



# AMATEUR BOAT BUILDERS' ASSOCIATION

SEPT/OCT '01

## ABBA COMMITTEE

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<b>Chris Davis,</b>	<b>Treasurer,</b>	ph 9222 5664 (Wk)	9387 5042 (Hm)
<b>Mike Beilby,</b>	<b>Newsletter,</b>	ph 9397 6209 (Hm)	<mikmarg@iinet.net.au>

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

## CASTING AND ITS APPLICATIONS

*Chris Davis*

Our guest speaker for the 31 July evening meeting was Mr Bob Murphy of Ausco Products in Dianella. Bob brought with him a variety of cast bronze boat fittings together with some patterns, catalogues of Ausco's standard range of castings and some photographs of their factory and production floor.

Bob has been in the casting business for around forty years and his knowledge and experience showed through in the very interesting talk that explored all aspects of the subject as questions flowed from the members present.

The evening commenced with Bob addressing the fundamentals of the casting process using a bollard as a demonstration piece. Ausco are one of the only foundries in Western Australia still using green sand casting

techniques. They use Northam loam that is compressed into the top and bottom moulding boxes with a hand held 'peg ram'. The casting sand needs to be at the correct moisture content when pouring the metal so that it is wet enough to hold together but not so wet that it can cause the metal to blow it apart. Some of this sand is salvaged for re-use but the area around the casting is burnt by the hot metal and this sand becomes waste.

The next step is to place the pattern into the compressed sand. Bob explained that patterns may be made from many materials including wood, steel, plaster of Paris and even Plasti Bond. Patterns need to have radii on inner corners and a slight relief angle on flat surfaces to ensure that the pattern will come away from the moulding sand satisfactorily. Adequate allowance also needs to be made for the shrinkage in the metal as it

cools. The figures quoted here were 3/16 inch for a 12 inch casting in bronze or 1/4 inch for a similar casting in aluminium. A polishing allowance of 1/8 inch should also be included in the oversize of the pattern. For those of us who may wish to make our own patterns, Bob recommended undercoat as the best finish and this must not be acrylic or other water based paint. For some castings, such as skin fittings, a core is required to be mounted in the moulding box and these are available in diameters from 1/4 inch to 4 inches.

Questions then focused on the metals available to the foundry man. The standard material which Ausco use for most castings is aluminium bronze LG2 (known as gunmetal) that Bob believes is good value for money for marine applications in terms of strength, durability and cost. An alternative grade of bronze known as 88/10/2 may be slightly better but is \$2/Kg more expensive. He noted that Ausco no longer caste brass, as the zinc component of this metal smokes badly and causes problems for foundries like his which now find themselves much closer to residential areas than once was the case.

When it finally comes to pouring the metal, the most important issue is to remove it from the furnace and cool it in the crucible to the correct temperature for the particular casting. For example, when casting bronze, thin sections need to be poured at 1200° C whereas for a thick section like the bollard, metal at 1100° C will be required. For aluminium casting, pouring will be carried out at around 700° C. All Ausco castings use metal raw material that is certified by their

metal suppliers.

Bob completed the discussion by talking about the finishes that are available on Ausco castings. Bronze fittings of most interest to members can be supplied polished or with a chrome plated finish. For polished items, a subsequent coating of a clear finish such as Watty Incrylac will prevent the bronze from tarnishing. If required, Ausco can also supply raw castings for buyers to complete the refinishing themselves.

By way of demonstration, Bob showed a machined and polished bell that Ausco make in a range of sizes. He explained that the ring tone is dependent upon the tin content in the metal. These bells have been tested for applications where the ring tone is required to meet certain compliance standards.

Informal discussion continued over tea and coffee with members continuing to find new questions to explore with Bob. We were also able to inspect in more detail the range of fittings that Bob had brought with him. These included hinges, latches, portholes, skin fittings, fuel fillers, cleats, fairleads and of course the large bollard. Bob has also left a full catalogue of the Ausco range with us for our library.

