

READY, WILLING AND ABLE

In just two years, the vision for an adaptive sailing boat has come to fruition with the prototype of the SV14 on display at the Volvo Ocean Race stopover in Cape Town in December last year. *By Wendy Maritz*



Russell Vollmer and Alex Simonis at the Robertson and Caine factory during R&D

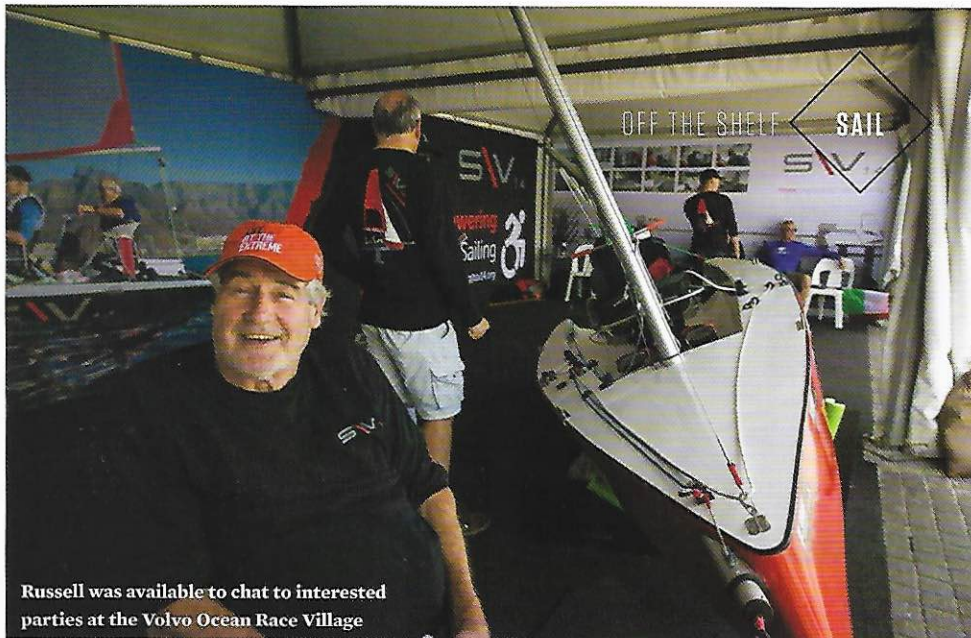
When asked in an interview with *The Guardian* 'What is it about sailing, then?', 46-year-old award-winning solo and quadriplegic sailor Hilary Lister replied: 'You have a freedom on water you don't have anywhere; well, I don't. It's hard to explain what it's like being stuck in a wheelchair. Here I'm the boss. As well as steering, I can choose to sail flat, or go faster. It's wonderful to have choice again.' Lister credits sailing with saving her life, giving it 'new meaning and purpose'.

Former Royal Cape Yacht Club (RCYC) commodore, quadriplegic and paralympian sailor Russell Vollmer is equally vocal about the joy and freedom sailing brings. Vollmer learned to sail as a child, and after an accident at the age of 19, continued – undeterred – to follow his passion for the sport, and has done so for the last 40 years.

Vollmer is also well placed to understand the hurdles that exist for those with disabilities who wish to sail, so it's no surprise that he quickly came onboard to share his insights after marine surveyor and adaptive sailing advocate Peter Jacops made a public plea. Jacops, who is based in Thailand, extended an invitation via social media on 29 October 2015 to his friends in the boatbuilding industry, asking who would be willing to design an affordable, open-source 9-12ft sailing boat for sailors with disabilities.

'I placed the request on Facebook when I started Disabled Sailing Thailand,' Jacops explains. 'After doing some research on buying boats for our new association, I came to the conclusion that there are hardly any boats for people with disabilities available on the secondhand market (and if there are they are certainly not available in Asia or Africa) and the prices of new boats are exorbitant.'

Understanding how prohibitive the costs of adaptive sailing vessels can be, Alex Simonis and Maarten Voogd of naval architects Simonis-Voogd Design decided to take up the challenge and see how they could help, inviting Jacops to a meeting less than a week later at the RCYC. Vollmer joined them.



Russell was available to chat to interested parties at the Volvo Ocean Race Village

DESIGNING A 'DREAM MACHINE'

The mandate agreed upon seemed simple enough on paper. Design a modern boat that is easy to handle by one or two sailors, can sail with a single sail, but could accommodate a jib or even an asymmetric spinnaker to adapt to varying degrees of sailing ability. Above all, it needed to be affordable.

So, where to begin? Simonis explains that early on they considered a GRP boat made in a female mould, but this could only be realised through professional boatbuilders, who would need to add overheads and profits to make it worth their while. The making of the moulds themselves would be costly, and production limited to a small number of locations worldwide.

