

SPIRITED ASSEMBLY SYSTEM

proves itself!

Following on from our design review of the newly released Spirited 380 in the Jan/Feb issue (MHW #76) earlier this year, we thought we would see how this innovative concept is progressing.

ONE of the challenges with developing anything new is the process of proving the concept. Getting a good idea from the design drawing board to work in the real world often presents some unexpected surprises. One designer who is putting his own effort and cash behind his innovation is Craig Schionning. The Spirited 380 is a novel approach to building that uses flat panels and moulded parts to create a boat without chines aimed at the DIY builder kit market, now widely known as the Spirited Assembly System (SAS).

To prove the concept and to build a demonstrator boat, Craig has been building their Company Spirited 380 in Port Stephens. The Spirited 380 is assembled from flat panels and four major mouldings. The mouldings of the hull bottoms and the radiused gunwales are produced at the Spirited component factory/design studio.

The pre-moulded parts are all hand laminated using high quality epoxy resin systems with end-grain balsa core vacuum bagged into the female mould. Balsa is excellent for its high compression strength and toughness. The hull bottoms and radiused gunwales weigh approximately 150kgs per side (hull and deck) out of the mould.

The idea of the assembly system was that the pre-moulded and fully faired hulls and gunwales are delivered to builders to save them time. After building many boats himself Craig was aware of

the huge amount of time that can be swallowed up by the strip-planking, fairing and laminating of the hulls in normal construction. With the shell at now lock up stage it is possible to see how the construction method stacks up and whether it has avoided some of the pitfalls as it was designed to do.

One of the first differences that become apparent is that the boat is built the right way up from the outset. Usually hulls are built upside down to allow for fairing and laminating of the bottom of the hulls. The SAS approach sees the hull bottoms delivered fully built with no fairing required and allow the builder to pop them straight into precut cradles and start standing the bulkheads almost as soon as they are delivered.

“Once the hulls were levelled, we got the bulkheads up in literally a couple of hours,” says Craig.

One downside to this is that this gets you around one of the major boat building milestones (and excuses for a party) – the hull turning. However it is one that builders would be happy to avoid!

The precut bulkheads are then stood up in the hull bottoms and acted as attachment points for the hull sides and decks. This is where another important difference is apparent. As Craig has built more than a few boats, he is aware that building a shell is only part of the total time involved in building a catamaran. In fact with a modern catamaran requiring a high standard of finish on the interior, the interior can take as much time if not more to construct as the shell. It makes sense to make the construction of the interior as painless as possible.

| Front view – all bulkheads in.



The first step is to produce a full computer CAD model of the entire design, right down to the galley shelves, hatch cut-outs, windows etc. This allows Craig to develop shapes off the model that are computer-cut from pre-glassed flat panels like Duflex Featherlight, where the interior parts only withstand light loads, and Duflex Balsa panels used for anything structural. Having an interior pre-cut kit is not novel but the way it is installed is. Whereas the normal method of hull construction has you building a shell and then getting inside and fitting it out, Spirited Designs has you building the boat from the inside out.

The Spirited builders left the hull sides off the boat when they started the interior. It is unusual but very satisfying to be able to reach into the inner hull side shelves with your feet on the shed floor, Craig explains:

“The access to the hulls with the hull side removed, presented many advantages; such as fitting of cabin soles and other parts low in the hull,



installation of sail drives, steering, dagger board cases etc ... I found it a very practical approach, saving countless hours of back breaking work in traditionally very awkward places. Also when you have other people working on the boat with you no one gets in anyone else's way.”

Indeed the ability to make the hull interior or deck parts with easy access was taken a step further in certain areas. When it came to the stern steps the

Open side shows easy access for fitting furniture etc.

builders used the hull as a form and then took the steps off the boat and finished most of the construction on the shed floor.

“The steps are a good example of the synthesis of the computer model and experience in construction. If I built the steps in place then we would have had to

THE NEW SPIRITED 380

Set your spirit free

380

Welcome to the next generation in multihull designs from Master Designer and Boatbuilder, Craig Schionning
This design takes kit catamarans to an exciting new level, using moulded hulls and decks combined with precision CNC-cut flat panels designed specifically for DIY amateur builders. Performance and reliable open ocean capabilities, balanced with luxury cruising appointments and generous cabin space, create the ultimate catamaran package.