This subject generated a great deal of interest amongst members present and we are indeed very appreciative that Bob was able to join us and share so freely his knowledge and experience in his field gained over so many years.

### **OVERDUE!**

That's right - nearly every member's subscriptions are currently unpaid. If you fit this category, please bring \$25 to the next meeting (Tues, Sept 25) and square up with Chris.

### **TO LET**

BOATBUILDING SPACE, Open and under cover, suit up to 16m, Naval Base.  
Enquiries to Peter Dedman, Ph 9528 2257

## NEW BOAT LIFE ON VICTORIA QUAY

On the 11th of Aug we were treated to an inside look at a boatbuilding enterprise with a difference. For the last two or three years Chris Bowman has operated a boatbuilding and maintenance/repair business from the eastern three-quarters of "C" shed on Victoria Quay, Fremantle, sharing it for most of the time with the ticketing office of one of the Rottneest ferry companies. Some of the projects in the shed are privately owned and merely leasing space from Chris, others are the responsibility of Chris and his employees and there was a fairly even mix of the two evident on the day we visited.

As luck would have it, your scribe was one of the last to arrive on the day and I found nearly everybody else congregated aboard Gene Merrill's magnificent Herreschoff 36', the original design, "Nereia", dating to 1939. This vessel has been underway for some two years now and is starting to look fairly complete. It's employed one shipwright just about full time with up to four others at various stages, plus Gene himself, of course.

The construction has been upgraded to strip-plank, fibreglass sheathed, and the weight-saving has allowed an increase in ballast to over 50%, while the cleaner interior means that fuel and water tanks can go lower. This is one traditional boat that is going to be beautifully stiff in a seaway. Inside, all the bulkheads are in place, and most of the lockers, and Gene is starting to fit clear finished trim timber to ply edges, etc. For this role he has selected she-oak which will not only look great under varnish, but as Gene points out, is very stable under varying degrees of moisture, unlike jarrah and many other local timbers.

We finally left Gene to his elegant timber lady and followed Chris to his traditional block-

making exercise, a big job in itself since all of the boats in the shed are traditional boats. Like Barry and Robin Hicks, Chris makes his own, but by the armful at a time. The various wooden components are all cut out, super neatly, by laser. Laser even cuts the small, square holes needed for the copper nails which eventually rivet cheeks and spacers together. Various jigs facilitate the repetitive, router shaping of the cheeks and spacers as well as the letting into the outside of each cheek an Australian ha'penny. (What's a ha'penny, Virginia?) Chris, I might add, would talk about anything except his supply of ha'pennies - that appears to be his only industrial secret. He must have a lot to call on because, as far as I could ascertain, they are even incorporated into blocks being made for a big restoration project in San Francisco.

