



# AMATEUR BOAT BUILDERS' ASSOCIATION

JULY/AUGUST '05

## ABBA COMMITTEE

<b>Geoff Leggatt</b>	<b>President</b>	9437 5271 (Wk)	9316 8624 (Hm)
<b>Vince Rogers</b>	<b>Secretary</b>	0407 799 230	
<b>Alan Coy</b>	<b>Treasurer</b>	04142 666 77	9204 3043 (Hm)
<b>Mike Beilby</b>	<b>Newsletter</b>		9397 6209 (Hm)

Contact any of these four people for clarification of association activities.

## MORE ON DESIGN

On Wednesday, 25<sup>th</sup> May we were to have been addressed by Alf Smallwood of Adhesive Technologies. Unfortunately, for the second time, he had to call it off, having returned later than expected from a trip to Ireland, and with his crook leg playing up. His office manager had the 'flu and so couldn't even take over. Fortunately President Geoff had the second of his design talks ready to go and so we still had an evening program for the dozen or so members who attended.

This was to be the second of his talks on "Basics of Hull Geometry, Displacement and Trim", titled "Volume and Displacement". This was to be a step on from the raw definitions he offered us in talk one, but was really more sophisticated definitions of terms relating to this particular topic, extending to formulae. Fortunately they were pretty simple formulae, involving simple algebraic expressions rather than calculus or trigonometry - I hate those, although I fear they might turn up in talk three.

It all started simply enough with Volume of Displacement, being the volume of the vessel below the waterline (but not how to calculate it, that presumably comes later) and the Waterplane Area, being the area of the hole made in the water by the boat and the Immersed Midship Area. And then, suddenly, we were into various coefficients, being the ratio of one measure of the actual boat to the rectangular plane or solid which it occupied. Thus the Waterplane Coefficient is the ratio between the waterplane area and the rectangular area contained within the waterline length and beam, and so on. In this way we covered not only Waterplane Coefficient but those of the midship area, the Hull Block and the Hull Prism. The hull block is simply the waterline length by beam by draft, but the hull prism is a little more refined, being length by the midship area - which can be quite

a lot less than the block. In his copious notes Geoff defined all these terms both in words and with a simple algebraic formula. In two cases he also used isometric views of the now-famous ABBA dinghy to illustrate the definition as well.

Geoff then went on to remind us of Archimedes principle which states that the mass of a floating object is equal

### **Rod Wallis's project features inside**



*Wide-angle lens exaggerates the narrow, plank-on-edge appearance of the hull.*

to the mass of the volume of water which it displaces. This led on to the definition of displacement which is the displaced volume of water multiplied by the density of that water. (fresh water is less dense than salt water and the different oceans have differing densities, too) All this left me wishing we were designing a planing hull, rather than a displacement one – but I guess that brings in new considerations anyway.

For the third and last stage Geoff went into calculations for Mass (but not volume) of the actual vessel, together with the positions of the Longitudinal, Vertical and Transverse Centres of Gravity. Since the ABBA dinghy is not an asymmetric Venetian gondola, the latter didn't matter much, but the first one tells us if the boat is going to trim bow or stern down, and the second will tell us if it's a high or low CG, which could affect things too. Included in this stage was a page of weights calculated for the dinghy, as constructed out of 3 and 4mm aluminium. **DON'T BUILD IT THIS WAY!** It will come to about 125kg, bare, for about 2.4m long.

Seriously, though, Geoff had calculated the areas and weights of all the hull components, including Hull,

Topsides, Chines, Foredeck, etc, etc, and then allowed 75kg for each of three passengers. He'd then calculated the centres of gravity of all components and taken moments about base points to calculate the longitudinal and vertical centres of gravity. I'm not going to attempt to summarise the whole mathematical process here – it can't be done, but Geoff could supply the notes if you want them and weren't present. As he warned us at the time, the calculations are mundane but important. Just be thankful that we live in an age of calculators and computers. At least I can drive the former, if not the latter!

