



# AMATEUR BOAT BUILDERS' ASSOCIATION

May/June 09



General view of the Hicks Maritime Museum (Mike Williams)

## WHICH WAY IS UP?

On Wednesday, 25 March we were addressed by Life Member, Kim Klaka on the subject of Small Boat Stability. Kim comes eminently qualified for this as a naval architect, head of his department at Curtin University. He originally trained, I believe, at Southampton Uni in the UK.

Kim delivered an excellent power-point presentation, pitched appropriately down to our beginners' level. The trouble is it contained a vast amount of technical information with many graphs and diagrams which will be hard to describe in detail in this report, particularly since I don't have the ability to reproduce diagrams, etc. So I'm afraid this will be largely a list of generalities, doing inadequate justice to what was a fine talk.

Kim's opening illustration was eye-grabbing; a shot from astern of a modern, wide-sterned ocean racer, twin rudders and all, heeled to about forty five degrees, still under full sail. Not your average picnic sail. He covered, all told, six

major areas – Guidelines for building, What is stability? Basic concepts around righting moments, etc, Large angle stability, Things that affect stability and Guidelines for choosing a design.

Under "what is stability?" Kim showed there were two areas to consider – normal sailing, where it is the ability to carry sail, and extreme conditions, where it is the ability to resist capsize – two different considerations. He had a circular flow chart which started with the real world of waves, roll motion and large heel angles and was then simplified down to calm water, small angles and so on before moving on to realistic hull shapes, large heel angles and waves before returning to its start point. Easier to understand, perhaps, were a series of diagrams which showed why a hull usually returned to upright after being heeled. Basically the centre of buoyancy moves sideways towards the depressed side further than the centre of gravity does and pushes the boat back to

upright. How far it moves, and the righting power, depends on the shape of the hull and how far it is heeled. If it is pushed too far (usually beyond 90 degrees) the CG may catch up and complete the capsize. Two or three graphs illustrated this point in more detail, as did a comparison of wide, narrow and catamaran hulls.

As far as working angles of heel for yachts go, it seems that traditional cruising boats work best around 30 degrees while modern racers are best at only about 25 and cats only 5! Capsizes for any of these can be caused by either overpowering wind, knock-down gusts or breaking waves. In preparation for any of these all deck openings must be kept closed as thoroughly as possible because once water gets below, you're in real trouble. The angle at which water does get below is known as the down-flooding angle. To maximise this angle ventilators are best kept to the centreline, rather than to the sides, for instance. Properly sealed cockpit lockers and hatches must always be considered, etc, etc. When it comes to fuel and water tanks good fore and aft baffles are essential to reduce contents slopping around, and the surface area affects stability much more than the actual volume of the contents.

Incidentally, in righting from a full capsize Kim pointed out that some mast left standing was a

help to re-righting (assuming the option was to have lost the lot) so he advocated having the lower shrouds stronger than the uppers so that if the mast was going to snap it does it at the cross-trees leaving a stump for righting purposes. Cheerful, huh?

For selecting a design the first criterion is the type of sailing intended, be it coastal, offshore, etc. For resisting a capsize the vessel should be long, narrow and heavy. For speed, comfort and cost it should be short, light and wide. It's not hard to find conflicts there. So to sum up, decide on the type of sailing intended, study the stability curve or examine the STIX number (and I'm not sure what that is, even now), compare with known designs or consult a naval architect. When building the precautions are: avoid adding weight high up; avoid extra ballast without reviewing the hull strength; don't add tanks without the correct baffles and avoid off-centre openings such as hatches and ventilators. Above all, do not change the designer's specifications without consultation!

Kim was able to cover the above and much more, in more detail than here, at the same time pitching it to our level. In that respect it was a masterpiece of lecturing technique. Many thanks, Kim. You kept us interested and on the ball all the way.

## THE FREMANTLE BOAT SHOW

This was conducted over the days of Friday 27<sup>th</sup> to Sunday 29<sup>th</sup> of March. I guess one could say it was chiefly for production boats, power and sail and these were chiefly exhibited in the fishing Boat Harbour and on the Esplanade. The RPYC annexe in Challenger Harbour and the grounds thereof showed displays by the Classic Launch Club, the Old Gaffers, ABBA, the MHA and model groups – quite a range.

The ABBA display could have been larger but included President Paul's 14' skiff, Jay's recently finished barrel-backed runabout, Harry's John Leather-designed Oyster boat, your editor's Acorn 15 and Mike Williams Seagull outboard collection. These were supported by an independently owned

Drascombe lugger, an Oughtred-designed 12' sailing dinghy (Shearwater, I think) and a couple of 8' Minim Cove dinghies designed and built by Brian Phillips. All of this was laid out on the small grassed area on the north side of the club house; an excellent site but it needed better sign posting to direct the public to us. Still, we had a lot of visitors through on the Sunday when I was there and about 300 of our 500 printed flyers were taken up and these have already resulted in a couple of membership enquiries to Chris Davis all of which is better than the Claisebrook response of last year. The remaining flyers can probably go on chandlers' counters or similar. All in all it was a good little exhibition; let's see what next year brings.

## ALADDIN'S CAVE

What a treasure trove Barry Hicks' Maritime Museum turned out to be on Saturday, 18<sup>th</sup> April! For someone like me, who's seen it a couple of times before, it remains vital and interesting; but I gathered that for our members who hadn't been before at all, it was simply mind-blowing.

Since the display is largely contained in a shed in Barry's back yard, really big exhibits are out of the question (although there is a mast and yardarm rigged at the end of the house), but there's an enormous amount of small and medium-sized artefacts. Outside, under a tarp, he even has material discarded by the Fremantle Maritime Museum. A fair number of exhibits are wheeled out on castors into a carport area on the days that he opens, too.