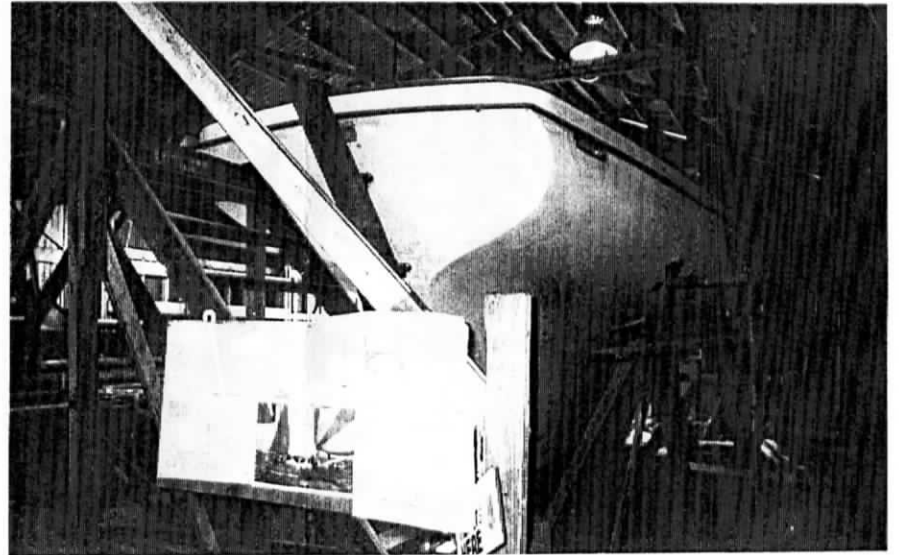
Since Chris is active in the RFBYC Couta boat fleet, one can always find at least one of these beautiful open yachts/working boats in the shed and on this occasion there were three. One was an original Melbourne boat, in for a repaint, one was a Chris-designed and built one in for general maintenance and the third was a new one, also designed by Chris, just starting up. This latter had keel, stem and transom in place, with the centrecase just going in. Further along there was a Queensland kit "Secret", supplied by Scruffie Marine and assembled by Chris's boys. This small, trad-style yacht is actually a ply, hard chine hull, the chine being softened a little with a filler piece (see photo) but one can certainly see what a firm turn of bilge this design has. Next to the "Secret" was the only non-sailing boat in the shop, an elegant, Bruce Bennet-designed, 34' launch but we didn't find out very much about that one.

Over against the far wall was the biggest, most difficult project in the shop; a private