Many thanks, Geoff, for all the trouble you went to in preparing this talk, and in presenting it, including all the butchers' paper diagrams run up at the time by way of further explanation. No, I didn't begrudge the use of the paper (it was probably recycled anyway) any more than I begrudge the cutting of trees to build boats – that's what life's all about, isn't it? Many thanks too, to Mike Wade who, although he missed the previous talk on English canals, lent me four different publications on parts of the canals which he'd acquired during a trip to Old Blighty last year. It all made for a very pleasant and informative evening.

## **ANOTHER OLD TIMER – REVISITED**

On Saturday, June 4 we made a return visit to Rod Wallis's place in Baldivis (read: North Mandurah) to see how he's going with a total rebuild of what was probably, originally, an old fishing boat. When we last visited, back in '00, Rod had stem, keel and stern in place, all the new ribs and was half-way through planking, from the keel up. Unlike most rebuilders, he wasn't using the old planks as templates, being dissatisfied with the original plank widths. He was, instead, spiling all new planks from scratch – just like a new boat.

Rod has also done more work on the original 12m x 6m boat port, enclosing it on all sides to make it much more weather proof. Clear plastic encloses the northern end and there are lots of roof skylights so the natural light is way better than average.

In the intervening five years he's finished the planking, raising the sheerline a little in the process, and much more besides, but there's still a long way to go. The planks are laid with about a 3mm caulking gap, which normally with jarrah, many experts would say was not enough to allow for taking up water. Rod, however, has sealed each plank with paint on the inside and Everdure on the outside, before fitting, which should reduce the water take-up.

Now all deck beams, nicely laminated, are in place, and the deck clad with 9mm ply. The cabin sides and bulkheads of 19mm ply are all in place, as are the coach roof beams (see photos). There's also a cockpit floor in place, concealing the 28hp Yanmar which is still

sitting in its final resting place. Another big job almost completed is the filling of all screw and nail holes in the external hull. The planking will eventually be caulked with traditional red lead and cotton – none of these fancy modern synthetics, thank you.

Five years ago I reported the boat's length as 26', but Rod told us this time that she's 28', and she certainly looks the larger size. Since she has a shallow, full length keel (she certainly won't turn very tightly) as much of the ballast as possible needed to bring her up to 4.5t weight will be fastened to this member as a full length external lead shoe. More ballast will be added internally as lead ingots. The biggest change in plans over the five years has been the acquisition of a complete set, second hand, of gaff rigging, including sails. The spars are currently in the roof of the attached shed. So she goes from being a launch to at least a motor-sailer, if not a yacht. With the higher sides and full standing headroom, I think motor-sailer is more apt.

In his spare time (SPARE TIME??) Rod plays around with future plans for much further down the track, particularly with electrics. He's been experimenting with tungsten and halogen lamps and even LEDs, looking for the best light for minimum wattage. Also in storage I discerned a pile of about ten unused jarrah planks and maybe five or six grown timber curves, cut from raw trees and apparently surplus to requirements. I know he had trouble getting really straight-grained jarrah for planks, and real grown timbers are like hens' teeth, also.



