

## A Designer's Diary for 2002

by Derek Kelsall, 2002

This time last year we were still talking about our tour of the US, during which we had held 4 KSS workshops across the country, producing a hull at each, plus visiting another project which involved the production of two 60 foot KSS hulls.

Had I been asked to write a wish list at that time, that list would have included two things. As we spend time producing panels at the workshops, a less intense and less messy way of producing the panels would have been high on the list. I would also have wished to have KSS kits made available to clients from a specialist kit producer. Neither was imminent in Jan 2002. Both came about during the year.

Innovation Lamination Ltd, came into being about the middle of the year, at the same time as resin infusion (RI) was brought back to my attention by one of my clients building a KSS 46 in Florida. Donna and Andrew Sands are long time friends, with an interest in boats. Both are Mining engineers but seeking a career change. When I outlined the possibilities as I saw them, they did not take too long to decide. A factory was leased and trials began. The first RI panels were more than encouraging, though it was clear that there would be lots of options to trial before we could give a positive opinion on which approach would be the most efficient. First orders include all the panels for a custom 70 foot sailing cat. They have a high gloss, no joins, 18mx 3m table on which the panels are made.

RI is the perfect partner to KSS. The vacuum resin infusion process spreads the resin throughout the foam sandwich panel, to replace the hand laminating which has been the only simple alternative for all of the time that I have been involved in boats. The simplicity and effectiveness of RI on our KSS table has to be seen to be believed. KSS is better and more attractive for the use of RI and it is RI on the table that allows us to offer the method as part of the design package. RI is used in conventional molding but needs more experimentation in that application. The main change for the KSS builders is the requirement for greater vacuum pressure (a \$200 US venturi running off a compressor is very effective), a perfect seal on the table and bag and the right materials and instrument to check. To sit back and let the vacuum pressure do the task of spreading the resin is a joy.

Where the panels are available professionally made, I believe most will choose to buy the kit. The cost will be slightly more than twice the

cost of buying the basic materials. Within days they will have hulls to show for their efforts and no need to invest in a table etc. The small projects will probably still be done using the hand lay-up methods.

Traveling once again, dominated the year with one day in three spent out of NZ. We began (it seems years ago) with a trip to Melbourne in February, to visit clients, to talk to the Melbourne Multihull Yacht club and to spend time with friends and daughter Heather over from Tasmania. We also managed to fit in a trip into the Grampian Mountains.

The first workshop was in France. Henri Debierre had been at the Texas workshop in 2001 and had set things up for the first KSS workshop on the other side of the world. On the way, we stopped in Washington, before flying on to UK, to spend time with both our families and then to Brittany. This has to be the high spot of all our workshops to date. 28 came from 8 different countries. Working with such a mixture and with interpreters added to the event. The numbers did not seem to interfere with the hands on experience.

Our thanks to Henri and Bridgitte for laying on not only the workshop but also a truly wonderful cuisine – which started with whole hams for breakfast. The one main evening meal that has become a tradition at the workshops was attended by 41 people. The workshop produced a 30 foot hull within the four days. I can do no better than to quote a leading French yachting magazine – *Loisirs Nautique* - Issue Juillet 2002 : "La formule magique de Derek L'enchanteur. Voila un homme qui pourrait bien changer votre vie! Pionnier de la construction sandwich, Derek Kelsall dessine et construit des bateaux depuis plus de trente ans. Il est aussi le pere d'une methode ingenieuse de construction – KSS. Ils etaient vingt-huit a Port-La-Foret en mai dernier pour sortir de leur chapeau une coque de 9 metres en trois jours." I am sure that most will get the meaning. An English translation does not quite read the same.

Leaving France, we went back to UK before going on to Florida then Colorado, which has become our second home. August we decided was a good time for a break. The Great Barrier Reef has always been on my list of 'must see' places. The Melbourne Multihull Yacht Club had given us a beautifully illustrated book on the Whitsunday Islands and this confirmed our decision to check the area out. Airlie Beach was the location for one of the business calls we needed to make. We arrived to find that e-multihulls were organizing a Multihull Rendezvous, with three days of racing and that

we would be welcome to join in with several multis to choose from. We certainly got a contrast between two days on 52 foot, high powered

"Room With a View" (Crowther), where 22 kts. was seen on the clock on several occasions on two days and the Granger cruiser – but equally enjoyable. We will be back. We have chosen Airlie Beach as the location for lots of friends and family to join us in October 2003 for the celebration of a milestone in our lives. From what we saw, the area would be one of the ideal multihull cruising grounds of the world. All multihull sailers should spot this on their world map. There are plenty of multis already there and you can expect a welcome should you visit. The Multihull Rendevous in August is the ideal time to visit. We were not the only international visitors. Russel Brown had sailed in to take part on his novel cruising Proa - which demonstrated a fine turn of speed.

The US tour came next. Just two workshops this time. The first was a new location in Caro, Michigan. Bob Walter is building a KSS 38s. Bob agreed that he would be very happy to set up the workshop if we could build one of his hulls during the four days. I had to give this some thought. We were set up to go to France by this time and I felt that 30 foot was pushing the limits somewhat. This was a very much larger project – but I rarely turn down a challenge and by the date we would at least have had the experience of making the 30 footer behind us. 4 days after rolling out the first gel coat for the first hull panel, we had a nice looking hull to show. We must be doing something right, as two who attended Caro, then followed us down to Texas for the next. Not sure whether this was that they had had so much fun or that they felt that they needed to learn more. Both said that they were very glad they came – particularly to be able to see RI in action for themselves. In Texas, we were back with our friends Robin, Glenna (Shaw) and family.