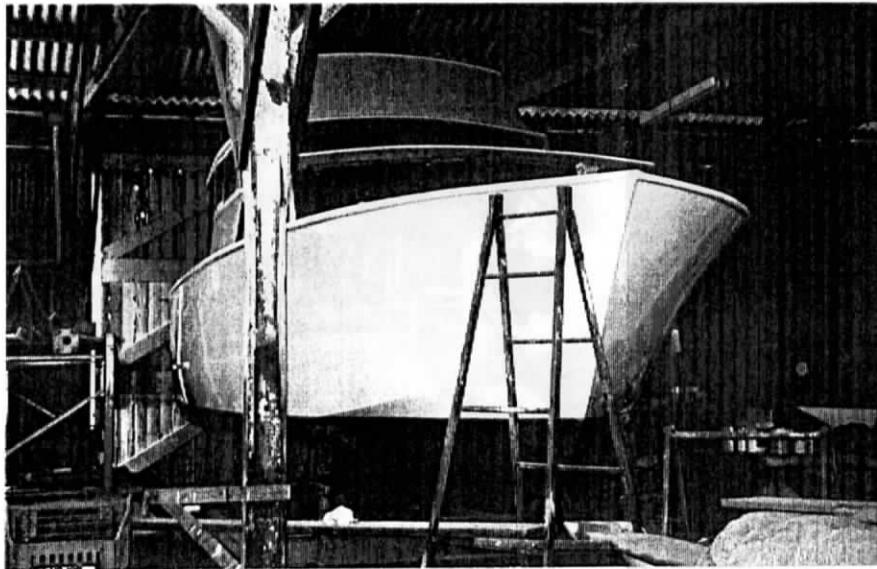
THE A, B, C of "C" SHED



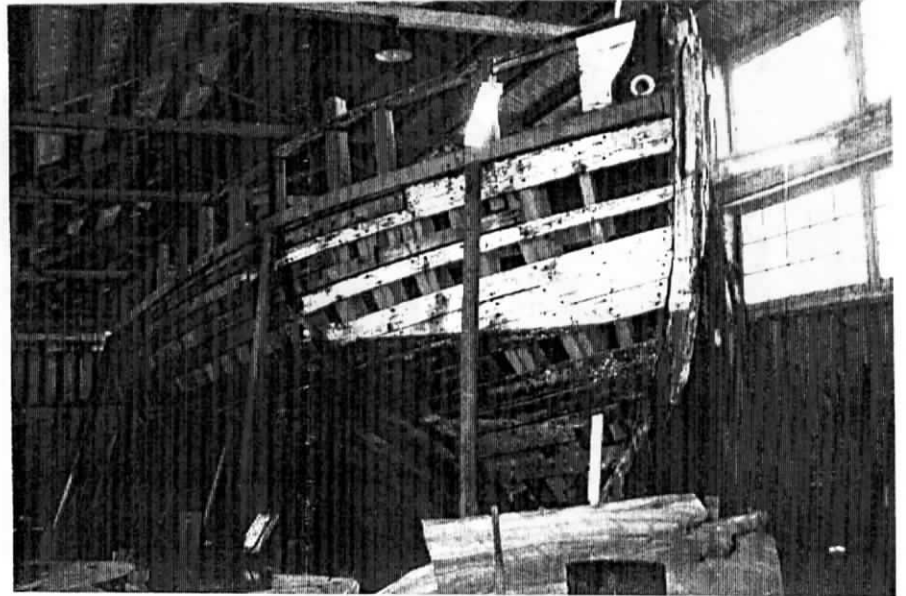
A clipper bow makes the Herreschoff 36 a bit different.



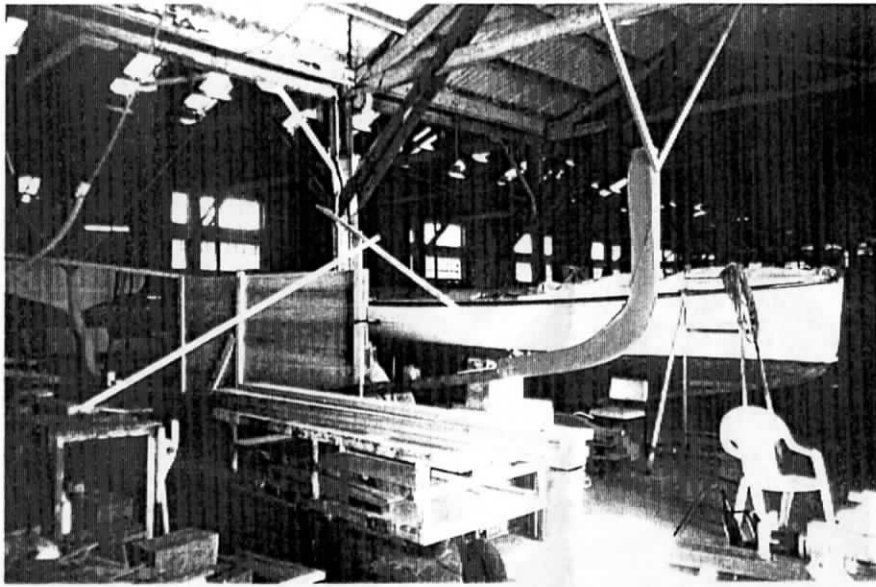
An impeccable transom on Gene Merrill's Herreschoff, but hard to photograph here.



