

JAN/FEB '02

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

CURRENT THINKING ON ELECTRICS

Our November meeting, on low voltage electrics, was different in at least two ways. Firstly the guest speaker's topic was an old one revisited, something we usually try to avoid. However in this case the subject had last been heard at least a couple of years ago and there's been changes in both our membership and electrical technology in that time. Additionally, members might now be contemplating, or working on, a boat not even planned at the previous talk. The second difference was the venue for the talk. In my memory all evening meetings have been held at MBSC, but on this occasion the speaker, Tony Horniman, spoke at his business, the 12 Volt Shop in Kewdale. The idea was Tony's and allowed him to show any pieces of stock which came up in discussion, as and when needed, rather than taking a guess at what would be needed and bringing a very limited range to the talk. Further, members were able to prowl around the shelves

extensively, examining stock for themselves and planning projects both before and after the main meeting; so the change obviously worked well. Hospitality wasn't lacking either - Tony had enough chairs for our bums and all the supper necessities, urn, coffer mugs, etc, to hand to ensure our comfort.

He started the talk with a brief history of the 12Volt Shop business, which has been operating for 15 years, the last four being at the present site in Kewdale, and which caters to all voltages below 100, both AC and DC, although 12 volts seems the most needed, hence the name. Tony explained that the business does much more than simply retail imported products. It designs special systems and even exports them overseas. Of the retail products, German and Swedish sources are preferred to American, and quite a few are Australian made and of very high quality.

Much of Tony's talk became a question and answer session and with the ready availability of any product to illustrate the answer this worked better than it would have at our home base. Refrigeration was the first topic and he explained that it was extremely difficult to supply enough current for the task in Australian conditions, if only because fridges are all designed in Europe and lack adequate insulation for our temperatures. The problem peaks in cars and 4WD vehicles which are often locked up in the sun and may endure temperatures of 60°C. In these conditions the fridge may just operate as a battery flattener. The cure, in part, is to provide more insulation and this option is probably more available to the amateur boatbuilder than the motorist or caravanner. Tony estimated that 2" extra insulation on a fridge would reduce current consumption by 40% so there's a thought to start with.

Ammeters came up next and Tony explained the virtues of external shunts. Basically an ammeter only measures a very small part of the current in use, the bulk of it passing unimpeded through a "shunt". Most shunts are built into the back of the meter but this means that all the current in use must be brought to the meter and away from it in heavy duty cables - this can be a tall order in a 40' boat. If an external shunt is used it can be kept close to the basic circuit, reducing the lengths of heavy duty cable used as only light cable needs to go to the meter. Don't try to buy a digital meter from Tony, by the way. He only believes in the analogue variety as he says it gives more information at a glance (what's above and below the actual reading).

A long time was spent on the subject of batteries, in particular multiple battery systems, with an emphasis on deep cycle batteries. Too much was said to list it all here but early on Tony exploded the myth about having all batteries in a set the same, but he

does prefer separate switching so that each battery is charged separately and then disconnected from the charging circuit. That may be fine in a boat but Yours Truly is too lazy for that and uses a different system in his campervan - simply a solenoid which joins the batteries in parallel only when the ignition is turned on, but the solenoid itself must be watched to be sure it's working efficiently. Tony also said that they can remove the sulphate which may build up on battery plates by charging at higher than normal voltage (at least 16v) although an ordinary domestic charger can't reach that point (solar cells can, however).

Solar cells created a lot of interest, too. The shop sells mono and poly-crystalline types as well as the slightly less efficient but often flexible amorphous varieties. For boats used in weekender situations quite small arrays will be able to recharge batteries mid-week. For live-aboard arrangements the necessary arrays can get much more expensive. What I want to know is how do you keep the array pointing at the sun when the boat is swinging on a mooring? Maybe there's no answer to that one.