We did change the form slightly. From 2002, we had a pair of hull panels, which had been brought back to flat and we could set these up again to show the shaping process. Robin had taken a keen interest in using Resin infusion for his KSS 46 build project, since we started discussing the possibilities. He had got all the gear together just in time for the workshop. Two panels were produced during the workshop and we were delighted to see the results were as good if not better than any laminating that I have ever inspected in all the years that I have been working with the materials – and there had been no messy handling of the resin other than to mix the resin and catalyst in a bucket. Another confirmation that RI would do the job we wanted of it. Up to this time my approach to RI for owner builders was tentative. Now we could seriously

contemplate offering the method to all our clients.

There has been a project on my 'someday' list that goes back to 92, just waiting for the right opportunity. We had produced two 8 foot long cat hulls, that were simply bent from flat foam sandwich panels. They were nice looking, no rocker, power cat hulls, with gel finish and had taken just a couple of hours each to produce. This was my chance to try a larger hull. A 14 foot hull was made. The gel coat was laid at 10 am. By 1.30 pm, we had the hull pulled into shape and ready for more inside skin to complete.

From Texas, it was back to Colorado, but another side trip beckoned. Our 2001 workshop hosts in Tacoma, Tom Hales and Hugo Beutel had a KSS 39 hull all ready to shape, so I decided that I should go along to meet up with them again and be there for the open day that they had arranged. The yellow hull was the result, coming to shape from two flat panels within about an hour.

The ferry from Seattle to Vancouver Island is a trip worth making, and sure beats flying, so for me it was onto the ferry early next morning to see where they had got to with the 60 foot hulls from 2002. The first cat was near to being ready to launch and a second slightly larger was well underway. Back to Colorado for a few days before flying back to NZ. Just one more trip to make. Yvan Ducat had been at the Melbourne workshop in Feb 2000 and had decided that he would build a KSS 33s and that he would be happy to organize a workshop at his project in Busselton, S of Perth in W. Australia. This was also to be different and a challenge in that it would be the first full RI hull. Prior to this time, I had only been involved with small panels and one very simple 11m panel with one layer of glass on one side. As one or two people have pointed out in the past, in undertaking new projects at workshops, it is never a well practiced routine. The potential for things to go wrong is high but we have always taken the view that if things do there is a reason which those attending will understand. We never know exactly what we are letting ourselves in for. It came home to me once or twice during the resin infusion, when I was not quite so confident that we had got it right. However, it all went well. The only problem being that I had been perhaps over cautious and we had to spend some long hours attending the vacuum system waiting for the resin to gel.

RI is now an integral part of the KSS process for the majority of future KSS build projects. When I think back to the years I spent custom foam sandwich boat building, I think, how perverse that all this should happen after I have retired from the custom building business. At least my clients can benefit.

As usual, we like to make the most of our travel. We stopped off in Brisbane on the way back, took the tilt train up to Maryborough where we were met by Heather again, visiting from Tasmania and enjoyed the beaches and the company in Hervey bay. The highlight was a two day visit to the largest sand island in the world – Frazer Island – it is 120 miles long and 15 miles wide. The sand supports rain forests and fresh water lakes and streams. Driving 4 wheel drive Land Rovers on tracks deep in soft sand was like turning the clocks back to the time that I spent 4 years in the Sahara desert many years ago. The lakes have to be perhaps the best swimming water in the world – clear and warm and fresh in a quite beautiful setting.

RI was undertaken during the year at the three locations mentioned above. Each one used a different approach and different equipment. The end results in all cases is high quality laminating with ideal resin to glass ratios. The glass and the foam are laid down one time only which allows for greater accuracy. This can in turn be used for other savings, such as stopping the laminate short of the edge of the foam so that trimming of the panel to the final shape is trimming of foam only – dead easy rather than the dusty job of trimming the glass skins. The cleanliness and smell free environment, the elimination of the acetone to wash out the rollers etc., is all a welcome change, eliminating the perhaps one least attractive part of previous KSS building – not that KSS in hand laminating is bad. Clearly it is better on this score than other custom build methods where the laminating is onto boat shapes rather than on a table.

A number of improvements in the detail of KSS have come about during the year. I like the way that the workshops and the forums get people with common interest talking. The workshops particularly provide us with the opportunity to continuously refine our techniques. A fund of ideas keep immerging from the exchanges, all helping to improve the lot of the catamaran builder. Our German agent is now offering KSS kits and a new contact on the gold Coast, Australia, will be offering the same shortly. US is the market where we expect to find other suitable kit producers.

I originally got involved with multihulls with no more idea than to go sailing and fulfill my boyhood dream of sailing across the Pacific. I quickly came to the conclusion that there was plenty of room for improvement on the design and build practices at the time – and perhaps spending some time doing so would not be a bad way to go for a year or two. To be still finding new and better ways 40 years later is just as satisfying as it was when I started. My life has never been dull. The lesson – never give up seeking the better way.

A note for 2003. There will be more workshops. Get in touch by e-mail if you would like to be on our mailing list for information or just keep watch at [www.kelsall.com](http://www.kelsall.com).

We enjoy traveling together and meeting people as we do. We go to many different locations, where groups with similar interests gather and are keen to hear and see what we have to say and to show. It is truly the good life.

Paula and I wish everyone a full and happy 2003.