The design is simple, clean and inclusive and with a 6'4" headroom under the rooftop; aft, a bar is accompanied by a set of 3 rotating stools. The perfect spot for a morning coffee or evening cocktail. In front of it, you can find two very wide bench seats, also in that red leather, opening onto the sail maneuvering area. All electric winches (Harken), clutches and blocks are gathered in the front-center of the deck, making the crew's life very easy – no jumping around the boat while tacking, everything is right here – and all the lines are running through the hardtop to the mast foot. This allows the deck to be completely clear. On each side of the mast, two large carbon fiber steering wheels stand proudly. The concept of having the helm stations so far forward on this boat was meant to keep the crew together for sailing maneuvers – nobody is excluded all the way aft like you can see on some other racing or cruising multihulls. Four Garmin touch-screens control everything on board this multihull – from the lights in the cabin, to the wing automated control system, but also of course gives you a high-quality picture of your charts, systems checks, etc.

In the hulls, it is a pleasant surprise to find two large cabins each with en-suite heads. And headroom of 6'4"! An incredible volume for such a racy catamaran, with no less than full-length double beds at 6'8" and a lounge ideal for indulging in a bit of reading. The showers even have enough room for two people – if you have young kids that needs assistance, now possible – and the electric Techma toilet is another luxury that we won't refuse. Note that, as everything else on this boat, even the toilet is made of carbon fiber. In each hull, the natural light coming through the 5 windows and the hatch above the bed adds to excellent ventilation – note that the boat does not have AC. The hanging closets in each cabin are made of fabric to keep everything light. Finally, then engines – two Yanmar 29HP sail-drive – are situated under the



bunks, to maintain the weight, once again, ideally centered.

High Quality and Light weight

The Fast Forward Composites team not only offers an excellent racing catamaran, but they built it to the highest quality possible. There's not a single sharp edge on this boat. Everything has been thought through and the finish is outstanding. The carbon fiber construction of this boat goes all the way: Composite construction of epoxy pre-preg carbon, core-cell foam & honeycomb core, all carbon spars, carbon fiber rotating hybrid wing, carbon shrouds, pre-preg carbon daggerboards C foils, pre-preg carbon T rudders, etc. But this also applies to the accommodation: carbon bar top, carbon bathroom sink, carbon wheel, etc. So, this comes as no surprise when you find out the unladen weight of this boat is only 13,300 lbs. Less than half the displacement of a Gunboat 55 (27,560 lbs). Just over twice the weight of the America's Cup 50 (5,360 lbs).

However, the boat incorporates numerous items of equipment: a watermaker, water heater, microwave, 2 drawer fridge/freezer, full size bar and two full cabins with en-suite heads. But most of this weight has been carefully centered on the platform to optimize the balance of the boat.

Conclusion

The combination of incredible - but controlled - power and comfortable living space makes the EC53 an absolutely unique unit on the market. The fully-modular deck plan allows owners to design a custom catamaran according to their specifications. The shipyard, in addition to its projects in the automotive and aerospace sectors, is already working on the Eagle Class 8X, whose launch is scheduled for late 2022.

TECHNICAL SPECIFICATIONS

Builders: Fast Forward Composites
Architects: Paul Bieker and FFC Design team
LOA (Hull): 16.5 m / 54'2"
Beam: 8.5 m / 27'11"
Draft daggerboards down C-foil: 3.05 m / 10' (T-foil: 2,9 m / 9'6")
Draft daggerboards up C-foil: 0.415 m / 16" (T-foil: 0.605 m / 24")
Mast clearance: 26.9 m / 88'3"
Mast length: 23.64 m / 77'7"
Hybrid main area: 120 m ² / 1,292 sq ft
Jib area: 54 m ² / 581 sq ft
Screecher area: 138 m ² / 1,485 sq ft
Upwind sail area: 174 m ² / 1,873 sq ft
Displacement light ship: 6t / 13,227 lbs
Displacement max load: 7.5t / 16,534 lbs
Headroom cockpit: 1.95 m / 6'5"
Headroom hulls: 1.93 m / 6'4"
Hull width: 1.1 m / 3'7"
Bridgedeck clearance: 1 m / 3'3"
Fuel capacity: 2x150 l / 2x39 US gal
Water capacity: 2x125 l / 2x33 US gal
Engines: 2 x Yanmar 3YM30
House battery bank (Li-FE): 8 x 73 AH 24VDC
Hybrid wing: Fast Forward Composites
Basic pack: C-foils – regular mast and regular T-rudders
Upgrade option: Auto-stabilizer rudders – hybrid wing – T-foils



