
Hmm's Delivery 2019: Race Report

by ij
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The initial outlook for this home-theater race on Baltic seemed to promise only tailwind and a number of interesting island passage options, and as the icing on the cake, navigating the archipelago islands west of Helsinki. The wind was forecasted good to moderate throughout the entire journey. With **WRmirekd**, **bonkhoot**, and **rafa** highlighted, I'm ready for the start.

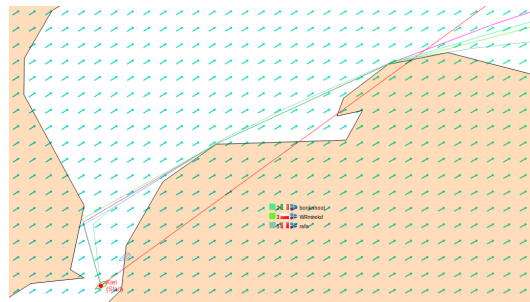


Figure 1: Navigating out of the starting bay

Starting from Kiel with tailwind, at least one gybe was necessary to clear the land NE of the start. I considered also the two gybes option but 1 minute initial leg before the first gybe did not seem worth it given the extra performance impact because the wind rotation was, while favorable, relatively slow. In addition, this is not a short race that can be (almost) won at the first corner. There was just enough room on the opposite side of the bay to time gybe for clearing the land cleanly. Then another bit of land and we are off to relatively open waters.

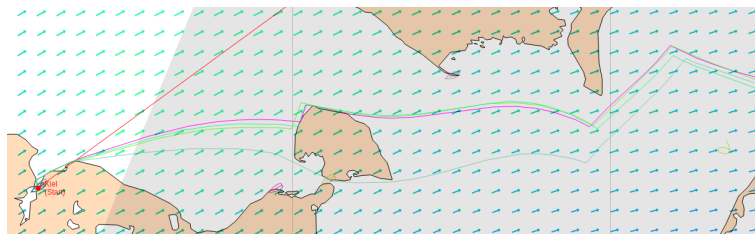


Figure 2: First island blocking the way

Routing without coast checks, however, indicated that the optimal route would pass straight through Fehmarn Island. I had experimented with both options around it before start and the north one seemed clearly faster. I had setup the DCs for the route back then and noticed that some beyond maxvmg sailing nearing the island but was thinking it is by small angle and I would be rerouting once clear of land anyway for maximum accuracy so I did not look into the details. That ignorance was an error. After clearing the land, I was surprised by most of the usual top boats heading to much higher than I was sailing to. A few boats including **rafa** and **batatabh** were clearly aiming for the southern route but the rest not so much... I should have looked into this earlier!

Back to the drawing board, I quickly tried to test number plans to reach the north corner of the island and all of the fastest ones included a gybe at the west coast of the island itself. A look into wind gradients reveals that sailing higher TWA allows access to the higher wind speed ahead sooner but other than that, it is not clear cut either way. I was very lucky this time though, it seemed that many went overboard with the initial angle after the land corner and my initially lower TWA was going to result a faster route than theirs (but I might have already sailed past the opportunity so I could not know this for sure). **Bonkhoot** was sailing somewhere in the middle and probably within the stability margin where no significant difference is going to be expected according to my calculations. So I settled to a smoothly curving route that still went quite low with the gybe at the west coast of the island.

The next WX update occurs before the island. Inferring from the TWA predictor, no significant angle changes took place because of the update (for the nearest hours). Minor tweaking into the route onward. When paths crossed around the gybe, my expectations came true as my boat and **bonkhoot** where within single server tick from each other. The others selecting the northern option are already a little behind including **WRmirekd**, which is a little relief given how hard it often is to gain any lead to him.

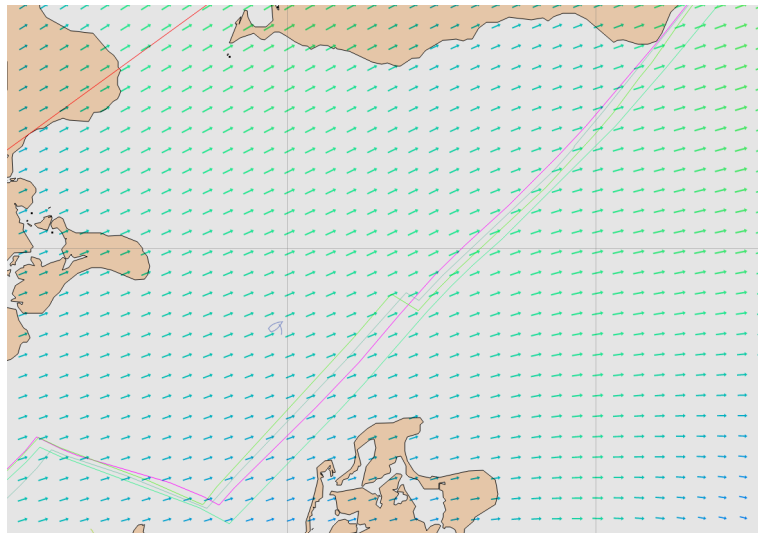


Figure 3: To gybe or not to gybe?

