



AMATEUR BOAT BUILDERS' ASSOCIATION

August September 2019

WHAT ABBA IS ALL ABOUT

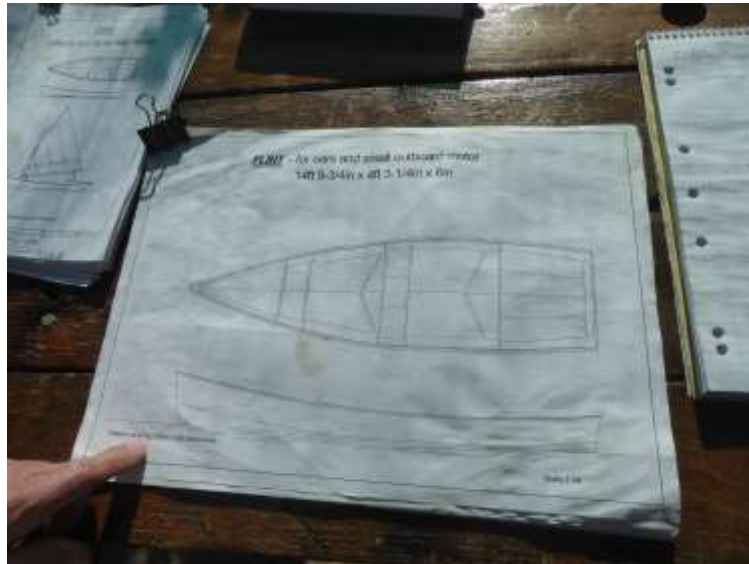


What ABBA member Damien Bourke and his wife Fran have achieved so far in building their first boat is a good example what ABBA exists for. They should be very proud of the effort they have made.

Firstly they considered what type of boat would best suit their needs and level of experience. They looked around and chose to build a 14' 9¼" x 4' 3¼" x 6" Flint design by Ross Lillistone. They purchased the "boat for oars and small outboard motor" plans but the design can be adapted to carry sails. It was made of marine ply using the stitch-and-glue technique in the carport of their home.

The next step was the most important. They joined ABBA to learn more about amateur boat

building. Damien was a valuable contributor to the ABBA committee until his night work commitments prevented him from continuing.



Damien built a scale model off the plans which he said gave him a much better understanding of the stages of constructing the real thing. He even chose red for the hull colour so it will go faster.



Damien researched boats and methods of boat construction. One reference he purchased was "The Gougeon Brothers on Boat Construction" which deals with wood and the West System materials. This is a very comprehensive book, but of more value to Damien was "Devlin's Boat Building - How to Build Any Boat the Stitch-And-Glue Way" by Samuel Devlin.

Damien, with lots of support by Fran, gave it a go and learnt many valuable lessons along the way. During this visit Damien, asked for and accepted advice and suggested improvements from those with more experience in certain areas. This is just one example of the benefits of ABBA membership.



There are still a few finishing touches to go including painting before Damien, Fran and their family and friends can enjoy all of their hard work but the finish line is in sight. Like all good ABBA members, Damien is already talking about how he is going to build the next one.



Our thanks go to Damien and Fran for hosting such a great afternoon and looking after us so well with food and drink. It was also great to see a good turn out of ABBA members to support Damien and Fran.



ARE WE LOOKING AT THE FUTURE?



Your Editor was on holidays in the north of WA so couldn't attend the August meeting but from all reports the very informative presentation on the basics of electric propulsion for boats was very well received. Electronics engineer, Gerd Heinen of Eco Boats spoke in detail about a technology that has relevance to amateur boat building and will increasingly be more common in the years ahead. We thank Gerd for travelling up from Mandurah to pass on some of his knowledge and experience to ABBA members.

Gerd has kindly offered to let us experience electric propulsion for ourselves, and more. See details of our November Toolbox Visit later in this newsletter.



