



RATLINES – FEBRUARY 2024

The official newsletter of the
Wooden Boat Association of Cairns, Inc.
ABN 56 194 994 249

FEBRUARY 2024 EDITION

Club and Association Status:

The Ports North Master Plan:

We're moving! Planning meetings are being held. See the 'Club Move Update' section.

Insurance & Incorporation:

Up to date as per Committee Meeting Minutes.

Boatbuilding Projects:

Roger's Kiribati Tri:

BT's gun'ls are done, the outboard mounting board has been replaced with some very nice Kauri and permanently mounted in position. The flooring support pillars are complete and installed, and all the ply flooring has been cut & fitted.

The compartment at the stern will not only house buoyancy foam, but a bespoke GRP 'battery box' insert will be fabricated on site as a training exercise and then fitted.

Soon, we'll start to look at the outrigger crossbeams and the folding mechanism. And on that subject, we had a recent visit by the Kiribati Police Commissioner Eerie Aritiera and his entourage to look at Bitaki Taari. Eerie is pretty much the Number 2 Government man in Kiribati, and he was a very interesting man, easy to talk to, and he shared a great many details about BT and her many sister vessels (that are still being built over there). All in all, a very enjoyable visit.





The 16' Skiff:

Still sits forlornly, mounted on the side of Container 4, awaiting signwriting. Of course, given what we have to organise in the near future she just may have to wait.

JW's Scruffy:

Is almost finished with her time at the WBAC premises. She's now back on her trailer, painting 100% completed, rudder virtually complete, and placement of her rigging arrangements started.



Back on the trailer!



There's a rudder in there somewhere...



Yep, that's it!



Looking very trim.

Chris's pram dinghy:

Is active again with strip planking recommenced.



Ongoing Maintenance and Improvements at the Clubhouse:

We're up to date, but our focus is now on what needs to be done regarding the move to the new site..

Club Move Update:

As we advised in the last Ratlines, our clubhouse/premises will have to be relocated this year due to the Tingira Street Boat Ramp being enlarged.

Two planning meetings have already been held to put together a plan of what we need as a bare minimum and what we would like to have. That of course will be our baseline for discussion in the upcoming horse trading with Ports North.

What we know is where WBAC will be moved to (basically across the other side of the Water Police Base access road), and that we will have an area of 600 square metres – which equals the area we occupy inside the existing compound.

Also, as we're sharing the compound with the Cairns Dragon Boat Club (they'll have around the same area as us), it looks as though the only parking available will be in the centre of the new compound so it will be shared parking. This is not foreseen as a problem as our attendance times & dates don't clash too much, so it'll be a matter of wait and see.

Our Facebook Page:

Numerous posts over recent weeks, getting responses, likes and follows (that's facebook speak) from all over the planet, and our story on the Kiribati Police Commissioner visit was well received. Also, see our article on the Seagulls next in this Ratlines.

Also on Facebook, but On the subject of Seagull Outboards:

It may surprise one and all (well, not everyone) that there's a thriving international Seagull outboard community on Facebook – mainly UK - which also encompasses Australia/NZ. If you were to peruse the **Seagull Outboard fans** facebook page, then you'd come across one Peter Rountree (yep, one and the same!) discussing Timpenny brand yachts and many things Seagull-ish.

It's quite a lively group, very friendly, active and proactive in restoring, repairing and experimenting with numerous versions of the Seagull, and they seem very polished in tracking down spare parts!

One of the members I was talking to had something like 38 of them, literally dwarfing the collection of our own Seagull tragic in Edmonton....

Further, the admin people on their page have expressed quite some interest in the Great Tinaroo Seagull Race, when it happens, what the race consists of, and of course a few photos to give a bit of perspective to the whole event. I'll do so in the next week or thereabouts once the club requirements settle down a bit.

Try the page here:

<https://www.facebook.com/groups/124464364785066>

An Electrifying Tale

Readers of *Ratlines* will know that Dermot has replaced *Jule*'s noisy petrol-guzzling 30 hp Suzuki outboard with a quite emission-free 48-volt 5 kilowatt electric outboard, powered by a couple of lithium iron phosphate (LiFePO₄) batteries and connected to solar panels mounted on the bimini.

As I have been "volunteered" by Dermot to accompany him on *Jule* on his first trip to Dunk Island and beyond, I have a keen interest in finding out how far and how fast we can go (and return!) on the 2 batteries and the solar panels.

To this end, Dermot and I took *Jule* out on Lake Tinaroo to find out how fast and far!!

Some background is needed. From previous trials we had discovered that all is not as it seems with lithium batteries. For the moment forget the solar panels.



Jule has a 48-volt 100 amp-hour battery and a 48-volt 50 amp-hour battery. Dermot has connected battery monitors to each battery. Among several things, the monitors display current draw (amps), estimate remaining time, and have alarms for the motor to shut down when amp-hours and voltage drop to pre-determined critical levels to protect the batteries from damage.



