



AMATEUR BOAT BUILDERS' ASSOCIATION

May/June '06

ABBA COMMITTEE

Alan Coy	Treasurer	04142 666 77	9204 3043 (Hm)
Mike Beilby	Newsletter		9397 6209 (Hm)
Molly Coy	Secretary	0414 490 043	9204 3043 (Hm)

Contact any of these three people for information or clarification of Club issues or activities

LIGHTER, STRONGER BOATS IN THE 21st CENTURY.

Saturday, 22nd April saw us once again in Henderson, this time at the factory of Swarbrick and Swarbrick Yachts (which I had expected to be sub-titled "Cottesloe Yachts", but wasn't), the current home of production of S&S 34 yachts. We were taken in hand immediately by manager, Owen Hall, who, in the following two and a half hours, gave us the low down on all the technicalities, including the chemical ones, involved in modern, state of the art, fibreglass production.

Following a comment from one of our party, Owen initially explained the strong, but typical, fibreglass smell that pervaded the factory as being due to the styrene content in the resin used.

He explained that it was possible to hide it with an addition of, of all things, vanilla essence, but that since it was harmless, they didn't bother. Plenty of the chemicals used are dangerous when used in the open, however, and he described some of the precautions necessary, but many of these are less than vital when the present system of Vacuum Infusion Process (VIP) is used.

Owen first described the chemistry and molecular structures involved with resins, starting with polyester and going through vinyl ester and epoxy. He said, and showed, that the latter two would take much more bend than polyester (more, indeed, than the glass core) and so made for a much better structure.



The S&S deck, still inverted in its mould, beside the hull.

Stiffness of a panel was only as good as the thickness of that panel, however, but the panel thickness need not consist solely of glass and resin. If it did samples showed such a panel to be very heavy indeed. Other sample pieces had their thickness made up by plastic foam or end-grain balsa. These were a sandwich of fibreglass resin each side of a foam core and all were extremely stiff. He even had a photo of his own FWD supported at one end by a foam core sandwich, itself supported at about two foot centres with the load bearing in its middle. The sandwich was bowed an inch or two, but holding, and returned to straight when the load was taken off.



Close up of the rear deck lifting point, presumably to be cut off later.

The application of foam core was immediately evident when we were shown the deck structure for an S&S 34. This unit had been completed quite recently and had not yet been removed from its female mould. (two lift points were incorporated and connected to a pair of chain blocks for lifting). 95% of the area involved foam cores, the exceptions being hatch and deck edges, where more glass and resin was used instead. The completed hull shell, with bulkheads in place and in colour, stood alongside. It too used foam core. Owen explained that the application of foam instead of merely extra glass/resin made for a weight saving of 500kg in an S&S hull and deck with a stiffer product which would withstand higher rigging stresses as well.



The undecked hull of "Spirit of Rockingham"

The weight saved goes into ballast, pushing the ratio up to 50% - and the rig can be done up tighter as well.

Now, back to VIP. Basically, we were told, the infusion process involves laying up the whole job dry within a vacuum bag. Everything except the resin goes into a clear plastic bag which covers the mould and everything within it. A vacuum pipe, or several, is built in to go to a vacuum pump. The pump has to be capable of delivering a high vacuum (a full atmosphere or 30" of mercury is best) but not a great deal of air flow. Owen demonstrated one based on a car air conditioner and pointed to two others derived from milking machines. (I wouldn't have thought that dairy farmers subjected their herds to a full atmosphere of vacuum, but who knows?) On the other side an inlet pipe or pipes is also built in, with a tap incorporated, and leads to an open drum of resin. When vacuum is applied resin is automatically drawn out of the drum and through the glass/foam mix without the operator so much as getting his fingers wet! Folding and moulding the vacuum bag to the contours of the job takes time of course. Folding and pleating of the plastic to the shape of a yacht deck could easily take an experienced operative an hour or so. Then the infusion can easily take an hour or more as well, before curing sets in.



