



# British Columbia Multihull Society

May 2021

## Experiment with a homemade Proa

Curtis Patzer, BCMS Member

*Originally published in Small Craft Advisor's 'Reader Boat' column, without the epilogue:*



I've been intrigued by proas for a long time. Proas - those long, skinny, ancient single outrigger sailing craft from the south Pacific. The ones that sailed circles around Magellan's fleet when they arrived, but could also come to a full stop and reverse direction. I finally decided that I wanted to sail one, but where would I find one in Vancouver? The answer was that I had to build it. And so the experiment began.

For a couple of years, I studied plans for small multihulls to see how they were built. I thought about which building method would be best for me. Plywood on frames seemed simplest. I decided that I didn't

want to use epoxy because of toxicity risks in the very small spaces where I would build - the basement, the living room, and the "back yard", a 10' x 10' decked space behind our townhouse. I planned to use screws and Titebond III to bond and seal, instead of epoxy. This was an experiment, after all. Others on the Ductworks forum were reporting good results with these methods.

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Using Hullform software, I designed the main hull shape, or 'vaka' to be 6m long, the maximum length allowed at my boat club, with a very narrow waterline, but with enough beam above to sit comfortably or sleep between the slab sides. I decided I wanted a western schooner rig instead of the transitional crabclaw sail, so two free-standing masts were needed. Freestanding was simpler. I decided to use two outboard rudders for steering. Then I selected frame locations to support the loads from the masts, rudders and outrigger beams ('akas'). After reading Gary Dierking's book of proa designs, I decided to build the vaka in three 2m sections, and bolt them together. This made it possible to build the boat in my limited space. I decided to use Laser dinghy rigs, since I could borrow rigs and sails from my sailing club for free to try out the idea.

I spent about 200 hours building the vaka, to a rough workboat finish - just sealed all the joints and then painted over the plywood with Acrylic Latex paint. There was probably as much time spent head scratching and cleaning up as actually building. Then I spend another 100 hours



**Pub Nights via Zoom Meeting**  
*Invitations sent out via the members email list*  
**7:00 pm**

May 18, 2021  
 June 15, 2021



building the akas, platform and PVC ama. Yes, the ama is a piece of 8" PVC schedule 40 pipe. I found an RV repair guy who welded the two flat oval ends to the PVC pipe.

Aside from the bolts holding the three vaka sections together, the whole boat is lashed together using ratchet cargo straps. I've never had a strap failure, but there have been some seizures due to corrosion from salt water. My first attempt at folding akas ended in failure and capsize. But amazingly, the limp akas and the ama provided enough buoyancy to prevent water from entering the vaka. We got the boat to shore without getting wet. The new akas are of solid, laminated construction, and have performed well.

I first launched proa LOL in the fall of 2014. LOL seemed a fitting name, due to its symmetry, and multiple meanings: Labour of Love, and of course, Laugh Out Loud. LOL's first launch consisted of moving all the pieces from the 'back yard' to the boat yard, assembling them all, and then trying to launch the hull using the club's dinghy dollies. The hull floated just fine, but hauling the overly heavy proa on dollies did not work out well. I build launch carts for the vaka and ama, which were still awkward, but a drastic improvement over the dollies. I also built a yuloh.

Next year, I borrowed Laser rigs and sails from the club and learned to sail LOL. I needed bigger rudders, but the club had some unused Laser 2 dagger boards, which worked well. I

build 'mega tiller', a big removable tiller which I move from rudder to rudder when shunting LOL. The aft sail puts a lot of load on the aft rudder, but 'mega tiller' makes it very manageable. In a summer of hit and miss experimentation, I had two glorious days of fast but comfortable sailing.

Over the next winter, I collected my own set of Laser spars and rigging, and purchased two square topped Laser sails (not class legal, but so what?). I had a local sailmaker, Bruno, sew zippers into the luff sleeves, and add reef points. I designed and installed an electric propulsion system (read, trolling motor and old battery), with a 110W solar panel for charging. That worked great, and allowed me to do an overnight trip to Howe Sound the next summer. It was great to sleep in LOL's cockpit and look up at the stars. But I had trouble getting the new sails to perform well.

