AMATEUR BOAT BUILDERS' ASSOCIATION

October November 2015

INVISIBLE RISKS - CATHODIC PROTECTION

Our October Technical Meeting speaker, Aaron Woodall, commenced with a little bit of history focussing on how this subject of cathodic protection came to light. One Sir Humphrey Davey noticed that copper sheathing was falling off boats and attached a zinc block thereto with good results. In fact, so good that this was pretty well the sole approach to dealing with dissimilar metals in the marine environment until at least World War II.

In the US, this issue of dissimilar metals came particularly to the fore with the advent of boats constructed of plywood over aluminium frames. The fundamental of the cathodic protection system is that items requiring protection are electrically 'bonded' together via a cabling system. A component of the bonding system forms the anode that 'corrodes' away preferentially to the material or structure it is protecting. Until relatively recently, this 'sacrificial' component was generally a zinc block although Aaron noted that magnesium is used in fresh water. He counselled against using copper even though some surface treatment could improve its electrical potential slightly.

Aaron pointed out that in timber boats, it is not only the metal components that are protected by proper cathodic protection systems. He tabled a sample of a plank cut from a 75 foot timber boat that clearly showed the degradation around the skin fitting that had not been bonded in the protection system.

In many cases, a similar degree of breakdown of the timber structure can be caused by there being too much zinc in the bonding system. This causes the lignum to blow out of the timber structure and gross degrading follows.

In more recent times (post 1980's), composite alloys have been developed that fulfil the role of the anode more efficiently than zinc. One example of these is the Madox composite alloy anode available through Marine Protection Systems (MPS). Electrolysis Blockers are also available. These 'galvanic isolators' are designed to block corrosion causing currents that travel between vessels at a marina using a common shore power connection.

Regardless of the system, the integrity of the bonding and all the contacts is crucial. The bonding should use marine tinned multi core copper wire. In particular, Aaron advised that monel wire should not be used. All cabling should be doubled up and connected via a central 'bus bar' arrangement rather than from one component to another in 'daisy chain' fashion. Everything that requires protection needs to be connected.

Other strategies which assist the protection process are to epoxy coat fittings or use Sikaflex, Locktite, 5 minute epoxy or similar. Aaron reiterated that silicon bronze hardware generally used on boats will last a long time. It is the timber that very quickly deteriorates if the cathodic protection system is not adequate. The alternative of using plastic fittings below the waterline was not supported with a strong recommendation to continue using bronze in this circumstance.
In all situations, the cathodic protection only works whilst the vessel is stationary and care needs to be taken to ensure that other electrical components such as battery leads do not hang into the bilge where water may collect and form an electrical circuit with components which the bonding system does not protect.

In closing, Aaron noted that there are many new systems available on the market including propeller bonding straps that are located inside the vessel, eliminating the need to attach underwater anodes direct to the shaft externally.

Members present appreciated Aaron's enlightening presentation of the risks in this area of vessel maintenance and the more modern methods available to manage these risks. We thank Aaron for his time in sharing his knowledge and experience once again at the ABBA Technical Meeting.