But this particular wheel – a version of it anyway – had been invented in the form of the Mirror dinghy made famous in the 1960s. At the time, the *Daily Mirror* challenged TV DIY expert Barry Bucknell and designer Jack Holt to design for a boat that could be built at home. They succeeded. It was made out of plywood and could be built using a method of stitching the ply parts together using copper wire and sealing the joints with glass fibre at a total cost of £63,55 (about £1 268 – or R21 394 in today's value). Currently, there are more than 70 000 Mirror dinghies, making it one of the most successful dinghy classes worldwide.

So, why not take a 55-year-old concept and reformat it for the modern age using advanced technology in the form of 3-D solid modelling programmes to design it? And then make the design freely available to download for anyone interested?

Simonis-Voogd embarked on a design for a 14ft modern yacht that could be built from plywood, hardwood and metal sheets. They prepared a CNC cutting package using these raw materials put together in jigsaw fashion to create a boat in less than 200 man hours. The average global cost for the basic boat is around €3 600 or \$4 400.

FORM FOLLOWS FUNCTION

The endeavour, Simonis freely admits, is a passion project for his company, and one that has greatly evolved since the initial ideas were put on the table. The team had to work through an ever-growing list of considerations to fine-tune the design, not least of which is that disabilities differ. 'You wouldn't design a deck layout for a person who has had their left arm amputated in the same way you would for a quadriplegic,' Simonis explains. 'And we didn't want to exclude anybody!' The result is a comprehensive 120-page downloadable design manual, and 28 variations for a deck layout that aims to be as inclusive as possible in terms of types of disabilities and varying degrees of mobility. This includes an all-electric version of the vessel, with mouth and voice activation technologies.

Vollmer acknowledges that 'sailing when you're disabled can be daunting', so along with ease of use and comfort, stability and safety were further key aspects of the design. 'We needed to ensure that the boat would sail as upright as possible,' Simonis explains. A video clip of the SV14 at play in Table Bay in early January with Vollmer steering and Simonis enjoying a comfortable perch on the front seat shows the yacht

PROGRESS

First SV prototype: completed May 2017; launched June 2017. Built by Robertson and Caine, Cape Town

Second SV prototype: completed October 2017; launched in January 2018. Built by Peter Jacops and volunteers, sponsored by Royal Phuket Marina in support of Disabled Sailing Thailand

SA's second SV14 is in progress in the skilled hands of master boatbuilder Stephen du Toit

Additional SV14s are being built in Hawkes Bay, New Zealand (for Sailability); at the Spaulding Marine Center, Sausalito, California, US; by Ray Ringuet at Austhai Marine in Thailand; and at HMC Technikon in Amsterdam by third-year students.

In addition, there are three more parties in Europe (Belgium, The Netherlands and the UK) that want to start the moment they have secured a material sponsor.

Visit sv.org for more information, to register and get plans for the boat.

Russel Vollmer, Alex Simonis and Rick Nankin from North Sails

heeling, with both sailors sitting upright, thanks to the angle-adjustment feature on the seating. (Mobility-device experts Shonaquip lent their expertise to the design of the vessel's seating.) 'You want to sit on the high side of a heeling boat,' says Simonis, 'simply to see where you're going, and to stay as dry as possible.' That day the SV14 was doing 6-6.5 knots in a 15-18 knot wind building westerly. 'Everything was in perfect synchronisation... we were prepared to sail around Robben Island,' Vollmer commented.

'Simonis-Voogd has offered its intellectual capital free of charge,' Vollmer says. None of this would have been possible without it. Likewise, Simonis believes that without Vollmer and Jacops, the project would be dead in the water. 'We always wanted the boat to be so good looking and so fantastic to sail that able-bodied people would want it. To which we would say, 'No, you can't have it,' he smiles. (Visitors to the SV14 stand at the Volvo Ocean Race stopover compared the boat to a mini Volvo 65, so it's safe to say they achieved their goal on that

front.) 'It's comfortable, feels safe, and while it's not super-fast due to its physical size, it's a responsive boat and fabulous to take on the water using a number of sail configurations, says Vollmer. Perhaps most importantly, 'it's a means of introducing people with disabilities to the sport of sailing'. For Jacops, it could not have worked out better. 'When I met with Alex and Russell, I said the boat had to be cheap, made from products readily available on any market, competitive and damn sexy. I believe Alex has overscored in all my requests.'

Future plans include producing the SV14 in glass fibre. 'We are in continuing discussions with possible sponsors, to see how we could do this without falling in the trap of the boat becoming too expensive,' Simonis explains.

THE VOLVO OCEAN RACE SHOWCASE

While Jacops' prototype was launched at the Pattaya Boat Show in Thailand a few months earlier, the Volvo Ocean Race stopover gave Simonis and Vollmer the chance to target public awareness for the first time. A total of R30 000 was raised and a commitment was made by a Dutch naval carpenter to build a boat in The Netherlands. 'Most encouraging for me was to see a young disabled boy's eyes light up when he saw the boat and realised that he too could go sailing... This reaction makes the project all the more worthwhile for us,' Simonis says. In addition, promoting parasailing in countries that may not so easily have participated before is a real possibility now.

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