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Close up of back steps. (left)
Aft steps out. (below)
Working on motor. (bottom)

do the fairing and fibreglassing upside down. The computer cut steps were 'tacked' in place and then removed so that the steps could be positioned in a way that made it easy to finish on the shed floor."

The construction of a boat from the inside out is a technique borne out of the modern use of computers for catamaran design. Whereas old style design had



builders building a hull and then having the builders construct an interior to fit, a modern designer can design and cut the interior shapes before the hull skins are built. It was possible for some interior fittings to be installed in pre-computer boats but the modern approach can take this much further.

As a builder Craig found the fitting of a normal 'cut and fit' interior time consuming. The 'fit from the floor' approach has allowed the Spirited 380 to progress much more quickly.

The 'fit from the floor' approach was used in the fitting of the diesel engines. Installation was made easier by the ability to work beside rather than on top of the motors. The same approach was used with the fixed rudders. Compared with a traditional installation a considerable amount of hours and effort is saved.

Another interesting approach to saving time on the build is the use of pultruded unidirectional rod for reinforcement in the main cross bulkheads. In many catamarans that use composite panels unidirectional glass has to be pushed into the routed edges of the panels to take the high loads found in structural bulkheads. Achieving a high quality laminate demands a very methodical builder and takes a lot of time. Spirited Designs has sourced unidirectional pultruded product which needs only to be glued into the routed edge of the bulkhead. This saves a lot of time and allows the designer to know that a high quality laminate has been built into one of the main strength items on the boat.

The Spirited kit contains as much of the boat as possible pre-laminated, either the moulded curved parts or the pre cut Duflex flat panels from ATL Composites. The cabin design took a lot of thought as the intention was to reduce the amount of strip-planking/fairing needed as found on many catamarans.

"The cabin design has achieved the desired modern look with its rounded styling' and produces the appearance of being smaller than it actually is. It is also quick and easy to build".

The cabin uses precut panels on the sides with a foam top from front to back. The foam is draped over (you guessed it) computer cut mould frames and laminated on the frames. Craig found that

the time involved in this approach was far less than compared with strip planking the top as he has done when building catamarans before.

“We found that we had the cabin top done in about half the time it would have taken to do a similar strip planked cabin with a fraction of the fairing required being a naturally fair material.”

Kerfing of Duflex is widely used on the 380. Kerfing is the process where one skin of the panel is cut using saw cuts across the direction you want a stiff Duflex panel to bend. The inside skin and core is usually cut away and saw cuts spaced depending on the size of radius. Then the cuts are filled with glue and the panel curved and then glassed over the cuts once cured.

The front of the bridgedeck uses kerfed Duflex panels. The bridgedeck panel curves up to the deck forward which overhangs the front of the bridgedeck. The deck overhang is nicely shaped and used to attach the trampolines to up the front. This simplified approach saves more time.

Whilst at the front of the boat you may notice novel features like the composite prodder. You won't notice much anchor gear as the anchor roller fitting is under deck along with the chain and winch, keeping the deck clean and clear of obstructions.

The hinging prodder is pre-cut using Duflex panel and features composite hinges. The use of composites for hinging components is also used down the back of the boat.

Aware of the desire for cruisers to have their cake and eat it too, Craig wanted the 380 to have a swimming platform (duckboard) and also have davits. Many catamarans do have both but getting the swimming platform clear with the dinghy on the davits meant doing something new. Craig developed swinging composite davits that allow you to drop the dinghy and then swing the davits out of the way. All these fittings are cut out in the kit, no thought required.