That August, during a boat club outing, I capsized LOL in gusty conditions after leaving the wind shadow of an island. Because I hadn't gotten around to installing a safety ama (on the lee side), LOL turtled, and floated contently upside down. With help, I was able to recover, and sail back to the club's launch. But that's another story. The capsize ruined the battery and solar charger and damaged the motor. But LOL's vaka and ama floated well and drained quickly - something to be glad about. After that, I devised a way to attempt self-rescue by using one of the single windward stays (added later) and the buoyancy of the detached ama to rotate the submerged akas up to the surface for reattachment to the ama. I also obtained a large plastic barrel, and added mounts to hold it against the lee side of the vaka as floatation, thus preventing another turtling if LOL got knocked down again.



Soon after, I started work on a lithium iron phosphate battery pack and rewired the trolling motor. That, too, is another story. I'll summarize by saying that I installed the pack in a dry bag with sealed connections for the wires to the solar panel, motor and 12V accessories. The 'power bag' was mounted in a locker so that it won't move

if LOL ever capsizes again.

This summer has been busy with work and other commitments, but I've had a few days of great sailing and one more night at anchor under the stars.



### **So what have I learned?**

Building a boat is hard work, and building your own design is even harder. It takes a lot of time to build, and even more time to test, rework, repair or reject your ideas. Unless you're a solitary person, this time and effort will also impact your family and friends. While finding and implementing solutions can be fun and rewarding, it may not be appreciated as a family activity like time spent sailing in a production boat would be.

I still like LOL's overall design, but I'd lower the decks by 10 or 15cm, and lighten the framing around the masts and aka supports. I'd use MDO again for the hull bottom, but marine plywood for the sides and frames. I reworked the cockpit hatches, and I wished I'd started with the end result, instead of going through the process of building wood hatches, and then gluing them shut. I think I'd glass the bottom, and the rudder frames, and seal all the plywood with epoxy. I'm pleased with the pipe ama, but I'd make it longer for more buoyancy and more weight to balance heeling forces.

I decided to build LOL cheaply, which I still don't regret. It was a risk building a first boat of my own strange design, so I wanted to spend as little as possible. I don't expect LOL to last that long - hopefully a few more years before rot or delamination becomes a problem. I have learned many things, which I will consider when I find my next boat. I say find, because I probably will not build it. LOL's crude, grungy hulk will make it easier to let him go when the time comes, than would a piece of floating furniture with a smooth, bright finish.

I think proas are the most idealized of all sailboat types, by some sailors, myself included. I've never seen such heated debate about theoretical, esoteric issues as I have on proa forums. Proas are an acquired taste for the general boating public. Just try shunting in a narrow channel, and watch the other boaters watch you. Everyone expects you to tack, or crash. After a shunt, many are puzzled, a few are impressed. So it goes with ideals, and with proas. Maybe a different multihull would be better? The experiment isn't over yet.

### **Epilogue:**

I built a bidirectional "leeboard" that was hinged to the windward side of the vaka and could be pulled down using a line with 8x purchase. The board was yellow cedar, milled by a CNC machine based on a CAD drawing I created (using a Python script) to a bidirectional foil section by Tom Speers. The board was longer and fatter than needed, but in light winds, the proa would sail to windward like it was on rails. But if the wind got much above 7 knots, it was too tense for me. I was concerned about flying the ama, or tearing the downhaul block from the vaka hull, so up came the leeboard, to add to the windward ballast.



I sailed LOL for three more seasons after submitting this article, mostly in Indian Arm, but I did get over to Howe Sound a few times. Camping on the proa was always very enjoyable, as was 'racing' in light winds against big monohulls, or sculling with the yuloh. I had hoped to sail across the Strait (which should be the optimal situation for a proa), but weather and schedule never cooperated.

In fall of 2020, it was clear that the plywood sides were starting to delaminate in earnest, and would require replacing soon. Then there was the leaky mast tube and perpetually wet frame. And LOL was always much heavier than he should have been for great performance. A difficult decision was required, so after trying unsuccessfully to sell or even give away LOL, I scrapped the hulls and sold off the rigging and bits. The experiment was over.