The competitors

Model	Balance 526	TS5	HH55	Outremer 5X
Builder	Balance C.	Marsaudon C.	HUDSON C.	Outremer Y.
Upwind sail area	149m ² /1,600 sq ft	148m ² /1,590 sq ft	191.8m ² /2,065 sq ft	183 m ² /1,970 sq ft
Light displacement	12t/26,450 lbs	8.6t/18,960 lbs	14.2t/31,300 lbs	11.7t/25,800 lbs
Basic price ex-tax	\$ 1,399,000	€ 649,000	€ 2,380,000	€ 1,319,000



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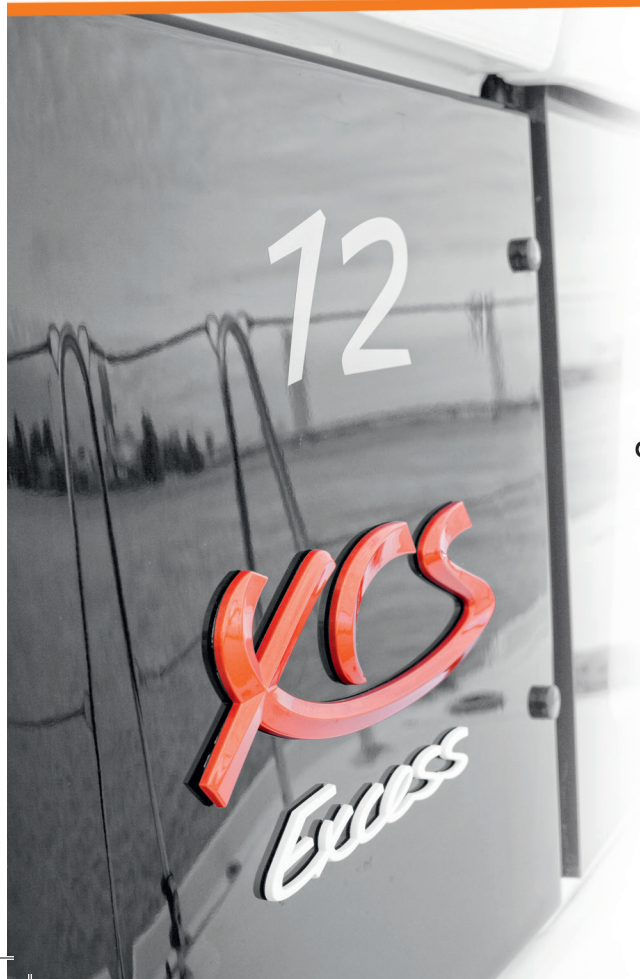
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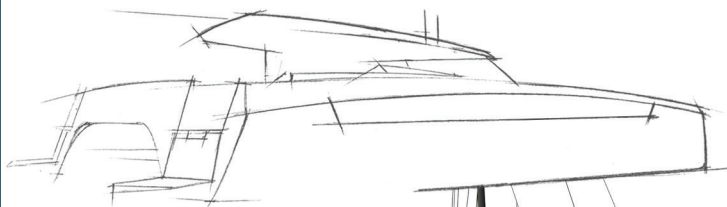
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