More nice curvature follows after the island as the wind keeps doing large an-

gular sweeps. The boats from southern route join us with much better result than I was expecting from that route. Thus, also **rafa** is still hot on the heels completing the contending trio I keep track of in this race. I discover that qtVlm (at least with my style of routing w/o VBVMG) produces quite invalid routes with sailing approximately 2 degrees beyond maxvmg angle for considerable amounts of time, lots of manual tweaking is required to fix all those issues all the way until the last leg towards Helsinki.

A WX update is to occur before we gybe and head NE, well clear of the gybe itself giving ample time for planning the next gybe point. With the new WX, qtVlm insists on having a starboard visit in between our long NE run. But that must be an error! The wind angle around there is nowhere near as good as at the start of the stretch, so the correct alternative is to delay the entry gybe instead and aim straight into clearing the coast ahead. Both **WRmirekd** and **bonkhoot** fail to notice this and perform the extra gybe pair at the middle of the stretch.

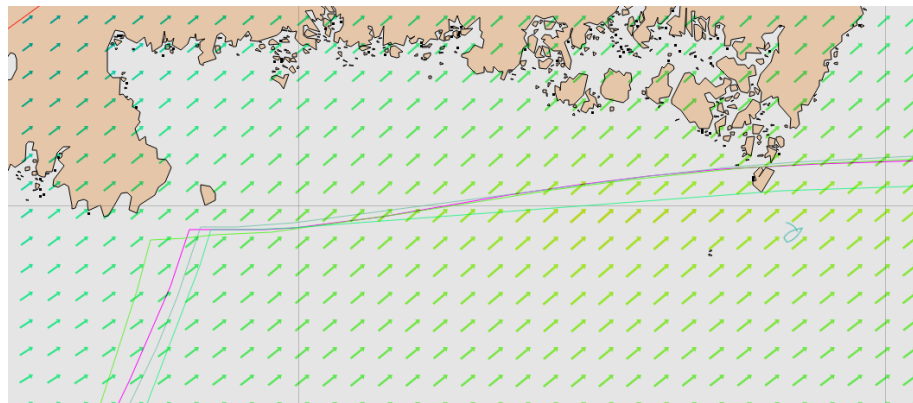


Figure 4: Small island blocking the way

After clearing the land, the small island of Utlängen is the next obstacle ahead as the optimal route again passes straight through it. As there is no clear difference either way with the current weather, I just select the outer option with slightly better wind but the weather update is to occur shortly after the gybe. The new weather clearly favors the northern option (but the optimal route would still pass through the island). While investigating this, I keep sailing for the outer route (I rarely make drastic course changes based on the first routing attempt unless there is clear reason due to an easily identifiable change in the weather to justify such change in tactics, which there was not this time). The delay forces me to really push the angle initially to make it to the northern passage between the islands. Meanwhile, both **WRmirekd** and **rafa** adjust their courses earlier. **Rafa** also had gybed slightly later thus already being better positioned for the northern passage so I anticipate him gaining some now. **Bonkhoot** prefers to keep sailing the outer route.

It is time to turn attention into the next two islands ahead, Öland and Gotland. Initially, sailing northwards in between them was the preferred route combined with a very long leg to finish but now a windhole is developing there nullifying the angle benefit that middle route would offer. As again, the best route would cut slightly through both islands but with little tweaking, I'll soon pass both south side. There are a number of gybes on this stretch but the very exact timing does not seem