An older technology - Cameron and Hill Sorcerer of about 30 years ago, in for surface repairs, no doubt including osmosis treatment.

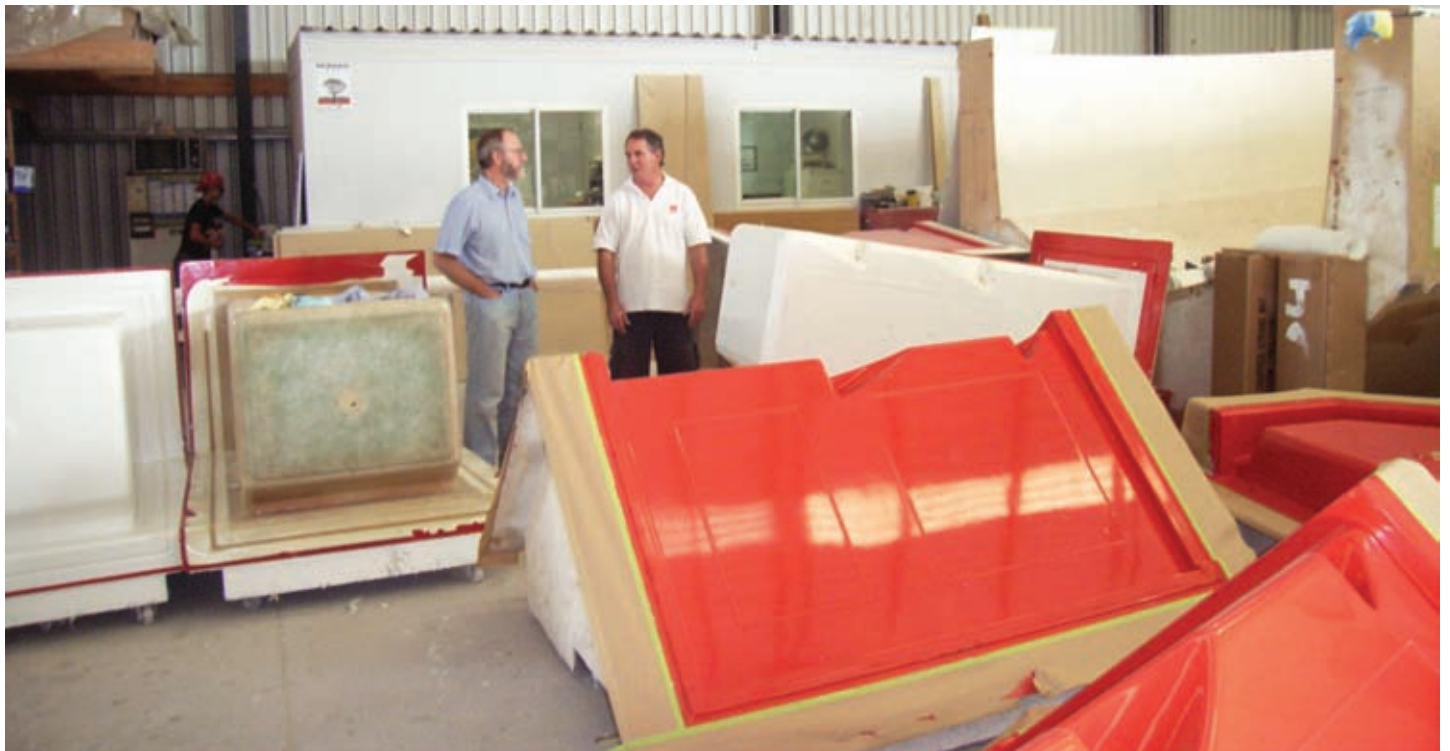
On the other hand, conventional hand laying up in the open could well take longer. The chief advantage of VIP, however, is the total avoidance of retained air bubbles in the matrix, whereas they were virtually unavoidable with open systems.