# ANNUAL GENERAL MEETING

## Notice

**BC Multihull Society Annual General Meeting will be held as a virtual meeting due to Covid-19 restrictions, with Zoom on Tuesday, June 1, 2021 at 7:00 pm.**

**The directors will send a zoom invitation with log-in instructions to all members via the list-server on or before Monday, May 31, 2021.**

**Agenda will include:**

- Notice of Meeting
- Approval of Agenda
- Minutes of 2020 meeting.
- Business arising from the Minutes
- Presentation of 2020 Financial Statements
- 2021 Budget for member's approval.
- Director's Report to Members
- New Business
- Election of Officers
- Adjournment

**All members of the Society in good standing are encouraged to attend.**

Any member willing to stand for office, please contact [BCmultihullsociety@gmail.com](mailto:BCmultihullsociety@gmail.com)

**BC Multihull Society**  
2020 Annual General Meeting Minutes  
Sept 15, 2020

**Opening:**

President Bob Davis called the Annual General Meeting of the B.C. Multihull Society to order at 7:09 PM on Tuesday, Sept 15, 2020 via Zoom software.

**Present:** Members: Wendy Carlson, Wayne Carlson, Alec Mackenzie, Marlene Mackenzie, Ron Tomas, Bob Davis, Jamie McKerrow, Stuart Kerr, Vicki Schoonbeek, Peter Schoonbeek, and Tim Poustie.

The meeting proceeded as a quorum was present (more than 10% of the voting members)

Bob Davis announced that a former BCMS social Director, Brian Phillips, had passed away on Aug 25, 2020. There was to be a Celebration of Life on Sept 19<sup>th</sup>. Bob would attend and present Brian's partner, Margaret Dulat, with a sympathy card on behalf of BCMS. A toast was made to Brian.

- A. **Agenda:** Proposed Agenda was presented and moved to be accepted by Vicki Schoonbeek, second Bob Davis. Passed.
- B. **2019 Minutes.** Approval of the Minutes from the 2019 annual meeting was moved to be accepted by Wayne Carlson, Second Vicki Schoonbeek. Passed by a show of hands.
- C. **Financial Statements for 2019:**  
Marlene Mackenzie, BCMS Treasurer, presented the 2019 Financial Statements.
- D. **Approval of 2020 Budget.**  
Marlene Mackenzie presented the proposed budget for 2020. Moved acceptance by Vicki Schoonbeek, second Wayne Carlson and approved by a show of hands of the members.
- E. **Report of Directors:**
  - a. Vicki Schoonbeek, Island Director, said the island pub nights and Christmas party had been well attended last year but no Island events in 2020 due to Covid-19 restrictions.
  - b. Wayne Carlson, Newsletter Director said he would be doing a couple of more newsletters before year end.
  - c. Alec Mackenzie reported that there had been only one social event this year and that was the Pt. Browning Fall Sail- in but activities had been much reduced due to

Covid-19 restrictions. He was not sure if there would be Christmas parties as the club had to follow directions of BC Ministry of Health.

- d. Bob Davis, President thanked all the Directors for their work for the club. He said it had been a difficult year due to Covid-19 restrictions.
- e. Ron Tomas reported on the recent Snakes & Ladders race. Some of the race participants had not followed the rules regarding the whale zone around Saturna & Pender Islands as well as violated the shipping channel restrictions in Boundary pass. Other than that, no racing for this year.
- f. Stu Kerr, Membership Director, stated there were 85 members from 46 family groups.

#### F. Old Business:

- a. **Website.** Last year, Aaron Twa, who has had experience with websites, offered to act as a web resource consultant. He ended up completely redoing the website. As of the date of this meeting, Aaron was still working on the website but, certain parts have been completed and look good.

#### G. New Business:

- a. **Bute Island, Ladysmith Harbour:** Vicki Schoonbeek suggested that BCMS have a sail-in next year to Cowichan Valley Regional District's newest regional park, Bute Island. Attendees thought this was good idea.