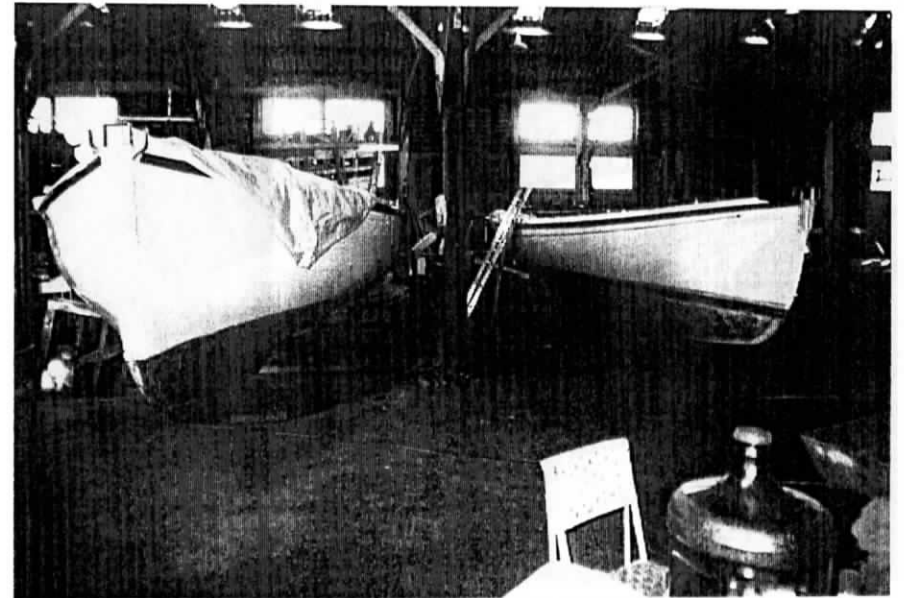
"Kathleen", a delightful 34 footer, in for sheathing and painting.



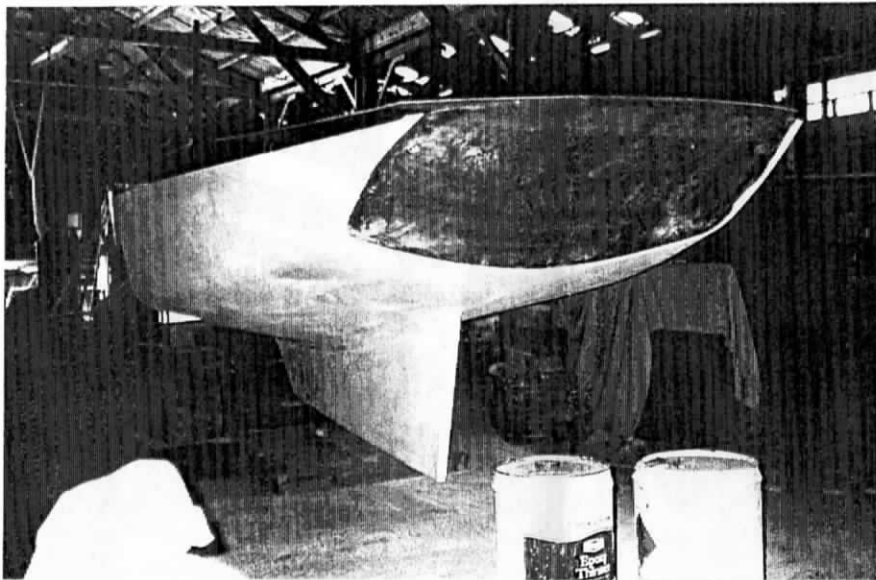
The North Sea trawler. All ribs replaced, planks next.



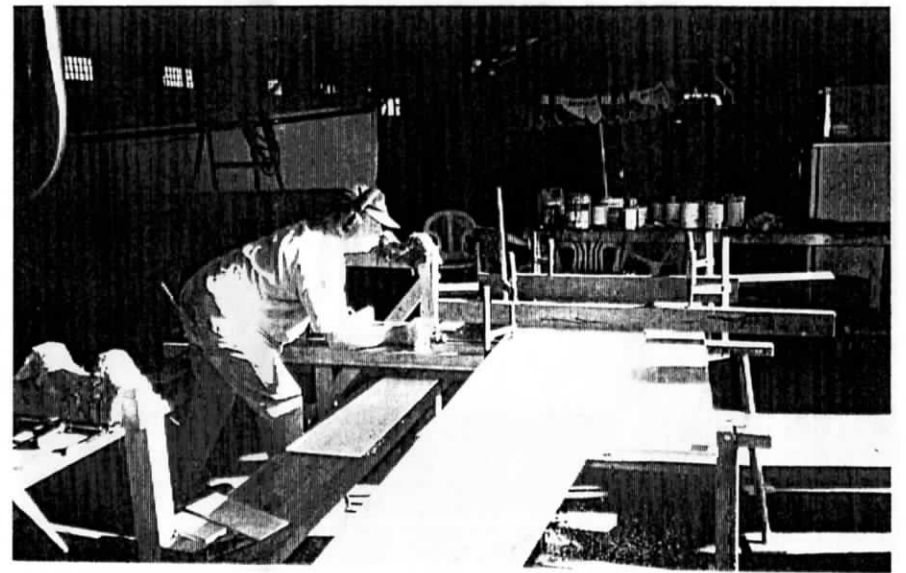
The embryonic Couta boat. Stem, 'case and transom.