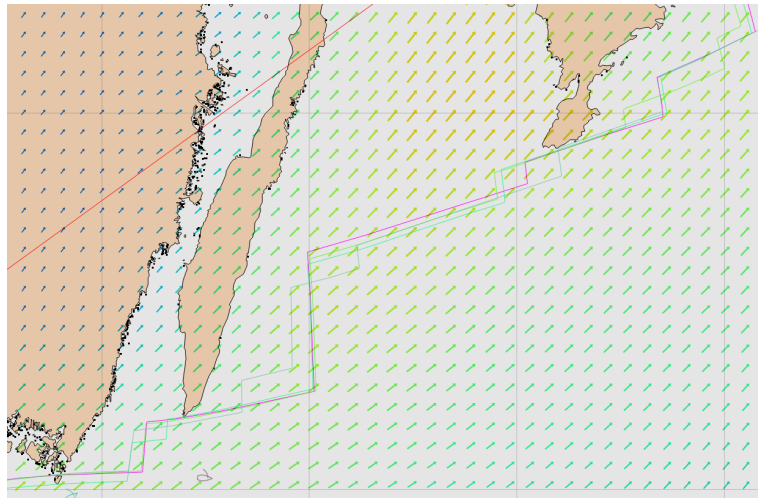


Figure 5: Large islands blocking the way

critical and there is some variation between the boats.

When passing south of Gotland, I am sailing on a planned route that keeps some distance to the southern tip of the island. Immediately after the new WX, however, I decide to cover **bonkhoot** and **WRmirekd** that will pass closer to the island just in case as neither of the routes looks immediately a clear winner. Better to play safe without bothering myself too much into the minor differences (if any).

After passing Gotland, we are preparing for the long final leg to finish at Laut-tasaarenselkä, Helsinki. First, however, the archipelago islands starting from Porkkalanselkä need to be successfully navigated. Some observations about this leg first:

- Melkki Island (likely) blocks the optimal route to the upper mark
- There are light winds close to Hiiumaa Island
- Close to finish line, the wind speed is better away from coast
- The archipelago penetration angle is likely close to max boat speed TWA
- ...but still 2 WX away so hard to know wind direction at that time
- There are number of good passage ways through the islets where only small course corrections needed

Looking into the Melkki passage, it seemed best to skip the upper mark and just sail into the middle of the line to avoid getting too far from the max boat speed TWA; the difference between the middle of the finish line and upper mark (if hypothetically sailing through Melkki) is just a few seconds anyway. The long stretch on the gulf gives some wiggle room for aligning into the best path through the islets. At this point (2 WX away), however, it is hard to know which of them is the best, the optimal angle gets fixed by the last WX update. At this point it looks that initial entry from out is better than using the inner opening so I aim towards an outer entry.

Similar to the earlier long stretch, it might be possible to skip the last gybes but after careful evaluation, it turns out they are necessary (because of the light

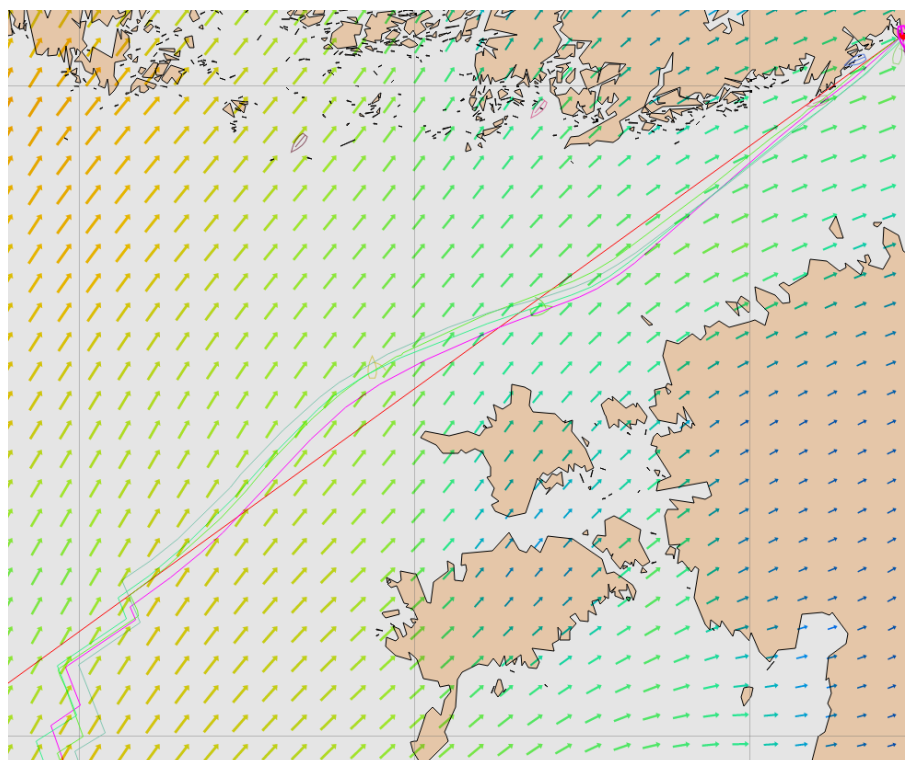


Figure 6: Last leg overall

winds ahead, I guess). I make the last gybe clearly earlier than **bonkhoot** and **WRmirekd**. **Batatabh** and **Go4iT** keep sailing without the last gybe and for some time achieve position closer to the finish line, but the light winds will get them.