Motor – Size Calculation



Mathematically, 1 kW equals 1.35 HP but electric propulsion systems are much more efficient than combustion systems due to:

- Higher over-all efficiency of up to 50% also achieved by large slow-turning high-pitch propellers
- Significant lower heat and lower friction losses as there are no alternators, water pumps, flywheels etc.
- Significant lower mechanical losses due to gearbox-less low RPM motors with high-torque
- Maximum torque at any RPM

Rule of thumb for the required Motor Size*

kW needed = $1/3$ x the existing diesel HP

or

kW needed = displacement x 2

*What also to take into account:

- hull shape efficiency e.g. multihull or heavy monohull
 - performance requirements of boats owner
 - area of usage (open or enclosed, currents)



Battery – Capacity Calculation



Rule of thumb for the minimum Battery Size* in kWh

2-3 hours boating @ cruise speed (auxiliary drive on yachts):

motor kW x 1.5 (Lithium) or motor kW x 2.5 (Lead)

4-6 hours boating @ cruise speed (motor boats):

motor kW x 3.0 (Lithium) or motor kW x 4.5 (Lead)

*What also to take into account:

- lead batteries should be kept at a cycle depth of maximum of 50% DoD
- For longer running times/higher speeds, more batteries are needed
- When choosing Lithium batteries you will get more capacity in a smaller pack
- Lithium Batteries are used with a cycle depth of over 80% so no reserve energy is there when empty!!!



Decision Making

Electric Propulsion – What to expect



Electric Propulsion – Advantages

Environment research shows that one 2-stroke outboard pollutes as much as 50 cars

Operational Costs

- Maintenance free - no maintenance and service cost
- Low or no recharging costs instead of high fuel costs
- Solar or wind recharging

Use and Reliability

- less space and weight than a petrol system
- Lightweight - can easily be stored away
- Only few moving parts and self diagnosis

Ease of Operation

- No starting issues, fuel priming or choke
- Easiest boat handling (idle speed is literally 0kn)
- No flushing after use
- No need for jerry cans



Cleanliness on board

- Total absence of fuel, oil or grease
- No oily bilge or fuel spills
- No stained or damaged timber

Comfort on board

- No noise so enjoy sound of nature
- No fuel smells or fumes

Safety on board

- No flammable liquids
- No combustible gases
- No motor heat



Electric Propulsion – System Costs



DRIVE SYSTEM	PRICE AU\$
1 kw (3HP) electric outboard incl. battery and charger	3,080
2kw (6HP) electric inboard 150Ah battery bank (wet-cell) charger	5,800 from 700 from <u>675 +</u> from 7,175
5kW (15HP) electric inboard 225Ah battery bank (AGM) Charger	9,900 from 3,000 from <u>675 +</u> from 13,575
10kW (30HP) electric inboard 270 Ah battery bank (Lithium) Charger	13,200 from 20,000 from <u>1,000 +</u> from 34,200

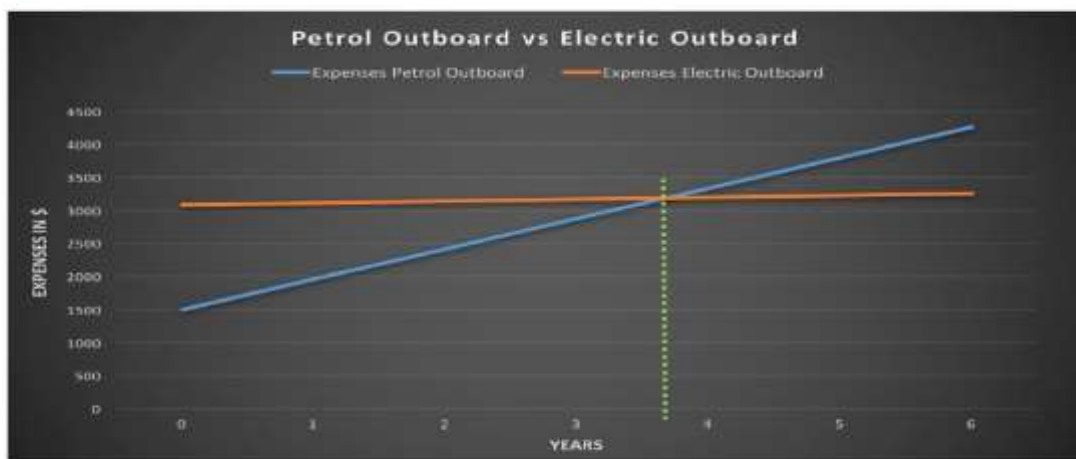


Electric Propulsion – Profitability Analysis

	Mercury 3.5 HP Outboard	Torqeedo Travel 1103
RPR	1,499.00	\$3,080.00
Weight	18.3 kg (incl. fuel)	14.2 kg (incl. battery)
Fuel efficiency	\$2.00 per hour (=1.43 litre @ \$1.40)	\$0.30 per hour (=1kWh @ \$0.30)
Service cost per year	\$300 (parts and labour)	\$6 per year (drive pin)
Cleaning time per day	20 min (flush cooling syst.)	2 min (hose down)
Total yearly costs @ 80 hours use = 40 days use @ 2 hours per day	\$460.00	\$30
Total yearly time @ 80 hours use = 40 days use @ 2 hours per day	13 hours	1.3 hours



Electric Propulsion – Profitability Analysis



Based on 80 hours yearly use, the higher initial investment for the electric outboard pays off after 3.6 years.