Two Couta boats; Chris's design on left, Melbourne boat on right.



The "Secret"-kit boat, from Scruffie Marine, Qld.  
Note the firmness of bilge.



Chris edge-drills centreline planks in a jig.

one. Tony, Michael and Simon are doing a complete rebuild on a 1926-vintage North Sea trawler. This carvel plank-on-frame boat was imported into WA in 1972 but subsequently sank in Blackwall Reach. The timbers in this vessel are massive. The stern post (it's a double ender) came out of timber measuring 18" by 12". That's already been replaced, along with all the ribs. The stem and all the planks are still to go. The boys have chosen tuart for most of the work - a difficult timber to source. They rely on CALM and other government bodies letting them know when a tree is due to be brought down for whatever reason. They then go out and inspect it and if it's the right one of six species of tuart they collect it and cut it up into wide flitches with - wait for it - a large chain saw! They're not as rough as this sounds; these guys do a positively elegant job with a chain saw, and they can use it on the boat as well. The

techniques used in this resto will be all original/traditional, right down to the caulking in planks and scarf joints. For this they are using something called "Hair of the Blare", a traditional mixture of cow hair, pitch and no doubt eleven different herbs and spices. Whatever it is, I can vouch for it; a similar mix was used in the cast iron Pontcysyllte Aqueduct in Wales in 1805, and it still holds water today. The three blokes are taking their time on this project; one forms the impression that for them, getting there is all the fun.

All in all, we had a great visit to Chris's shed and two or three hours went by as if they were minutes. Our thanks are due to Chris and everyone else involved for putting up with us tramping around, getting in their way while they tried to do the work they obviously love.

#### **NEXT GENERAL MEETING**

Our guest speaker for this evening will be well known yacht designer/builder, Kim Swarbrick. The Swarbrick family was pre-eminent in WA yacht building for around half a century, Kim's many designs including the well-known Spacesailer series. Kim's description of his part in WA yachting history will especially attract yachtsmen but will be of great interest also to anyone who builds boats. That's on Tuesday, 25 Sept, 7.30pm, at MBSC.

#### **NEXT TOOLBOX VISIT**

The next Toolbox Visit is, sad to relate, not yet finalised. We are hoping to manage a visit to Graham Lahiff's Wooden Boat Works in Slip St, Fremantle, but Graham is currently overseas and we can't confirm anything until he returns on Sept 17. We'll let members know what's happening at the Tuesday evening meeting and if you can't get to that, ring the editor on 9397 6209.

#### **CALENDAR**

##### **TUES, 25 SEPT:**

Kim Swarbrick talks on his life in yacht design and construction.  
MBSC, upstairs, Perth end, 7.30 for 8.00pm

##### **SAT, 6 OCT (Tentatively):**

Toolbox Visit still to be confirmed.  
Details available on 25 Sept or by phoning 9397 6209.

##### **MON, 15 OCT:**

Committee meeting.

#### **ADMIN NOTES**

Very briefly; we're contemplating another show and tell for a Xmas meeting early in December - tell us what you think on Sept 25

We will be purchasing the three Wooden Boat Magazine Plan study guides - should give you some building ideas!

**AND LASTLY, REMEMBER YOUR FEES**