“The composite davits have worked out to be strong and tasteful, modernising the aft area of the boat. There are many different composite fittings built into the boat, these are integral to the boat



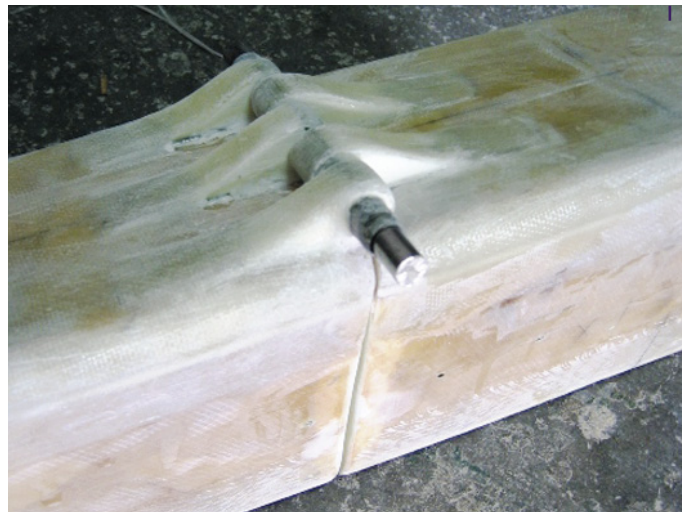
from top:

Cabin frames in place; Cabin top glassed; Davits.



Prodder hinge open. (above left)

Prodder composite hinge. (above right)



avoiding the use of fasteners which are prone to leaking”.

Making composite prodders and hinging davits is a bit out of the norm for amateur builders so Spirited has developed plans of the highest standard, which has become the norm for modern designers, but with something extra – Spirited hold regular Boatbuilding Workshops.

Every couple of months interested parties can go along to a Spirited Boatbuilding Workshop where you can get an overview of the processes involved in the building of a Spirited design. You get to learn about bead bogging, basic laminating and a few other snapshots of the building process.

Asked if the construction of the boat had vindicated his approach to catamaran building, and Craig replied:

“I am very happy with the way the Spirited 380 has gone together. We have

saved a lot of time during construction and the boat will look like a modern fully moulded catamaran out on the water. Future 380 builders will benefit greatly by updates and finetuning done by us on our Company boat, any ‘bugs’ we come across won’t go any further. This will be great comfort to anyone considering building a 380”.

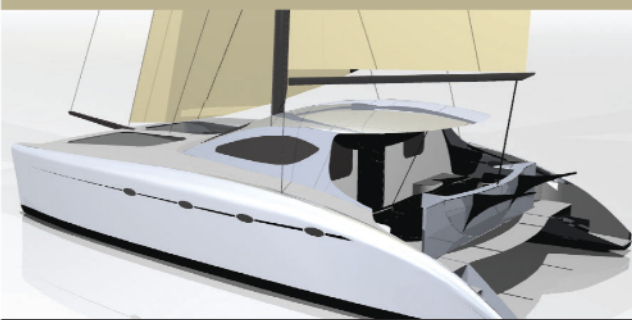
So when is the launch? I asked Craig:

“As soon as possible. After spending so many years helping other people build and launch their own boats it will be a



STALLION MARINE SPIRITED 380

WHAT OTHER COMPANIES CALL EXTRA OPTIONS, STALLION MARINE CALL STANDARD FEATURES



Stallion Marine Spirited 380, designed by Craig Schionning, has the best options picked from multi-hulls over the years and put into one exceptional package. The 380 has a finish and style that puts it into a class above other multi-hulls. The 380 is ready for short weekends away or extended global cruising.

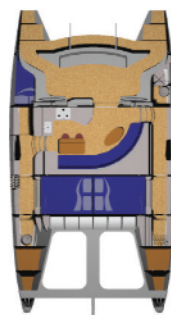
STANDARD FEATURES

- 2 queen, 1 double & a spacious bathroom
- Walk through transom with galley up
- Full Navman electronics pack including: chart plotter, auto-pilot, VHF, wind, log, speed & depth instruments
- 21hp Nanni diesel engines
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- All yacht spa rig & Ullman sail package
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- Hinged prodder for easy berthing
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- Large deck hatches for good air flow
- Functional open saloon
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Stallion Marine is offering the 380 at an unbeatable price of

\$449,000 inc GST

and as a special offer a Davit package and 2.7m inflatable with a 4hp engine will be thrown in for FREE!