*The generous cockpit almost complete. Will have a top over. Note Samson posts*



*Stern quarter view, propeller shaft in place, access over stern.*



*Deep forefoot in evidence in this bow shot. Rivet holes need filling here.*



*The forepeak, through the main bulkhead. Ribs are laminated.*



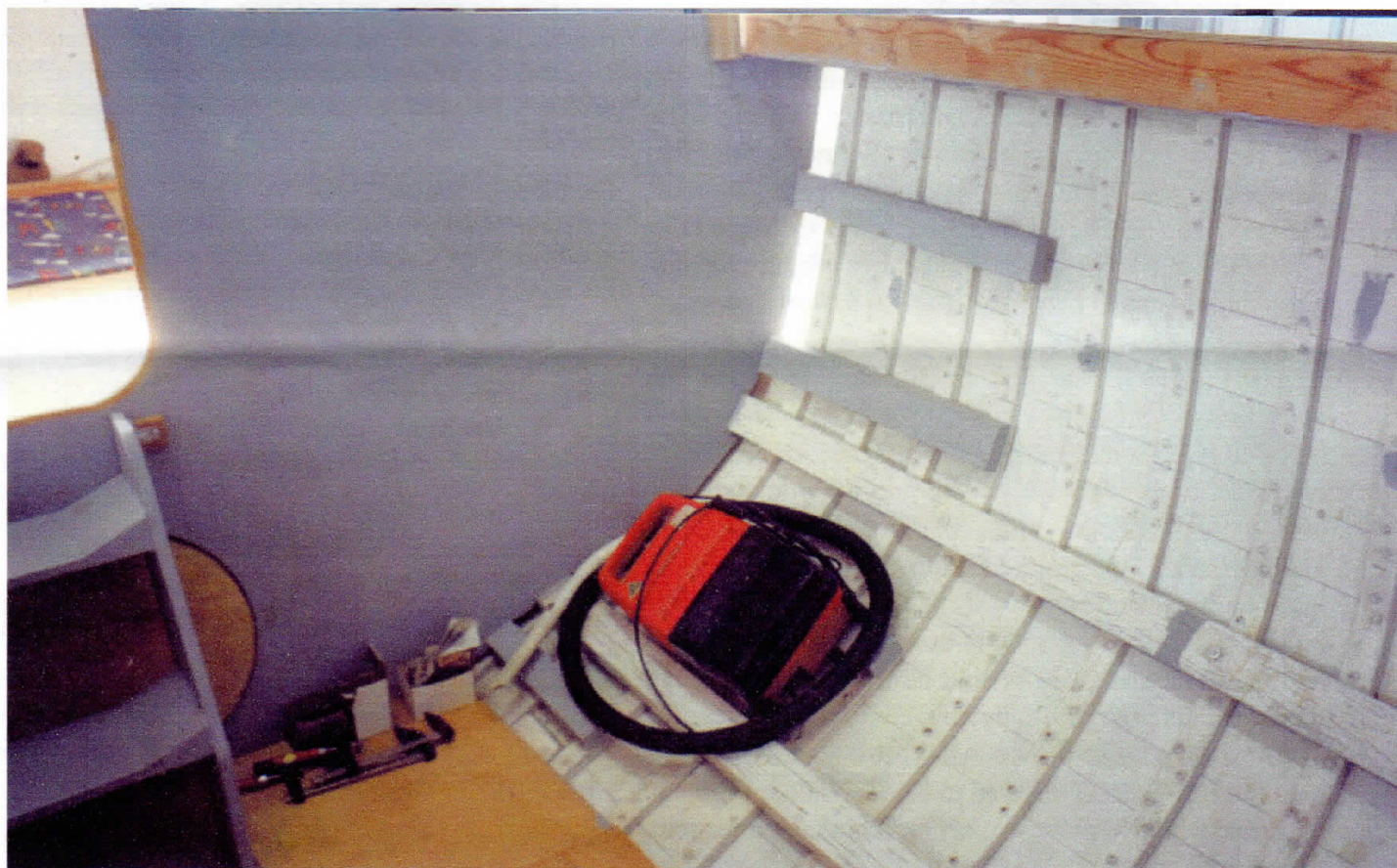
*Companionway steps, angled for use when heeling.*

#### **VALE: GRAHAM (TUPP) LAHIFF**

*Some of you may already know that Tupp passed away, quite suddenly, recently, after a brief illness. He was proprietor of the Fremantle Wooden Boatworks to which we've made visits, most recently this year. His death leaves a big hole in the West Australian wooden boat scene. His school, which provides several apprentice-level courses, will run until the end of the year. I understand, but what will happen after that is still unclear.*



*Across the coachroof – Rod (l) talks to Harry Speight and Peter Leggatt.*



*More ribs, and the vacuum cleaner, clearly recently used.*

So clearly, when he found a supply of something he made sure he had too much of it, rather than too little.

Along the way Rod has managed to acquire a better than average set of power tools, both fixed and hand-held, including a Triton Workbench and a very luxurious mitre/draw saw. In fact, for Rod the getting there appears to be more than half the fun (and Chris Davis understands this). And I must admit, the biggest two boats that I built were at least as enjoyable in the

## WOODEN BOATS OVER AMERICA

This was the headline which caught my eye in the second last issue of Australian Amateur Boat Builder. It turned out to be an article by Robert Ayliffe of Duckflats Wooden Boats fame, announcing his intention to conduct a second wooden boats tour in the United States. He first did it five years ago in 2000. At that time I decided I had better things to spend the money on and so, put it in the too hard basket. This time, however, Marg and I decided to reconsider the idea and so wrote to get the low-down. It turned out to be really quite affordable, considering the specialised and individual nature of the tour and so we're both going.