#### H. Election of Directors.

The following Directors agreed to stand for office again – Bob Davis, Ron Tomas, Stuart Kerr, Alec Mackenzie, Jamie McKerrow, Wayne Carlson, Vicki Schoonbeek and Marlene Mackenzie. No one else came forward so these people were elected by *acclamation*

#### I. Adjournment

Bob Davis adjourned the meeting at 8 :10 PM.

## Sail-in Cancellation Notice

Regrettably, there will be no Port Browning sail-in this year. We had reserved the tent for an informal B-B-Q, but the current travel restrictions prevent most members from attending. Port Browning was very gracious and returned our deposit. We are still booked for September. We hope to see significant relaxation of these rules as vaccination rates climb, so looking forward to cruising and sailing activities increasing as the summer progresses. Fingers crossed! Stay tuned...

# Reminiscing about the past, Swiftsure Racing 2009...

Alec Mackenzie

## Swiftsure 2009 - Cape Flattery Multihull Race on Bad Kitty

I felt good as we motored out to the start of the 58th Swiftsure Classic Yacht race. It was a warm, sunny morning and I was with three experienced crewmates on Bad Kitty, a 34 foot "one-off Uthoff" catamaran in full "racing" trim.



**Bad Kitty**

(F31) and **Cat Sass** (Viva 27 cat) were way inside along the shore, hoping favourable current would make up for lack of wind.

I have completed more than 15 Swiftsure races in the Cape Flattery multihull division, and apprehension of the unknown has long since been replaced with anticipation of the familiar. This is a challenging race with strong, complex tidal currents and bedeviling wind patterns. This year looked to be even more challenging than usual, with light winds and a large adverse current kicking in right from the start.

### The start

We got off to a good start near the outer end of the line and ran up the Vancouver Island shore on port tack, outside most of the fast monohull fleet and the rest of our multihull competitors. We thought there was more wind off shore so we tacked out until we hit an adverse tidal rip forcing us to tack back into more favourable currents while covering our competitors. Dragonfly (formula 40 Cat), sporting a brand new set of sails, was, as expected, walking away from us in the blistering 3 – 5 knot south wind. Our other competitors, **Blue Lightning** (F31R), **Son of Raven**



**Dragonfly**

progress was agonizingly slow, but we just cleared the reefs, continuing on into Juan de Fuca Strait until it became obvious we were being killed by the current. By now **Blue Lightning** had made an excellent recovery, hugging the Canadian shore and working the currents once she got through Race Passage.

The risk of wind holes along the shore is just that – a risk; the certainty of getting flushed in the strong flood current is something else again. We took our lumps and worked back into the shore, behind **Blue lightning**, but well ahead of the rest (by now **Dragonfly** was long gone). We worked the tide lines with some of the lead monohulls but each time we tacked out, the current killed us. We couldn't roll-tack with the Mono's and we lost ground each time we tried.

We gradually worked back to shore near William Head. By this time we were in second place behind **Dragonfly**, so our early gambit had paid off. **Blue Lightning** was close-by and played the shore tacks well, gradually pulling ahead of us as we approached Race Passage, the first real test of this race. By now, the flood tide was running better than 6 knots against us through the passage and the wind was light. We hugged the Vancouver Island side and sneaked into the passage on a slim back eddy that runs up along the shore. **Blue lightning** ventured a few feet further off and was immediately swept back several hundred yards.

### **Race Passage**

Like all good back eddies, this one was destined to end. We leaped across the tide line into the oncoming flood, freeing up our sails and frantically reaching across the passage hoping to claw our way past West Race Rock before the current could drag us back into the passage. Forward

We weren't going to catch **Blue Lightning** by sailing his game, so we headed for the American shore in the hopes of better wind, less current and an eventual port-tack lift to the turning mark at Neah Bay.

We sailed out into the fog-shrouded central strait on a gradually rising wind. By the time we approached the American shore the wind was blowing 25-knots, 30 degrees off the wave pattern made up of wind waves over ocean swells. We shifted down from reacher to jib and then threw in a main-sail reef as we beat into it, sailing fairly free to keep the boat moving. We made good time on Starboard tack, traversing the meter-plus swells and chop quite easily. Unfortunately the shoreline eventually forced us back over onto port tack, sailing directly into the nasty wave combination.