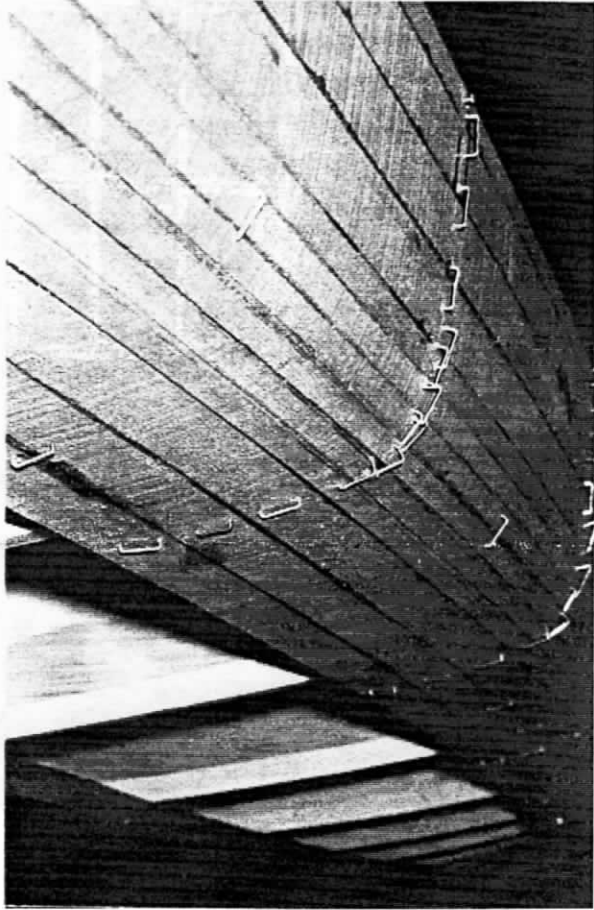
The shop stocks an extensive range of modern, internal lights, both fluorescent and directable halogen; a much better range than caravan shops in fact. Quite a bit of time was also spent on 12v versus 240v appliances used with inverters (because the 240v variety is often cheaper) and it was surprising to learn that Australian-made sine wave inverters are 88% efficient and make the use of 240v appliances (with the exception of fridges!) quite practical.

A lot more was said than has been possible to report here and everyone found material of interest to them. Once again a great evening with much thanks due to Tony.