Wooden boat building tools feature prominently since Barry and his son, Robin, have done a lot of this themselves. The collection goes from cross-cut saws down to the smallest, purpose-made moulding planes, covering along the way drills and drill bits, caulking tools, sail makers' gear, etc, etc. Not to be overlooked is the horizontal bandsaw developed for shaping the spars of the Endeavour Replica. I mentioned this item in a recent report following spar-maker Ray Miller's talk to ABBA. It resulted in the saving of a considerable amount of Oregon, not to mention time as well.

Ships' helms (steering wheels to you) feature prominently, some original, some built by, I think, Robin. They range in size from a couple of feet in diameter up to a huge replica of "Moshulu's" double helm which was built by Robin. The sort of thing which could be

manned by up to four men in tough conditions. "Moshulu" was the four masted wheat barque made famous by Eric Newby in "The Last Grain Race" and survives, I believe, as a restaurant ship in Chicago.



There are ships' binnacles, too, although not as many as helms, and no really tall ones. I was surprised to discover that the large, cast-iron balls mounted each side of the compass for the purpose of correcting the instrument against the ship's magnetic field are, in at least one case, hollow. And I've always assumed they were solid.

There are several brass-enclosed navigation lights (red and green for port and starboard), all fired by oil.



And then there are the pulley blocks, in every conceivable size and every conceivable mechanical advantage, all timber housed, of course. Some of these are originals, some have been made by Barry and Robin because

they originally made about a thousand for the Endeavour Replica. They range in physical size from a couple of inches long to a couple of feet and include one, two and three sheaves, with and without becket. (a becket is a strap at the bottom of the block from which the sheet starts. It converts a two to one block to three to one, etc)

And then there are the models – what models! First there are two quite large, WA luggers. “Trixen”, by Barry Wright (dec), the original of which is in the FMM, and less well known, the mission lugger, ”Walt Leggatt”, built by Ray Miller.



Brian Lemon (l) and your editor at the Windermere display (Mike Williams)

But it's the Brian Lemon models which really catch the eye. They range from tiny little dinghies in small scale up to a large Clyde Puffer and equally large WW II, “Z” Force “Krait”. (many of the larger models operate on water under radio control) Brian must have had about twenty models out on this occasion. As always, I was taken with the Windemere steam launches such as “Bat” and others, the originals of which still exist on Lake Windemere. The first to catch the eye on entering the shed, however, were three UK fishing boats, the steam drifter “Henry C Miller”, the Noank mackerel boat “Emma C Berry” and a Lochfyne skiff from western Scotland. These three were supported by a small clinker dinghy complete with Seagull outboard and trailer. The outboard can have

only measured about three inches, top to bottom yet was complete in every detail, down to the spark plug.



In fact, Brian had enlarged photos of several engine installations so that the image was two or three times the real size, and even under this close scrutiny they still looked like real engines! Brian said that all up he'd made 116 models at the rate of three or four a year although he confessed to not having built any for twelve months. I hope he fires up again. Normally the models he still holds are all stored at his home. When Barry opens the museum, such as on Saturday, Brian loads up his VW Kombi with about 20 models and makes the trip to Cannington to set them up for display. On this occasion they'd been there from the previous Wednesday, when the museum had been opened to the “Ganges” Association. Many of Brian's 116 are no longer in his possession, having been donated to worthy causes or individuals. He was talking about trying to borrow some of these back for a retrospective exhibition – what an idea!

It was indeed a great afternoon and two-plus hours went all too fast, in between examining the exhibits and chatting to ABBA members and other visitors (of which there were a few) and partaking of Doris Hicks' marvellous afternoon tea. Barry and Doris obviously get a great kick out of opening the museum, as does Brian, and as Mike Rogers suggested, maybe we should make the visit an annual one.

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## **ADMINISTRATION NOTES**

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### **ABBA COMMITTEE**

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### **THE NEXT PAIR OF MEETINGS**

We're relying on Association members for both of these presentations, probably a first.

**TECHNICAL MEETING**, Wed 27 May. Here we will be addressed by Harry Speight on the subject of upgrades and improvements to his boat, "Shenanigans". This is one of three boats Harry's got, and the one we haven't seen so far, moored at Fremantle Sailing Club. She's a John Biddlecombe-designed, 32' ketch, originally supplied as hull and deck mouldings in 1981. Harry acquired her in 2004. The detail of how one sets up a boat to one's personal requirements should be very interesting. That's at S of PYC, 7.30 for 8pm, in the Committee Room. Come earlier if you're interested in the evening meal beforehand.

**TOOLBOX VISIT**, Saturday, 13 June. We're making another visit to Mike Rogers' home this month to see his fleet of, now, five boats. At the top end there's his Edwardian steam launch, "Platypus". We've visited her at least once before, in bad weather with a poor attendance. Now there are more boats and hopefully we can dial up better weather for a good roll up. That's at 51 June Rd, Safety Bay, from 2 till 4pm. See you there.

### **ANNUAL GENERAL MEETING**

We've got to have one of these soon, but don't panic – not this month. We're just flagging it to make sure we comply with the Corporations Act in time. So, the AGM of ABBA will be held on Wednesday, 29 July, in the South of Perth Yacht Club Committee Room at 8pm.

### **BOAT GIVEAWAYS**

We originally had two offers for this issue, but one, a 5.5m yacht, has already been given away, surprise, surprise! But there's still an offer from Jeremy Bean. It's a sound, 19', clinker runabout hull, (presumably no motor). Jeremy's shifting house and hasn't the time to restore, so it's available. He offers two phone numbers: 0418 210 169 or (08) 9243 6098. It sounds as if it could be a very good project.



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