**Blue Lightning**

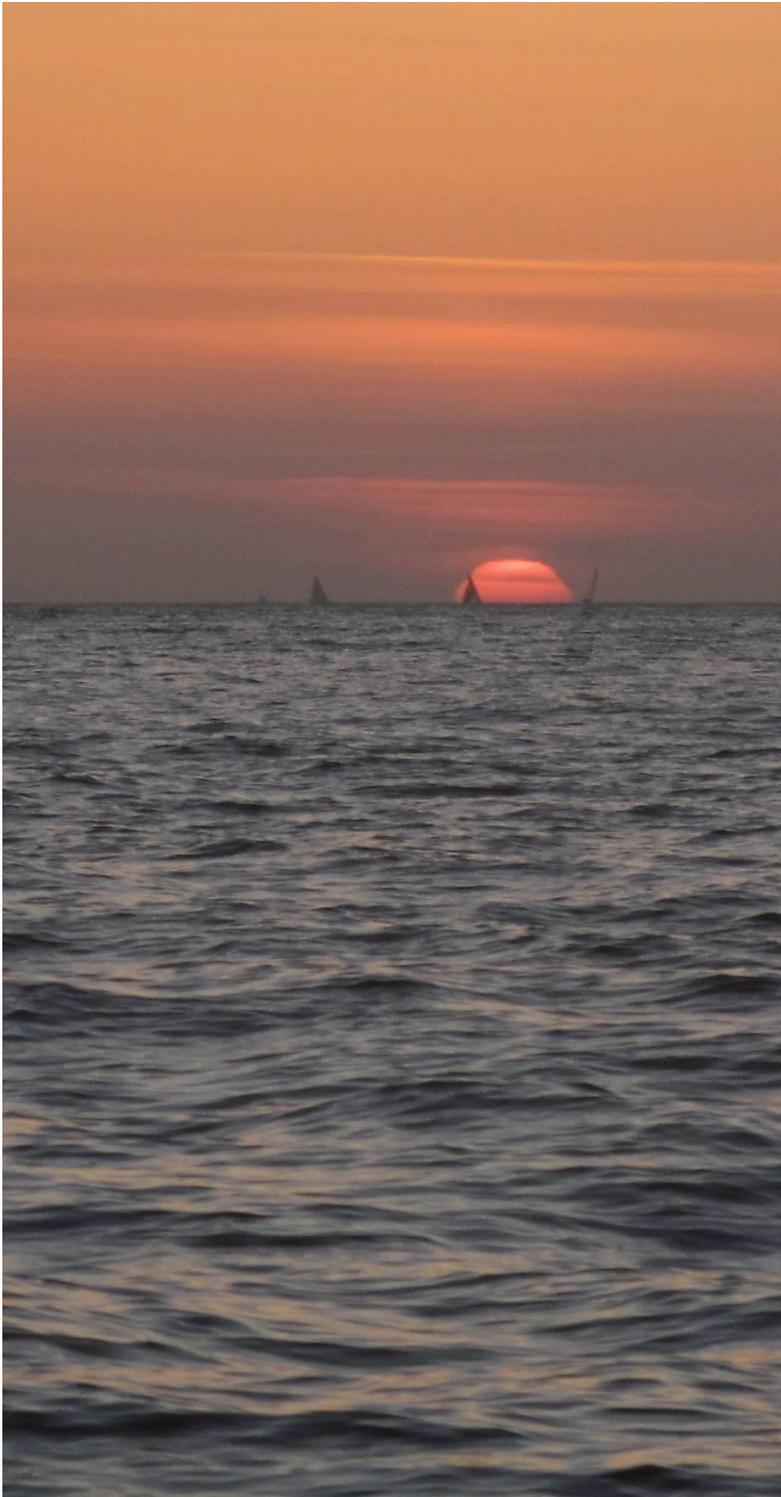
There was nothing we could do but grin and bear it. Whenever we hit a three-wave train, we sailed off the top of the first wave, into the second wave which lifted our bows high into the air before diving into the front of the third wave. **Bad Kitty** would shudder to a stop with spray flying everywhere before recovering and charging into the next wave set.