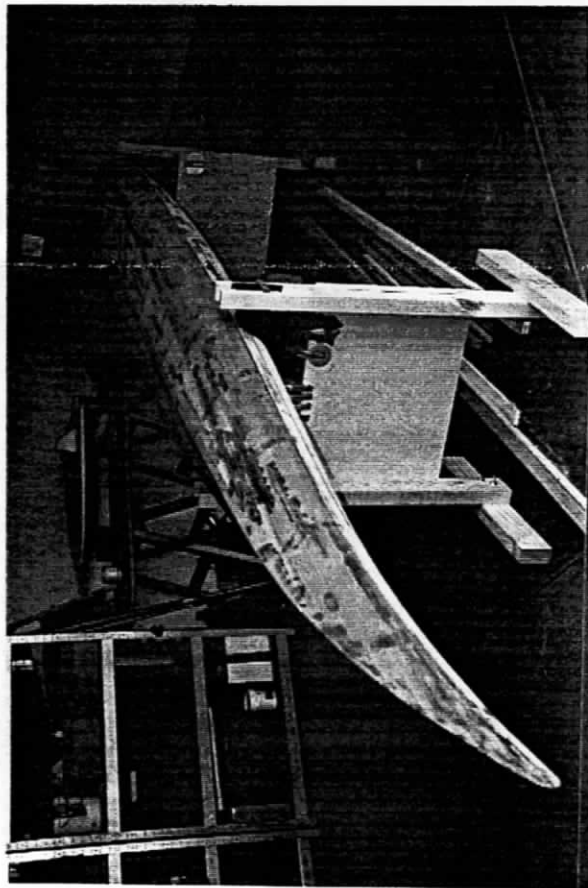
A STRIP PLANK SEA-KAYAK



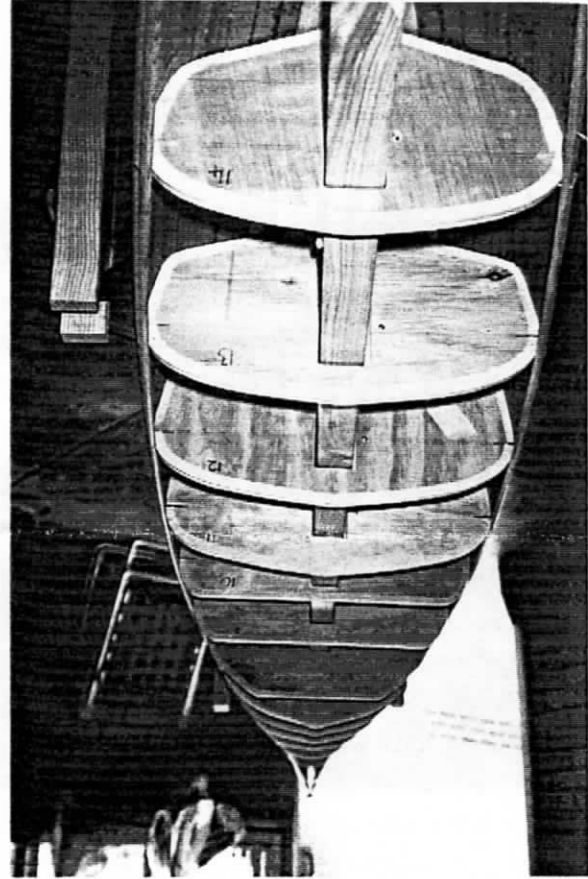
Nigel (l) and Geoff survey the upturned hull.



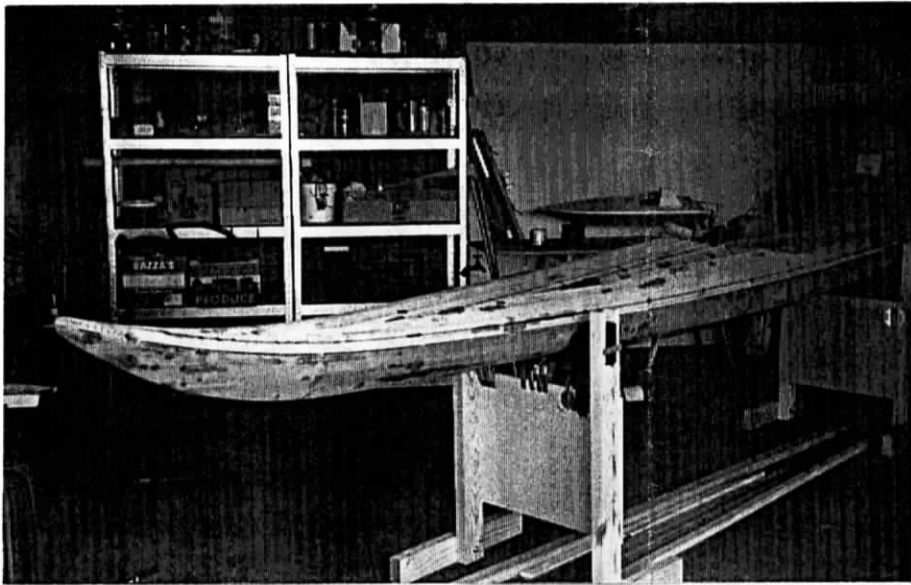
The bilge turn during planking. Note the narrow planks used here. Nigel pic.