Electric Propulsion – The Decision is Yours



YES – If you ...

- have a boat with an efficient hull shape
- do not motor your Sailboat for more than 3 hours per outing
- do not motor your Powerboat for more than 6 hours per outing
- do not aim for speed
- are attracted to a quiet, clean, reliable drive system that is almost maintenance free

NO – If you ...

- have a boat with an inefficient hull shape
- typically do motor for more than 6 hours at higher speeds
- consider speed as an important factor for you
- enjoy the noise of your motor
- expect a lower initial investment than for a petrol motor
- have not access to shore power but want to use your boat on a daily base

Switch to electric and join the thousands of boat owners that already enjoy the benefits!



Test drive the Cutting Edge Technology!

By appointment only
Mandurah Ocean Marina
Spinnaker Quays
Mandurah, WA 6210

We are here to assist you!

Any time also after hours and on public holidays
Call Gerd: 0457 728 017
E-mail: perth@ecoboats.com.au

Three convenient locations – SYDNEY – BRISBANE – PERTH
We deliver nationwide!

ADMINISTRATION NOTES

ABBA COMMITTEE

President	Ken Potts	0421 178 991
Sec/Treasurer	Bruce Cadee	0419 508 785
Newsletter Editor	Bruce Cadee	0419 508 785
Library	Rosemary Nayler	9455 1470
General Committee	Rob Bingham	9246 0202
	Luis Gouveia	0477 172 881
	VACANT	
	VACANT	
	VACANT	

All positions on the committee will be vacant and open for nominations at the October AGM. You will see from our regular newsletter that there are still a number of unfilled vacancies on the committee and that some people are forced to hold numerous roles. Please give serious consideration to nominating for a role in the committee in order to spread the load and ensure that the Amateur Boat Builders' Association can continue to provide high standard Meetings, Toolbox visits, newsletters and the other benefits of membership. Please talk with any of the existing committee members or contact Bruce Cadee on 0419 508 785 or cadeefamily@bigpond.com about joining the committee.

SPECIAL ADMIN NOTE:

Your 2019/20 subs are now due. Our annual Public Liability Insurance premium is over \$1,000 and we need your subs to help pay for it. Please pay in cash at a meeting or preferably pay your \$30 annual subs by bank transfer from your computer or phone app. Our BSB is 066130 and account is 10168343. Please include your name in the description. Contact Bruce Cadee on 0419 508 785 or cadeefamily@bigpond.com if you want to check if you're financial.

OCTOBER MEETING

Our next Technical Meeting will be held as usual in the Heritage Room at the South of Perth Yacht Club on Wednesday 2nd October. Before the Technical Meeting we will hold a short AGM.

The theme for the meeting will be "My Favourite Boat". We all have a favourite boat or boats. We would like everyone to think about this and bring along pictures, models, plans, paintings or just a few words to share with others why this boat or these boats are special to you. Your favourite could be one you currently own or have owned, a boat or model of any size that you have made, it could be a class of boat or one you saw in a magazine and dream of building, owning or cruising on. Maybe you can't decide on just one so it could be photos from a boat festival or display where you saw some things that you just had to photograph. It could even be a book, movie or story about a boat or voyage that you think the group would like to hear about.

If you have any photos that you would like to have projected on the screen, please e-mail them before the meeting to Bruce at cadeefamily@bigpond.com or bring them to the meeting on a USB memory stick.

NOVEMBER TOOLBOX VISIT

See next page.