*We were not having fun.*

Several large monohulls appeared out of the mist and we realized these were fast Swiftsure Bank boats that had started ahead of us. At least misery loves company, especially this kind of

company! We slogged on; slowly losing ground to the big, fast boats sailing in their kind of conditions. Our turn would come, but not until we worked out of this mess.

As we passed Pillar Point, heading up to Clallam Bay, we began wondering where our competition was. We did not have to wait long for the answer. Out in the middle of the strait we



could see a multihull several miles ahead. **Blue Lightning** had picked the right time and place to come across the Strait, missing the worst of the confused seas. We shook out our reef and reset the reacher as we continued up the shore in gradually lightening wind. A short distance past Clallam Bay we could see **Dragonfly** running back down the Strait, at least twenty miles ahead of us. We beat them last year for line honours, but that outcome was not likely this year!

We sailed into a beautiful wind hole a few miles from the turning mark in Neah Bay. Ron prepared some hot food and we all changed into our warm evening-wear. We then sat watching tiny sailboats crossing in front of the setting sun. At least someone had wind.

With the evening social program out of the way, we thought we should get back to the job of racing. We slowly worked our way out to the wind and got back into the race. Unfortunately the Reacher, apparently weakened earlier in the race, decide now would be a good time to fail, necessitating a change back to the jib.

*Things were not going well.*

## **Rounding the Mark**

Out at the mouth of Juan de Fuca

Strait, the wind often dies after the sun sets. Early rounding boats can beat the shut-down and run home in strong winds, while the latecomers are stranded until the following morning. Luckily for us, this was not one of those nights.

We sailed up the Strait then tacked in to round the mark just as full darkness settled in. Our rounding was three hours behind **Dragonfly** and almost two hours behind **Blue Lightning**, just 12 hours into this race!

We decided to gybe back along the US shore before cutting over to the Canadian side for the run back to Race Rocks and home. Evidently we had forgotten the beautiful wind hole encountered on the way out, or perhaps we subconsciously wanted to experience it one more time. Sure enough, we sailed back into the middle of it and then took the best part of an hour to figure out we were not going to win any races with this particular tactic!

## The sleigh-ride home

Once again we slowly worked our way back out to the wind and then headed for the Canadian shore, sailing the boat hot in 5 – 10 knots of wind. We kept our orange asymmetrical chute slightly over-sheeted, seeking sail stability as **Bad Kitty** accelerated down the one meter swell fronts and then slowed as she climbed up their backs.

There is one advantage of a late mark-rounding: we had a lot of monohull company and we could now use their navigation lights to rate our progress.

*We started hauling them in.*

We sailed 10 – 12 knots to their 8 and then 12 to 14 knots to their 9. With the apparent wind pulled well forward, our heading was only a little higher but we were a lot faster. Each gybe put another couple of boats behind us.

It was a beautiful night. Overhead we had a million stars embedded in a pitch-black sky, punctuated by numerous shooting stars. Many wishes were made, all involving competitors and future wind holes.

As we ran the last twenty miles down to Race Rocks, the wind held steady and we were sailing only 20 degrees off course. We threw in a couple of short gybes to keep a hot sailing angle and stay in the strongest band of wind.

Just before Race Rocks I caught a radio weather report of 0 knots at Ogden point. This did not sound good, since our finish line is a couple of hundred meters past Ogden Point... In a typical Swiftsure race we gybe over onto port, run through Race Passage and then head for the finish; but the strong adverse tidal current (it always seems to run against us!) and the lack of wind in towards the finish line made us break from tradition. We decided to run outside Race Rocks and then follow the 'great circle route' keeping the finish line on our port beam. Our plan was to stay in clean wind, miles from shore interference, and sail around the expected wind hole between us and the finish line.

We sailed outside Race Rocks in a wind speed of about 15 knots and boat speeds of 14 to 17 knots. We could now see a number of boats that had carried on through Race Passage, going S-L-O-W-L-Y close to the Vancouver Island shoreline. We felt good! We continued on starboard gybe long enough to compensate for the expected port gybe lift as we neared shore in lightening wind. By now dawn was advancing and we could see a large freighter coming out of the harbour, headed out toward our position. We held our course past the freighter's line and then gybed over onto port.