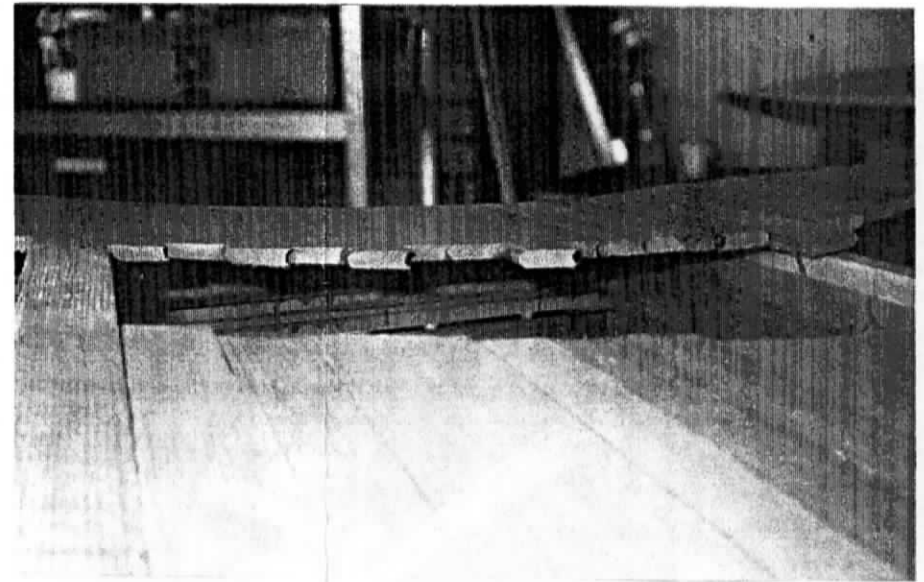
The long, upturned bow of a touring sea-kayak. Note the plank filling; not much, really.



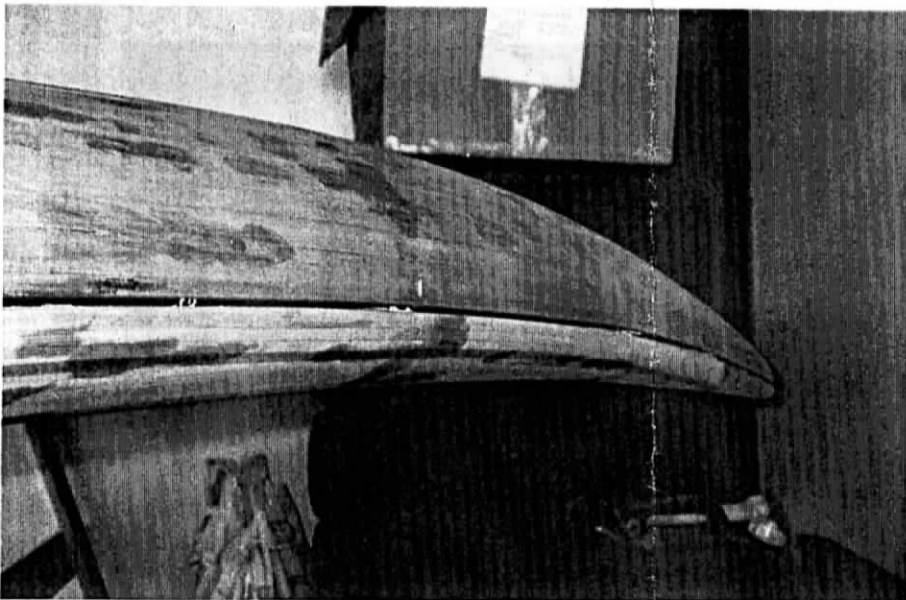
The hull turned over, ready for the deck. Note tape around frame edges. Nigel pic.