We leave Sydney on Sept 6 and spend about three weeks in the States visiting boatshows, boatbuilders and museums. After the return of the main group, Marg and I will spend about a week longer just seeing New York in a little more detail. Providing we return by Oct 6, and by the same airline, we can still get the full discounted airfare which the organisers have negotiated.

We are now scheduled to land first in San Francisco and on the arrival day will probably walk the Golden Gate Bridge and explore Fishermen's Wharf. The next day is expected to be a day chartering the large scow schooner "Alma" around the harbour. The third and last San Fran day can include a trip to Alcatraz or cable car sight-seeing, etc. We then fly north to Seattle, overnight there and go a further 50km to Port Townsend to spend three days at its wooden boat festival. Apparently we'll need that much time there – it's that extensive. In previous years it's received rave reviews in Wooden Boat magazine. Then it's back to Seattle for two more nights (possibly including a border crossing into British Vancouver) before flying to the East Coast via an aircraft change in Chicago. We're not stopping in this area, unfortunately, although there used to be a huge lot of traffic in wooden vessels on the Great Lakes before WW2 and there should be traces of it still, but the agenda is pretty full anyway.

The first thing we see in the east is the USS Constitution, then the Herreshoff Museum in Rhode Island, followed by a road trip to Mystic Seaport in, I think, Connecticut, for a four night stay. We then go by road to New York for three nights with a lot of sightseeing. Then it's

building as in the sailing. Trouble was, I didn't realise it at the time and probably rushed each project needlessly, just to get in the water. So don't expect Rod to wrap the project up by next year, or anything like that – he's clearly getting too much enjoyment along the way.

And to cap the visit off, Karlene and Rod put on another scrumptious afternoon tea, including home-baked muffins and other delights. Why weren't you there? It was a very interesting afternoon, thanks Rod, and we wish you all the best as the project progresses.

south again to see Chesapeake Bay and a well known museum there. Then it's into Washington for three nights, including the Smithsonian Institute. Finally, the main group flies home on the 25<sup>th</sup> Sept, while the Beilbys return to New York for a further look. Phew!

## ADMINISTRATION NOTES

Since we've had no indications of dissatisfaction with either the venue or meeting night we'll continue with the new arrangements of the last Wednesday of every second month at SoPYC. The venue is good and there's an excellent meal available there at very reasonable prices. Don't forget, the meeting is in the Committee Room, first on the left as you enter the eastern doorway. Parking is available IF you press the button on the intercom at the gate and wait a bit.

Our next **TECHNICAL MEETING** will be on Wed, 27 July. The guest speaker should be Alf Smallwood, talking on epoxy adhesives and related products marketed by his company, Adhesive Technologies. There's just a faint chance that Alf may be hospitalised for an operation on his crook leg then. If that happens our back up will be secretary Vince Rogers describing his home boat building project.

For the forthcoming **TOOLBOX VISIT** we will be welcome at the private maritime museum of Barry Hicks at 49 Lacey St, Cannington, from 2pm on Saturday, 6<sup>th</sup> August. This is a great little museum of nautical memorabilia, packed to the rafters of a larger than average shed/workshop in Cannington. No whole vessels, other than a couple of dinghies, but masses of bits and pieces from full size ships, vintage tools and the best of the Brian Lemon scale model boats collection. This is not to be missed.

## CALENDAR

**WEDNESDAY, 27<sup>th</sup> July**, Technical Meeting at SoPYC, at 7.30 for 8pm (earlier if you're eating there. Alf Smallwood on epoxies, etc.

**SATURDAY, 6<sup>th</sup> August**, Toolbox Visit to the Hicks Museum, 49 Lacey St, Cannington, at 2pm. A great little museum, not usually open – don't miss it.

**WEDNESDAY, 17<sup>th</sup> August**, 7.45pm, Committee Meeting.