David 0422 099 072 or Julian 0402 079 394

thrill to finally sail away on my own.” Although whether Craig will be able to go that far afield is debatable. He has already sold a number of Spirited 380 kits and with the 380 due to be shown at boat shows and the like Craig may find himself back at the factory making more pre-moulded parts for new builders and holding more workshops. So if you see the Spirited 380 hurtling shoreward sometime soon, give a wave, it is probably Craig having to get back to work! ❖

Designer Craig Schionning's favourite features of the

Spirited 380

Usability:

The aft area of the boat. Big aft steps have come up better than expected following through to the 'S' walkthrough transoms, giving this design the Spirited signature.

The swimming platform is functional and blends in with the rest of the boat. Doesn't look like an optional extra.

Aft cockpit seat, has ample space for seating. The main sheet traveller work area is at a great working height for winching etc ...

Access up onto the side decks is easy and practical. Side and fore decks are safe with good footing, a key feature in the design.

Engines have worked out well. Space saving of the sail drive creates a very compact installation. Noise and vibration etc ... is kept outside and away from the accommodation.

The original design spec was to try and incorporate a very interactive saloon, galley up and cockpit area. Now that the boat is at a shell stage and we can see this area attracts a very social atmosphere. These areas work very much as one. An often received comment from visitors has been how spacious these areas are. Entertaining has never been easier and more accommodating.

Saloon access into the hulls in practice is very open and user friendly.

Building concepts from design to practice:

Strip planking is a technique of the past!

Moulded components, ready made for assembly, married well with the flat panel kit. Assembling not building, a key advantage to the SAS Spirited Assembly System.

Recessed join lines on the outer hull panel, resulted in a flush type join, requiring minimal fairing. The fibreglass batten glued into the duflex panel, worked well.

Design styling:

The rounded hulls and decks combined with the flat precut hull panels create a modern and attractive hull design.

The flat side and fore decks blend well with the proportions of the design.

Aft area incorporating the aft steps, swimming platform and walk through transoms is very well proportioned and pleasing to the eye.



Ozsail founder and good mate of many

Our local larrikin Adrian Platt died last month in a motorcycle accident.

He loved his Harley and died just near a boat ramp, it was as if he was saying goodbye to the ride and the water at the same time, a friend said.

I met Adrian at Laguna Multihull Regatta when my all girl crew had to go back to work and I was short of crew for midweek races. Up rocks this bearded character volunteering his services. "Light winds" he said. "How big's your kite?" "Fractional? Oh, my mate Nuddy's got a masthead in his ute. Adrian and Paul proceeded to attach spectra runners to the top of the mast and *Live Wire* flew this huge spinnaker which won us the race that day!

There are so many wonderful things to remember about Adrian. I've got this idea" he said. "Let's buy Alan Bond's old *Drumbeat* maxi (now *Spank Me*) and bring her home to Oz. So on April 7, 2004 with snow on the decks at Rhode Island, we threw the ropes and had a magic three month adventure covering 11,700nm. Always up to pranks, he chuckled and said "watch this!" Turning from south to west while the crew were waiting for the GPS to read 00.00.00 the boys sweltered down below in the nav station with their cameras at the ready until they realised our skipper had tricked them again! Then we sailed over the equator.

I remember his mirth when he said he was featured in *Multihull World* in 1997. "Which race was that?" I asked. "No they did a page on me about fishing from a multihull", he chuckled.

His many friends remember him as a 'modern day McGyver' and one of nature's gentlemen. A mentor to many, we will all miss his mischievous ways. It was an honour and adventure to part of your life Adrian, keep chasing those mermaids in the big blue deep!

Everyone in the Whitsundays is mourning the loss of multihull fan and Ozsail founder, Adrian Platt recently. Adrian died while motorbike riding, enjoying life to the utmost to the end ...