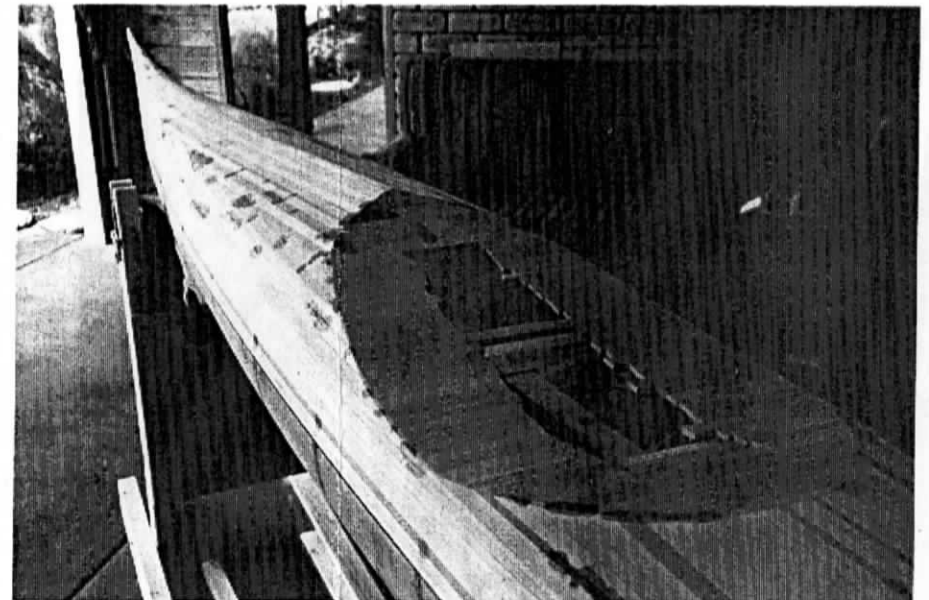
General view of the sea-kayak, right way up.



Bead and cove machining visible on ends of planks used to form side deck close to cockpit. This area will only be fully finished after the fibreglass mould is taken.



Bow detail, showing the 3mm gap incorporated between top and bottom to house a shelf during the mould-making exercise.



The full foredeck and cockpit area, minimal filling again.

A TRIP OFF THE OLD BLOCK

December's Toolbox visit left big boats well and truly behind with a visit to Nigel Winter's

sea kayak project in Yangebup. This is a relatively small and simple exercise which most beginners could handle, although Nigel used a few computer skills to start with.

First he started with a book by Nick Schade, "The Strip-Built Sea Kayak", (Ragged Mountain Press, 1998). This very complete work, purchased at Boffin's, details all the jig assembly and strip planking steps as well as study prints of three designs including tables of offsets for each. Nigel chose a longish single kayak called "Guillemot". First he entered the offsets into a computer CAD programme which allowed him to draw up the full-size lines and check for fairness. Next, he took the Auto Cad File to a business in Wangarra, called CAD-Cut, and had them cut out the actual building mould frames using a computer controlled router head. At this stage he made his only deviation from the book in having the frames stretched by 3mm at the deck seam to accommodate a small shelf of that thickness which will go in briefly while he uses the hull as a plug for a fibreglass mould. This will be done after sheathing the outside of the canoe but before removing it from the jig.

The stage at which we saw the project was with all planking complete and roughly faired down. The cockpit wasn't completely coamed as that would make the fibreglass mould removal almost impossible. When he got the frames home Nigel assembled them on a central spine of a single piece of dressed 4"

x 2" pine (no doubt after a long search for a straight piece). He also purchased a wide 4m x 25mm plank of Western Red Cedar and cut it up into strips measuring 25mm x 6mm on a bandsaw at his place of work (Oceanfast, yet again!). Using a set of cove and bead router head cutters on a Triton workbench Nigel then milled cove on one side of each strip and bead on the other. Both were a full semi-circle and served to keep strips well lined up in the fitting and glueing stage. The glue used is simple "Aquadhere" which doesn't have to be waterproof because of the internal and external 'glass sheathing. Given the huge total area of glue contact, it's strong enough and doesn't present the problems of internal surplus glue removal that epoxy would. Planking is pretty straight forward except where it occasionally comes together from two directions, necessitating the hand carving of some short sections of cove into bead and careful fitting. Also, as the design has a very flat bottom and stiff turn of bilge, this area was planked with planks only 12mm wide to facilitate the turn.