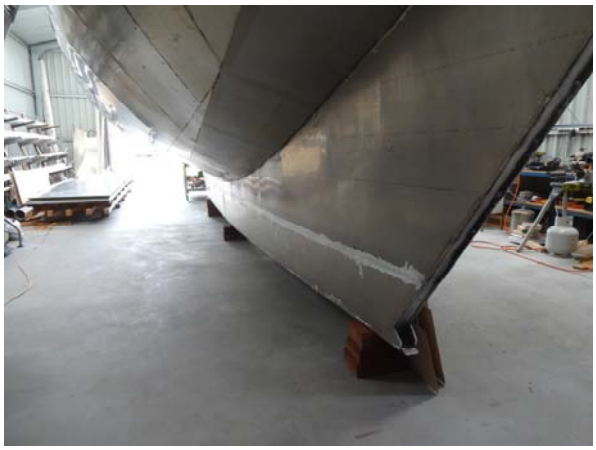
NOVEMBER TOOLBOX VISIT – RETURN TO ED ESSERS MAJOR PROJECT

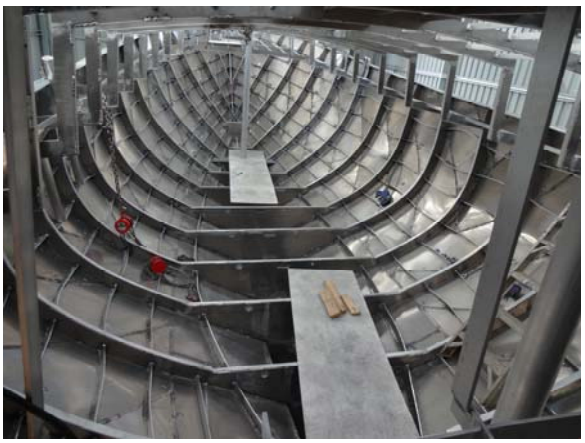
The November Toolbox was a return visit to member Ed Essers project as it takes shape at his purpose built shed just out of Armadale.

Once again, your editor is going to take some license here and refer you to previous newsletter articles for November December 2012 and November December 2013 for all the background details to this major project. The summary of this grand project is outlined below but the highlight of this visit, being the completed plating of the hull, is best captured in the series of photos on the following pages.

The vessel is a 14m Mobjack design Herreshoff Ketch. The vital measurements are 13.812 metres over the deck, 3.828 metres beam and 1.686 metres draft. The original design was in wood but Ed has made the design changes needed to construct it using aluminium plate which he is MIG welding throughout. The aluminium is of varying thicknesses – 16mm for the bottom, 10mm for the keel box construction, 8mm for the frames, 6mm for the stringers and for the skin plating. The aluminium is Alcoa Nautic 5083 and 6082.

Thanks to Ed for hosting another great ABBA progress visit to his project.





OLD GAFFERS RAFT UP — ROYAL FRESHWATER BAY YACHT CLUB

ABBA members were invited to visit the Old Gaffers Association raft up at RFBYC on the Sunday after our visit to Ed's project. It was perfect weather for a traditional day out and member Mike Wade captured the following photographs of the fleet.

ADMINISTRATION NOTES

ABBA COMMITTEE

President	Ken Potts	0421 178 991
Sec/Treasurer	Bruce Cadee	9259 0844
General Committee	Rob Bingham	9246 0202
	Ed Essers	0406 050 989
	Harry Speight	9295 4518
Newsletter Editor	Chris Davis	9387 5042
Library	Rosemary Nayler	9455 1470

DECEMBER TECHNICAL MEETING

Our next tech meeting will be on Wednesday 2nd December, as usual in the Heritage Room at South of Perth Yacht Club, 7.30pm for an 8pm start.

Our presenter for this technical meeting will be Bill Leonard, Boat Collection Manager with the Maritime Museum. He will be discussing a number of historical working boats of Western Australia, and his efforts to document these in detail for posterity. The discussion is likely to include boats ranging in size from the small, shallow draft boats of Oyster Harbour, Albany, to the pearling luggers of Broome.

Bill was born into a Scottish shipwrighting family and, after many years in this and the shipbuilding trade in the UK and overseas, he migrated with his family to Western Australia in 1986. Soon after arrival, he entered the world of aluminium yacht construction working on Americas Cup defenders and challengers. In 1988 he became involved with the initial lofting for the Endeavour, and ultimately became the Master Shipwright for the project. During this time he came to realise the importance of technically documenting endangered historic watercraft. This realisation was reinforced by his role in interpretation of the construction of the Duyfken, on behalf of the Maritime Museum. The museum then asked him to undertake the restoration of many of their watercraft exhibits prior to their display in the new museum building. Given his prior experience with the Endeavour and Duyfken, Bill prepared comprehensive as-constructed drawings of a number of these boats as part of their restoration. After the new museum opened in December 2002, he was appointed to the role of Boat Collection Manager, and has continued his documentation efforts since that time.