I was very privileged to share Adrian's last sail. It was his first time on *Wild Thing* with warming northerlies on a typical Wednesday night race. Aboard were only four people, myself, John Cadwallader, (*Avatar*) and Frenchy Mel. (*Islandive*). It was a race like most others except for one very different thing. Adrian was on board. There was less of a sense of our normal urgency and more of an aura of calm. Between the three 'old timers' we had over a hundred years of sailing experience. This was going to be a fun race.

We had an average start with our attempt at upsetting the three port starting vessels not to be. "Bugger" said Adrian with a Cheshire grin on his face, "We almost got them". We settled into the windward leg while Adrian tidied the boat. *Wild Thing* is covered in cordage with over a dozen ropes that can be adjusted – Halyards, Downhauls, Outhauls, Cunningham, Spanner, Tweaker. Normally we just ignore the mess and leave all the ropes thrown down the main hatch but our mate Adrian kept himself busy, tidying ship. He coiled the halyards, trimmed the heady, adjusted the cunning, eased the spanner and tweaked the outhaul. When he was done, he politely positioned himself on the float forward of the board were his weight was most needed. I was just amazed. Here we were racing, drinking and laughing on a Wednesday night race and our friend Adrian would not stop working. Never in my lifetime of sailing have I raced with a person that was so welcomed on board. All he wanted to do was make sure that the vessel was safe and shipshape. It was just so easy to see why people let Adrian take charge. He was often seen sailing other peoples boats. Why? Because they wanted him to! He would look after the vessel as if it were his own and make quiet suggestions of how to improve things. For instance, he offered an idea as to how we could stop losing mainsail clevis pins on *Wild Thing*. The idea was unusual but typically Adrian – it would work!

At the end of the race, myself, like many others before me said "Adrian, if you want to borrow the boat anytime just ask ..."

At Adrian's memorial his long term friend Lisa remembered him as her modern day McGyver. This was just so true. He could fix anything. He was a quiet achiever, and a very competent sailor. Just the guy that we all wanted to have around when the shit hits the fan. Airline Beach is just not going to be the same without you mate.

Fair Winds and Following seas to you always ...

Keith Roberts and all Whitsunday Sailors ...

Composite Boatbuilding Workshop

Interested in building a Spirited 380? Then join the team at their quarterly workshops and see how easy it really is to get your project underway with the Spirited Assembly System (SAS). Craig Schionning talks you through the key necessary skills in a practical down to earth environment.

SPIRITED Designs hosted their third Boatbuilding Workshop on Saturday, October 28. This event is becoming ever-more popular with the attendance numbers growing each time. Presented every two months, with people coming from interstate to get a first hand look at how easy the composite Spirited 380 is built.

The Workshop is open to anyone interested in building a Spirited design and high-tech composite construction. No strip-planking lessons here, as there is next to none required when building a Spirited design.

Craig Schionning and the team got things underway just after 9am with

various demonstrations and discussions on the build process of the SAS (Spirited Assembly System). Covering areas from Z-joining, Coving, Bonding, Taping, Applying Peel Ply, Laminating, Squeegee Coating, Composite Fittings and much more, the boat building enthusiasts showed great interest in joining in the fun and trying it for themselves.

Supported by ATL Composites, their representative is available onsite to answer any technical questions regarding their materials, both on display and used in Craig's demonstrations. Samples are readily available along with written material for attendants to take away with them and read at their leisure after the Workshop.



Craig explains the process. (above)
A fairing demonstration. (below left)

Midway through the workshop coffee and tea is provided, with the opportunity to mingle and talk to other Spirited enthusiasts. A great advantage of the workshops is Spirited's existing clients/builders also come and join in to talk and learn further skills, presenting a great opportunity for newcomers to pick their brains and discuss their projects. One of the Spirited builders from Queensland was on hand to do just that.

Having the workshop at the component factory allows for a first hand look at the hull and deck moulds on display to give people an idea of how they are built.

Always a highlight for most people was the trip a short way down the road for a tour of the Company 380 under construction. This always brings perspective and purpose to what has been demonstrated in the workshop.

Spirited Designs have had excellent feedback from people who have attended the workshops.

Spirited Designs will hold their next workshop in January 2007 for more information please contact: www.spiriteddesigns.com.au