Having described the process in great detail, but in words only, Owen then took us into his office to show us a DVD on computer which illustrated all the steps properly, using as an example the infusing

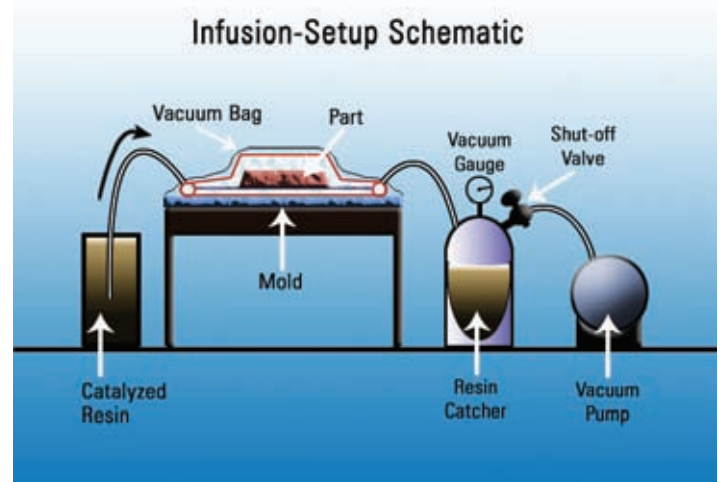
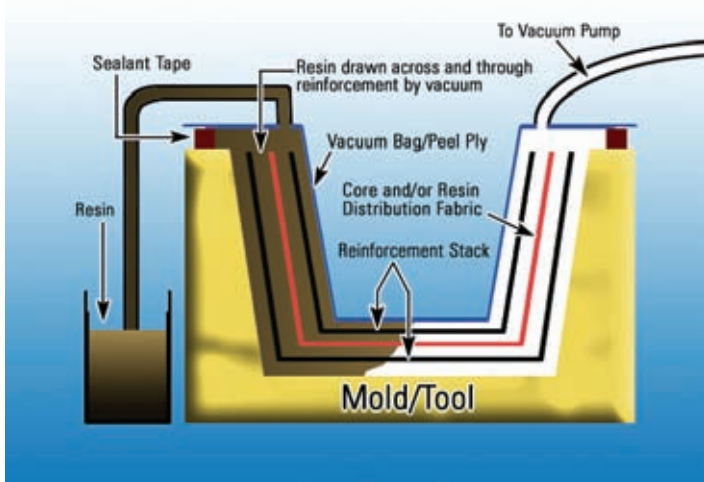
of a dinghy hull. In the infusing film resin could be seen drawn up into the vacuum bag quite quickly but it took a long while to completely wet out the matrix. I didn't time it but fifteen minutes or so would have been about it for the dinghy hull. It seemed slower of course, but so is the minute hand of a clock. The DVD was really a do it yourself kit for anyone aspiring to set up for the first time in a factory situation (which would explain why it cost about \$1600), and covered all the materials needed, pipes, taps and other parts, how to set up pumps, etc, etc. Having viewed all that, Owen pointed out that there were available short cuts when you got the hang of things. For example \$7/m vacuum pipe can be replaced with 7c/m good quality reticulation black poly pipe in 13mm! This can still be squeezed off repeatedly with modified Multi-grip-type pliers to seal vacuum in, etc.

So, although we didn't have the practical demonstration of vacuum-bagging which we had from Fabrice Allez at New Challenge Fabrications back in October, '03, the DVD replaced much of that and added more in the broader picture. And there was the chance to see the application in the form of a 34 footer as well. If you were lucky enough to participate in both visits, so much the better. Certainly we are very indebted both to Glen Swarbrick who made the visit possible but couldn't attend, and to Owen who conducted it at a very technical yet always interesting level. We were all surprised when we looked at our watches and worked out that three hours had slipped by as if they were only one.

Many thanks for your time and effort, Owen, it was much appreciated by all of us.



King-size Leggo - Owen explains the intricacies of shower recess manufacture.