All in all, it's a very neat job with only minimal micro-balloon filling for some very small gaps. The pictures, I hope, prove this, as well as adding to the story above. I've no doubt Nigel will do as good a job in sheathing, mould-making and finally finishing off this exquisite boat. The visit was wrapped up with the Winters presenting us with a delightful outdoor afternoon tea which was to have included a barbecue except that all visitors decided it was too soon after lunch. Truly a great visit. Many thanks, Nigel.

TO LET: BOAT BUILDING SPACE, open and under cover. Suit to 16m, NAVAL BASE.

FOR HIRE: BOAT MOULD, 10m f/glass yacht, fin keel, canoe stern, American design by J.P. Creluck, 1985.

Enquiries for either of the above to Peter Dedman, ph 9528 2257.

ELECTRICAL INSTALLATIONS ON BOATS - from Rob Sewell.

The following documents are worth consulting:

1. AUSTRALIAN STANDARD 1799 - SAA SMALL BOAT CODE.
SECTION 8 - Electrical Installation - Amongst other information, gives colour code for marine wiring and voltage drop for cables.
2. LLOYD'S REGISTER OF SHIPPING - RULES AND REGULATIONS FOR THE CLASSIFICATION OF YACHTS AND SMALL CRAFT, Pt 3, Chapter 4. Gives recommended types of cable insulation material and current rating. Section 5 on lightning conductors could be of interest to larger cruising yacht builders.
3. THE ASSOCIATION OF AUSTRALIAN PORT AND MARINE AUTHORITIES - Recommended Uniform Requirements for the Survey & Manning of Commercial Vessels - ENGINEERING SECTION - Pt 4, ELECTRICAL. As the title states these requirements are for commercial vessels but worth considering for robust construction and durability of the electrical installation. (only sited in draft form. Check with Geoff Leggatt or John McKillop to see if it has been issued.)

Tin-coated copper wiring does not appear to be a requirement of any of the above codes; however it would seem to be a worthwhile precaution against corrosion.

ADMINISTRATION NOTES:

MARCH MEETING: We'll mention this first, 'cos it's important. This will be a show and tell evening and we're looking for speakers NOW. Have you got a project going that we don't know about? Tell us. 5 or 10 minutes is all it needs, and we can project plans and photos in several ways. If you can contribute, see a committee member soon.

29 JANUARY MEETING: Skip Lissiman will talk about Cowes Week and the America's Cup Jubilee sailed at Cowes in 2001 (August, I think). This will be a great opportunity to get all the facts and nuances, right from the horse's mouth, direct from the foredeck and the cockpit of Australia II. MBSC, upstairs, Perth end, 7.30 for 8.00pm - don't miss it.

FEBRUARY TOOLBOX MEETING: Once again, your full attention is needed here, because things differ from the usual pattern. **THE OCCASION WILL BE A TUESDAY**

EVENING, 12 FEBRUARY, NOT A SATURDAY. THE VENUE IS PETER MILNER'S FIBREGLASS PRODUCTION WORKSHOP at 21 POSSNER WAY, HENDERSON, between 7.00 and 9.00pm. Among Peter's earlier credits are the Foundation 36's, raced, I think, from RPYC, and the current major project is a 45', one-off design, about three parts finished, together with several 23' power boats. This should be another evening you won't want to miss.

LIBRARY BOOKS TO THE JANUARY MEETING: It was decided that the general topic will be **FITTING OUT**, so if you're at that stage, now's the time to borrow.

FORSALE: GAFFRIG, (2 jibs and main) incl. all spars and rigging, suit 14' hull. Precise dimensions, price, etc, from the editor or ring vendor on (02) 9540 4037.