ADMINISTRATION NOTES (Cont'd)

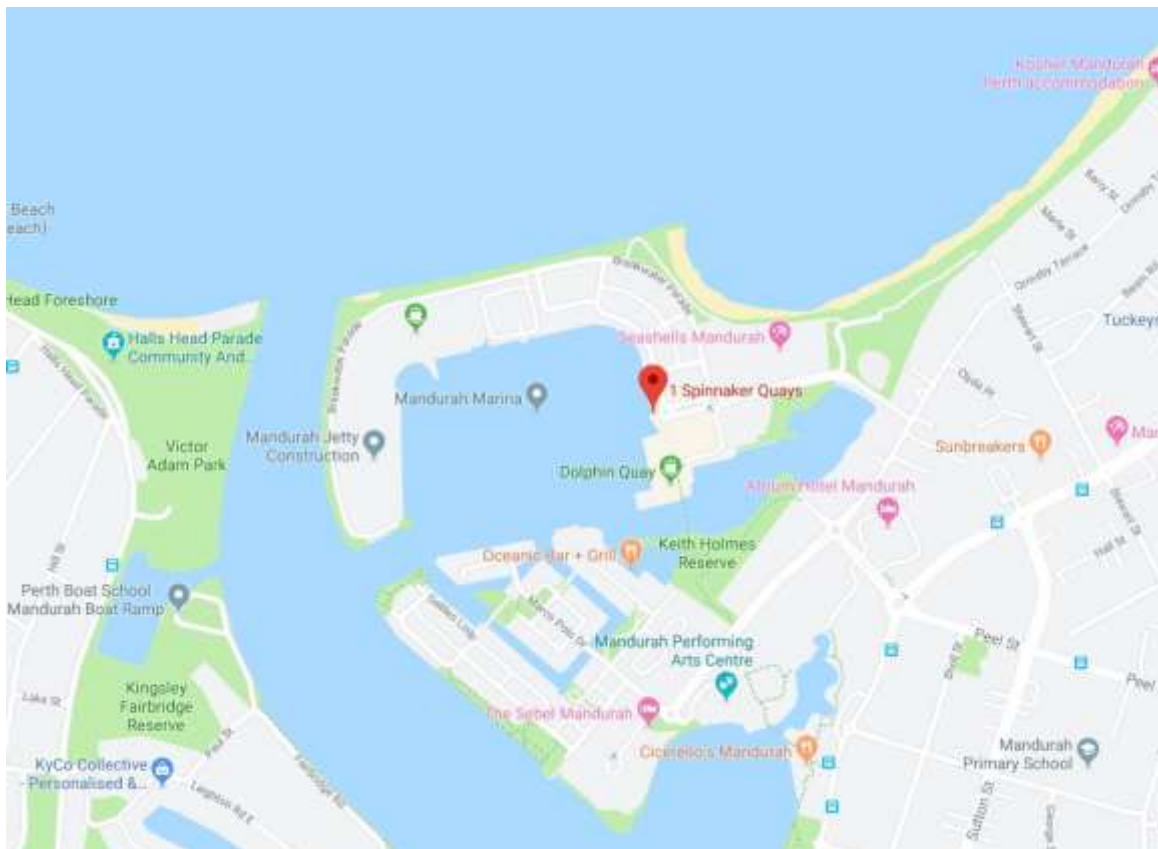
NOVEMBER TOOLBOX VISIT

Our November Toolbox will be held on Saturday 2nd November from 2:00 to 4:00 pm. This special event is kindly hosted by Gerd Heinen of Eco Boats. We have been invited to a hands on test drive of electric powered craft at his premises in Mandurah. This follows on from Gerd's presentation at the August Technical meeting but you don't have to have attended the August meeting to attend this Toolbox. In fact bring the family and enjoy some time in Mandurah.

The test drives will be powered by the Torqeedo Travel 1003 and the Torqeedo Cruise 2.0. While some people are out on the boats, Nick Marsden from Power Equipment will keep the rest occupied with a presentation on small diesel engines and sail drives. We will then swap over.

We will meet at 2:00pm at the blue gatehouse of Mandurah Ocean Marina
Address: 1 Spinnaker Quays, Mandurah WA 6210.

Bruce Cadee will be attending and has a few spare seats if someone needs a lift.
Call 0419 508 785.



ABBA IN THE COMMUNITY

Despite handing out many ABBA Brochures at recent events without much success, a recent new member learnt about us from a Brochure he picked up at East Fremantle Yacht Club. If you are a member of a club, association or workplace where you can leave some of our brochures, please contact Bruce Cadee on 0419-508 785 or at cadeefamily@bigpond.com who will happily arrange a supply for you.

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.