## A little early morning excitement

We had been up for almost 24 hours, focusing on sailing for most of that time. We were not at our sharpest. The gybe went well, but a moment of inattention at the helm caused **Bad Kitty** to continue rounding up after the gybe was complete. Well... a lot can happen in a hurry with full main and spinnaker in 15 knots of wind! I was on the (now) weather side, handling the spinnaker sheet while Bob, Ron and Jason were on the (now) leeward side. The weather hull popped out of the water and rapidly climbed into the sky. I was yelling for (and hoping for) helm correction, but by then it was probably already too late. I held the spinnaker sheet for too long, partly in the hope that I would keep the sail plan sufficiently balanced for the helm to work, and partly out of slow mental processing. I was a bit like a deer in headlights. *Everything went into slow motion*. I knew exactly what was happening but it seemed like it was happening to someone else.

With the top of her mast low on the horizon (from my perspective), **Bad Kitty** continued to round up on her own. I *finally* dumped the spinnaker sheet and Jason dumped the main at the same time. **Bad Kitty** continued to round up, but the heeling angle did not improve. Finally, with agonizing slowness, the weather hull plopped back into the water. Much to our surprise, we were still upright! It took us a minute or two to get things sorted and we were off to the race again. We must have put on quite a show for the Bridge Watch on the outbound freighter.

I have only been that high once before (also on a 35 foot cat), luckily with a similar outcome. I would not like to try that on a trimaran!

## The Big finish

We reached in hard, first toward the Discovery islands, then gradually lifting till we were well clear of Trial Island, a couple of miles east of the finish line. Then we ran out of wind close to the Victoria shoreline. With our reacher out of commission, we only had a small wind-seeker to work the less than one knot 'gusts' that were probably caused by current running under still air.

Off in the distance we thought we could see a trimaran close to shore, several miles from the finish! As we speculated on the identity of this tri, we watched one Large Mono creep past Ogden point and slowly cross the finish line. We continued sailing straight for shore as the current swept us sideways. We sailed perhaps a couple of hundred yards as we drifted the last mile along the shore towards Ogden point. We were just able to tuck in around the Ogden point lighthouse and then spent an interminable time trying to make the finish line. For the longest

time we hoped for a “Mercy horn” to put us out of our misery, (what’s a few inches in a hundred mile race?) but the race committee held no sympathy for us. We finally crossed the line at 07:10 doing 0.01 knots.



**Cat Sass**

We dropped our sails and motored into a mostly empty inner harbour – it looked like we had passed most boats on the run back home. At the safety inspection dock they told us we were the second multi to finish (behind **Dragonfly**, who had finished six and one half hours ahead of us), and we had also beaten all but two of the faster-rated Mono’s that sail the same 102 mile Cape Flattery course. All of a sudden, we didn’t feel tired anymore! That mystery trimaran turned out to be **Blue Lightning** who spent many agonizing hours in her ‘hole’, finishing several hours behind us. I guess “wishing on a falling star” works after all (sorry Marc!). We discovered that **Cat Sass** had withdrawn from the Race after enduring some of

the same pounding we experienced when we crossed the Strait. **Son of Raven** was becalmed overnight and finally managed to finish almost 9 hours after **Bad Kitty**.

A celebration breakfast followed by a few hours of ‘power napping’ set us right for the rest of the day. Bob and Jason ran **Bad Kitty** back home and I stayed on for another day to visit family.

Bob Davis  
 Ron Tomas  
 Jason Arnold  
 Alec Mackenzie

This chart shows the approximate tracks of **Bad Kitty** (red) and **Blue Lightning** (purple). Track points were collected every half hour, so they don't capture actual tacking or gibing points. **Blue Lightning's** slug trail shows the hours of back-tracking at the Metchosin area near the finish line.



Track plots courtesy of Flagship race tracking <http://www.fistracking.com/>



## 41st Annual Cow Bay Regatta

July 30 to August 1, 2021

Host to the

Annual NW Multi-hull Championship &  
Fleet racing for PHRF, One-Design,  
and a new Cruiser Class!

Join us at the biggest little regatta!





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