Battery monitors, secured on *Jule*'s dashboard by a surgically repurposed wooden ruler.

On previous trips we had discovered that the maximum current that we could draw continuously from the 100 amp-hour battery was about 20 amps. This equates to 960 watts of power (nearly 1kilowatt) which propelled the boat at 4 to 4.5 knots for 4 hours- a reasonable cruising speed for a displacement hull with a maximum speed of about 5.5 knots. However, we could only draw about 10 amps (480 watts) continuously from the 50 amp-hour battery, which propelled the boat at about 2.5 knots for 4 hours – not ideal for escaping a storm on the Coral Sea!

Dermot had assumed (understandably he reckons!) that the 50 amp-hour battery would power the boat at the same speed as the 100 amp-hour battery for half the time. Not so it seems!

What happens when you try to go faster than 4.5 knots, I can hear you say? At 6 to 7 knots, we were drawing about 60 amps from the 100 amp-hour battery, which had a hissy fit after about 10 minutes, the voltage dropped, and the motor stopped!! The battery wasn't totally discharged, it just couldn't maintain the flow of electrons at this rate. OK to suddenly stop dead on the lake, but not at sea. After a rest, it would go again, for a short time. (A bit like me, really)

Why does this happen? My son (an electronics engineer) explained that this is because of something called the “C-Rating” of lithium batteries, which describes the percentage of total capacity that can be drawn per hour. Something to do with physics and the flow of electrons across the battery!

With *Jule*’s batteries having a C rating of 25%, it explained why we could not draw more than about 20 amps continuously from the 100 amp-hour battery, giving us a theoretical maximum battery life of five hours. Given that at 20 amps we were getting about 4-4.5 knots through the water, we now had some idea of potential range: 20 to 22.5 nautical miles.

I say “potential” range because manufacturers of LiFePO₄ batteries recommend that they should only routinely be discharged about 80% to get maximum battery performance over time, which is around 3,000 to 4,000 cycles. Theoretically LiFePO₄ batteries (unlike Lithium-ion batteries) can be discharged 100% without damaging the battery, but it is preferable to only use the last 20% in an emergency. When planning a boat trip, therefore, it is best to assume that a 100 amp-hour battery has a usable capacity of 80 amp-hours, which for *Jules* means a maximum range of 16 to 18.5 nautical miles. In practice, of course, allowing for all the variables waiting to ambush ancient mariners, it would be advisable to plan for a range of around 10 nautical miles.

Dunk Island is located 5 nautical miles from Dermot’s favourite launch site on the Hull River, so if you’re optimistic you could say that the 100 amp-hour battery should have enough capacity for a trip to Dunk and back, with a bit in reserve. With such a slim margin for error, Dermot has decided to replace the 50 amp-hour battery with a second 100 amp-hour battery which should deliver enough surplus capacity. To this end, he has enlarged and strengthened *Jule*’s battery compartment, as each 100 amp-hour battery weighs 38 kgs.



And what about the solar panels? Sorry. For that you will have to wait for the next installment of the Electrifying Tale in the March (or maybe April) edition of *Ratlines*.

Roger Fryer,

Ably assisted and edited by Dermot.

12 Feb 2024

Our WBAC website: <https://www.woodenboatscairns.com.au>

Continually being updated by Sheila. If you haven’t visited it recently, you’re in for quite a surprise with the amount of info that’s been collated and installed.

Ladies and Gents, this concludes Ratlines for February 2024 and, as always, if there's more you want to see or know about please let us know by return email. Likewise, if you have a story or article you'd like included please send it to us at:

WBACairns@gmail.com

Clubhouse: 68 Tingira Street, Portsmith, (Cairns) Qld 4870

Committee is: President- Roger Fryer;
Vice President- Chris O'Keefe (Ratlines & WBAC Facebook page);
Secretary- Dermot Smyth (and Librarian);
Treasurer- Brendon O'Rourke;
Committee- Tom Sparks, Sheila Sparks (website supervisor), Keven Muller, and Richard Heazlewood.

Website: <https://www.woodenboatscairns.com.au>

Facebook: <https://www.facebook.com/Wooden-Boat-Association-of-Cairns-118900728480121/>

Postal Address: 68 Tingira Street, Portsmith, (Cairns) Qld 4870

Phone: 0417 266 555 (Roger)

WBAC's Cash For Containers number is: C10026463

Club Happenings:

The Lake Tinaroo Gatherings Will Continue Soon.

And finally, just a few photos of a myriad of activities:



Mowing.....



Scraping old paint with a chisel..

...and letting sleeping dogs hog the fan on hot days.



Watching the recent King Tide roll in...



...and in a bit more...



...and in .. but wait...he isn't, is he...?



Yep, he is....!

And, one final note from the Kiribati visit. The Commissioner was happy to point out that the name Bitaki Taari translates to “the smell from the sea’. We have now renamed her:

SMELLY FISH!

Or:

FISHY SMELL!

(either seems to fit)