

# Company Spotlight



*A Gunboat 60 receives its final metallic topcoat in the spray bay*

## “Made in China” is Becoming the Bench Mark for Excellence for Performance Catamarans

*Hudson Yacht and Marine is taking the wind out of any “Made in China” stigmas that exist; one yacht at a time!*

The “Made in China” stigma is ingrained in many people’s brains thanks to the traditional lack of quality control by manufacturers, which has made consumers lose trust in pretty much anything made in the country. However, with China’s growing economy, Chinese manufacturers have quietly made enormous investments in capital and human resources that is making China the place to build detail oriented and technologically advanced products.

But what about boats?

For years the public has viewed Chinese built boats as being inferior. With that said, when we see what companies like Hudson Yacht and Marine (HYM) is doing with their 3-DC&C machines that are building female molds to a very high precision, producing fully infused catamarans for a very discerning client

base, and bringing them to market at very competitive pricing, should we reconsider the preconceived notions and dogmas?

Located in Xiamen, an exciting and beautiful area of China with a fast growing marine industry, HYM boasts versatility in all types of composite construction, and high quality standards throughout the building and finishing process. The factory site, which covers an area of 135,000 square meters, is situated beside a harbor for easy launching and sea access. An investment of over USD 50 million in factory and plant makes this new company a potent force for the construction of all leisure crafts.

The yard, with 400 employees, has a core group of 15 very experienced expatriates permanently employed, whose job is to teach, QC trouble shoot, and establish procedures for future

production. HYM was quick to realize when establishing the yard that a core of experience and high technology machinery was needed to build the world's best boats.

Paul Hakes, President of Hakes Marine puts it this way, "The use of CNC routers is paramount to successful building in China. With clever thought and application the build process can be changed from one of custom craftsmanship to one of skilled process work. But it does not mean the yard can build without experienced boat builders and engineers."

Understanding the need for both skilled employees and high tech machinery, almost immediately a 60' long, 5 axis router was built, capable of machining an entire hull or deck to within 0.5 mm of accuracy. If the part is too big, the design engineers will put splits into the pattern with precision alignment faces so the 2 parts can be subsequently bonded prior to making a female GRP mold. The big router is supported by numerous other CNC routers. There are 2 very fast machines strictly designed for cutting plywood sheets. This forms the basis for all plug framing construction and all furniture manufacturing and accuracy is within 0.2 mm. These machines are also being used for core cutting, so that the GRP and carbon boat structures have perfectly fitting foam cores. No gaps means less weight and higher strength. A further giant 3 axis router can either be loaded to cut 9 sheets at one time, or take on some of the 3-D milling when the big router is too busy. Ad-



*Deck mold in CNC bay for first rough cut*

ditional support to production comes in the form of a 2 axis fabric cutter with a long 15 m table. This machine can cut pre-pregnated carbon fiber, chopped strand matt, or any other carbon or fiberglass material. It will cut very fast, label each piece of fabric showing orientation and even the overlap or any other reference lines required. This means each boat is a kit set of pre-cut core and fiber. The accuracy or wastage cannot be bettered by hand and the most important point is that the first level of Quality Control is handled before construction even begins. Each part can be signed off and boxed ready for the lamination team.



*Gunboat 60 epoxy infusion of the large deck structure in a temperature controlled environment*



*Finished grande prix race boat HH42 awaits final QC*

“So the aim is to turn boat building into a science taking the guess work or interpretation out of the process,” says Hake. “Of course this not the full story. Detailing and fine fitting is still in the hands of the artisan, but in China there is an abundance of this skill. The point is to, wherever possible, ‘remove the tape measure from the worker’, then the potential for error is eliminated. Clever design that utilizes the full capability of the machinery at hand is the solution to minimizing the risk of mistakes, maximizing productivity and quality.”

### **Hudson Yacht and Marine Models:**

#### **HH-42**

The HH-42 is a 100% pre-preg carbon fiber grand prix racing machine, no compromise. Boat number 1 is owned and raced by Richard Matthews, founder of Oyster Yachts, a keen and fanatical yachtsman that will not settle for anything less than a perfect racing machine. He has had great success on the east Coast of the UK last summer and is now patiently waiting to start his second season knowing this boat has everything needed to beat all competitors. This type of boat building has been typically dominated by a few famous yards in the UK, USA, Europe and New Zealand and nobody would have thought to look to China for this construction which demands the highest levels of accuracy and weight saving though the use of advanced composite materials placed into carbon molds



*Careful core fit of large deck structure*

and cured at high temperatures. However the design was clever, so the entire interior structure can be installed into the carbon hull shell without the use of a single tape measure. Even the deck mold had each piece of deck gear and bolt hole engraved into it, so there is no mistaking where to position the equipment.