REPORT OF THE LAST MEETING

WEDNESDAY, 3 APRIL. Committee Room SoPYC. Following a pleasant and ample Webber Roast & Smorgasboard meal, in the Club Rooms, the meeting convened at 8pm with lively discussions on what to do about keeping ABBA alive and well, plus how to handle the Library collection. Followed by the DVD "Storm on the Horn" (which is one section of an ABC Documentary series) projected on a big screen.

How to help keep ABBA alive and well.

1. Advertising Brochure -

Molly Coy volunteered to turn an existing Flyer mock-up into a draft brochure. Deadline next meeting (31st May).

2. Boat Register Project -

The idea to create and use, a project that would actively involve members contacting Yacht Clubs, other Boating organizations and individuals (in order to further promote) The Amateur Boat Builders' Association. A suggestion tabled by Alan Coy was that we work on building a register of 'interesting' boats on the 'Perth' rivers and coastal environs. To kick start this activity it was decided that:

(a) Alan Coy would, write a draft introductory letter and create a mock register document to table at the next meeting.

(b) Members volunteer to discuss the project with any individuals, clubs and other Associations that they are currently involved with or members of.

Tasks and deadlines need to be established at the May 31 meeting in order to continue to build momentum and make this happen.

Library Collection.

It was decided to re-issue the List of Books so that members could order books to be brought to the meeting by the Custodians. (for which role there were some tentative volunteers - to be confirmed).

STORM ON THE HORN 1929

This vintage footage, was shot by (the then 20 yr old) Captain Irvin Johnson on his first ocean voyage - from Germany to South America on the sailing ship *Peking* (we saw a great photo of her in Mike Beilby's recent presentation). The recording of life at sea is made even more amazing when you think of the size and type of movie cameras in the 1920's and given the weather conditions they endured. A storm in the Atlantic ocean which claimed 68 ships and the biggest seas off Cape Horn that anyone could remember.

ADMINISTRATION NOTES

MEMBERSHIPS

These are due as of 30 June, and payable. So far our only member paid up for '06-'07 is Matthew Luff who joined at Swarbricks'. Welcome, Matt, (no pun intended) – let's hope everyone follows your example swiftly. Fees are currently \$20 with electronic newsletter, \$30 for hard copy.
All fees to the treasurer, Alan Coy.

CALENDAR

WEDNESDAY, 31 MAY, TECHNICAL MEETING.
Member, Harry Speight will talk about his home project, a Farrier F82 folding trimaran. It's a cedar strip-planked exercise which we visited back in June '02. It's not yet finished but Harry will bring us up to date at the evening meeting on Wed, 31 May at 7.30 – 8pm at S of PYC Committee Room. Those of us in the know go early and eat at the club's smorgasbord evening meal (available from 6pm) good value at \$14.

SATURDAY, 10 JUNE, TOOLBOX VISIT.

Mr. Merv Holst of South of Perth Yacht club, welcomes ABBA members to visit his home built 36ft ferro-cement yacht. Merv and his wife have clocked up many thousands of sea miles since building "Leola" many years ago. They recently spent three months coast hopping. Merv is to tell SoPYC members of his adventures at a Cruising Division Meeting on Thursday, 13 July, in the Heritage room, SoPYC 7.30pm. ABBA members are most welcome at all Cruising meetings held on the 2nd Thursday of each month.

For the toolbox visit we will meet in the Bar at 2pm. SoPYC, Coffee Point, Applecross.

SUNDAY, 29 OCTOBER,

JAZZ FESTIVAL & WOODEN BOAT SHOW
Claisebrook Cove, East Perth.

This event, being organized by the East Perth Re-Development Corporation, Boating Industry Association and ABBA representative Alan Coy is still in the planning stage, but is shaping up to be a very exciting event and one where ABBA can get some much needed exposure and publicity. This opportunity came from our website, via the Wooden Boat Association link demonstrating the necessity of advertising. We need to have a brochure in place for this event, if not before.

NOTICES

A new member is wanting to build a Vertue 28ft yacht and is currently looking to buy plans. Can anyone help!