DECEMBER (YES — December!) TOOLBOX VISIT

The next Toolbox will be one and a half weeks after the Tech Meeting — that's on Saturday 12th December, as usual 2.00pm. As the normal cycle Toolbox would fall in the first week of January, we have resolved instead to repeat the customary Christmas gathering and sausage sizzle at Maylands Boatyard in mid December. Peter Russell has kindly offered once again to supply the BBQ and Alun Dufty has obtained the blessing of the owners for us to gather on the premises. So make a date in your diary and come along and have a sausage or two, chat with like minded members and wander around the yard to view the various projects.

SPECIAL NOTE -- SHIRTS & ABBA LOGOS

Don't forget — if members wish to bring along their own shirts to the next meeting then Bruce Cadee can arrange for logos to be embroidered. Members can bring as many shirts as they like but the club will pay for up to 2 logos. If we could do this in batches if at all possible this would be best for our supplier.

ADMINISTRATION NOTES (Cont'd)

ABBA LOGO

Members are reminded that Bruce Cadee has made arrangements with Shaun Luong of Image Embroidery at 26 Tulloch Way, Canning Vale (Phone 9456 2324 Mobile 0403 250 389) for an embroidered ABBA logo. The logo can be applied to your own clothing (assuming it can be accommodated in their equipment) or to shirts, caps or hats purchased through Image Embroidery. Feel free to call in on Shaun to look at the limited range of clothing he has on site or visit the following web sites to choose your preferred style, size and colours. The weblinks below are only examples of the wide range available. Half chest measurements are included on the web sites to help ensure you select the correct size. Ladies styles are also available.

Clothing (excluding Logos)

Style 1300 – Aussie Pacific Mens Murray Polo, Navy/White/Ashe or White/Navy/Ashe - **$20.00 + GST each**
Weblink: http://www.aussiepacific.com.au/the-murray-polo-navy-white-s?color=Navy%2FWhite%2FAshe&primary_color=Navy&secondary_color=White

Style 1304 – Aussie Pacific Mens Eureka Polo, Navy/White/Ashe or White/Navy/Ashe - **$21.00 + GST each**
Weblink: http://www.aussiepacific.com.au/mens/polos/eureka-polo-sky-navy-s?color=Sky%2FNavy%2FAshe&primary_color=Sky&secondary_color=Navy

Hats/Caps (excluding Logos)

Style 4199 – Headwear Brushed Heavy Cotton Cap, White/Navy (many other colours available too) - **$6.50 + GST each Weblink:** http://au.headwear.com.au/productDetails.cfm?&prodID=53&prodCatID=2&pageNumber=1

(Also refer poly/cotton legionnaires hats Styles 4057 or 4126 for maximum sun protection under website sub heading 'Hats, Visor & Beanies' http://au.headwear.com.au/productList.cfm?&pCategoryID=7)

Style 4199 – Headwear Brushed Heavy Cotton Cap, White/Navy (many other colours available too) - **$6.50 + GST each (includes poly/cotton legionnaires hats for maximum sun protection under website sub heading 'Hats, Visor & Beanies')**
Weblink:

Style 4223 – Brushed Sports Twill Bucket Hat, White/Navy (many other colours available too) - **$8.00 + GST each**
Weblink: http://au.headwear.com.au/productList.cfm?&pCategoryID=7&page=2

To make your annual membership even more value for money, ABBA will pay for up to 2 logos per financial year to be applied to your items of clothing. The current cost to ABBA is $7.15 per logo. There is no intention for this to be an ABBA uniform so the choice of style and colour is totally yours. If you are seen wearing the logo while building, working on or using your boat or anywhere for that matter it might get people asking questions and wanting to join our association. You are free to deal direct with Image Embroidery but please ensure you get an itemised invoice showing a separate price for the logo and present this to Bruce Cadee for reimbursement. Bruce Cadee is happy to take orders and liaise with Image Embroidery if you so wish.