#### **Gunboat 60**

The Gunboat 60 is a giant carbon and toughened foam structure built entirely in female molds (cut with computer accuracy, of course). This structure, at over 250 m<sup>2</sup>, is infused in one shot using a high tech infusible epoxy resin. Again, the yard has sought to eliminate the variables and potential for defects normally associated with hand laid, or wet pregged structures by adopting the best technology and infusion. Once the infusion process is understood, as long as all constants are thoroughly quality controlled and maintained, like temperature, pressure, infusion plumbing, then the hull, deck and all components come out the same. Same weight, same quality, same strength. It is now a repeatable process.

Technology for this catamaran did not stop there. At the heart of this beautiful yacht is perhaps the world’s first regenerating hybrid propulsion system. A combination of the best components in the world, like variable speed generators and liquid cooled electric drive motors. Couple this with some ingenious software that is almost 3 years in developing and you have a yacht capable of sailing the world without ever having to use diesel; the world’s first carbon zero cruising yacht. To aid the sailing experience, the centerboards are hydraulic and the propeller skegs too, so at a touch of a button the propeller skeg is deployed to either motor the yacht or if sailing speeds are above 9 knots (common nearly all the time on a Gunboat) the propeller is generating upwards of a staggering 6 kw of power, enough to fully charge its high technology lithium battery bank in less than one hour. Of course now China is leading the world in lithium battery technology which all helps to deliver the best in class products to the West at very favorable prices.

Once upon a time (in fact less than 30 years ago) we all loved to hate Japanese cars and they were regarded as bad quality and an adventure to own. Nowadays we recognize the very same brands as being the finest engineered cars around, equal to anything that Europe or the USA has to offer in terms of reliability and value for money. To date we have branded China with that same ‘bad quality’ badge, but now quality is shining through. Gone are the shonkey GRP boats full of osmosis and rotting teak, China is on a path of technology and quality. It is delivering these very attributes that every “yachtie” and motor yacht owner is seeking as paramount in their yachts. Not only is it delivering quality and technology, they are coming at a price that makes all value conscious owners take a second look.

For more information, visit: [www.hudsonyacht-marine.com](http://www.hudsonyacht-marine.com) or e-mail: [paul.hakes@hudsonyacht.com](mailto:paul.hakes@hudsonyacht.com)



*Jaguar JC48 Power Catamaran*



*JC48 interior*

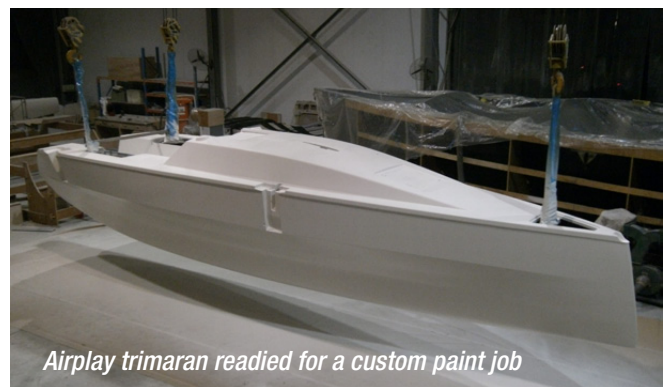
### **Hudson Yacht and Marine Facility Overview**

- 8000 m<sup>2</sup> small boat building hall with overhead gantry cranes.
- 7000 m<sup>2</sup> big boat building hall with overhead gantry cranes.
- 14,000 m<sup>2</sup> big boat fit out hall currently under construction with overhead gantry cranes
- 4000 m<sup>2</sup> of metal fabrication and storage halls.
- 4000 m<sup>2</sup> of offices and project management rooms.
- Harbor access for testing and launching vessels
- 25 m x 18m boat testing pool
- 5 Axis CNC router 18 m long, 5.5 m wide and 4 m tall.
- Two 3 Axis CNC routers with 7 m vacuum beds.
- 2 Axis CNC laser cutter with 3 m bed.
- Automatic nesting fabric cutting machine 10.3 m long x 1.6 m wide.
- Integrated vacuum system running through the big building hall, complimented by 8 mobile high pressure vacuum pumps.
- Comprehensive clean dry air supplied through both halls.
- Two 25 m 50 degree Celsius post curing and laminating clean rooms
- Two fully vented 16 m long spray painting booths
- New 25 m 100 degree Celsius curing oven
- Prepreg laminating temperature controlled clean room

- In-house alloy, stainless and steel fabrication shop.
- In-house carpentry and joinery shop
- Sales Center

In touch with the marine scene, Hudson Yacht and Marine also boasts a modern Sales Centre overlooking the beautiful Wu Yuan Bay. A versatile building plays an important role as a conference centre for product launch and display, training for new technologies, Government presentations, and a delightful place to take delivery of your new vessel. A dynamic area for a dynamic company.

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*Airplay trimaran readied for a custom paint job*



*Hudson Yacht & Marine also builds the Jaguar JC48 Power Catamaran and the Airplay trimaran*