Second to last WX update indicates, that due to my initial selection for the entry point, I might not be able to sail the last miles within the max boat speed region as TWAs as high as 127 will be necessary but given a local forecast I looked (it is home-theatre, after all ;-)), I'm anticipating that the coastal winds may turn more than the forecast by SOL so I keep continuing according to the same plan. From his lower position, **Bonkhoot** aims much higher into the wind than rest of us and starts to close in with an alarming rate. The wind speed gradient is very steep at this point. He has around 0.8 knots more wind than me. I am initially quite worried about that but then after evaluating the wind gradients after the light winds, I realize worrying about it is shortsighted. **WRmirekd** keeps sailing a path that clear aims for the inner entry.

The last WX update slightly helps with the TWA situation and I pick an entry point in between which allows me to mostly achieve the max boat speed. When nearing finish TWA=123 is necessary but it is still acceptable. To avoid one islet, TWA=128 is necessary, which is already where the polar clearly applies a penalty, but luckily only for a short stretch. As the angle changes are small, I think these turns could be sailed on DCs with wake-up and sentinel DCs prior to the actual course corrections. But Finnish archipelago is beautiful so better to sail that in helm despite an early morning wake-up (the real reason is that there's a minor drift

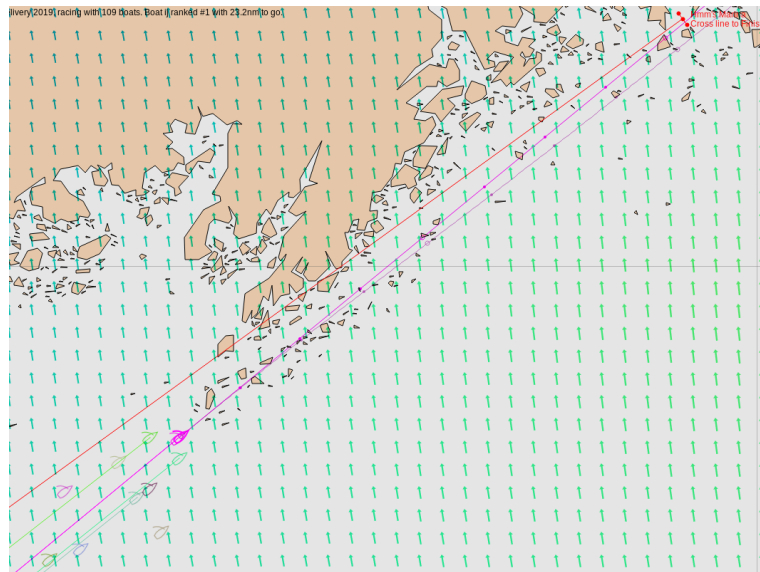


Figure 7: Entering the archipelago

in AGL position but I would have enough lead to cover even that safely :-)).

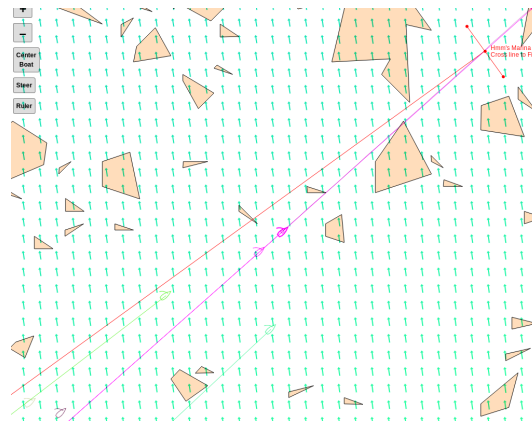


Figure 8: Approaching finish line

During the night, **bonkhoot** has sailed towards the outer route and keeps going even more out after the point where I would have made a turn for the middle point of the finish. Either he is happily sleeping or has decided to aim to other side of Melkki and then to the upper mark.

Final maneuvers to do and I finish first, **bonkhoot** turns out to be capable of maneuvering the last turn towards the upper mark despite the early morning taking the second place. The last place on podium goes to **WRmirekd**. **Bimmer** is less lucky and a small drop of concentration results in relatively short BBQ at Melkki. In the meantime, **batatabh** and **rafa** slip past him. Congratulations all and welcome to Helsinki!

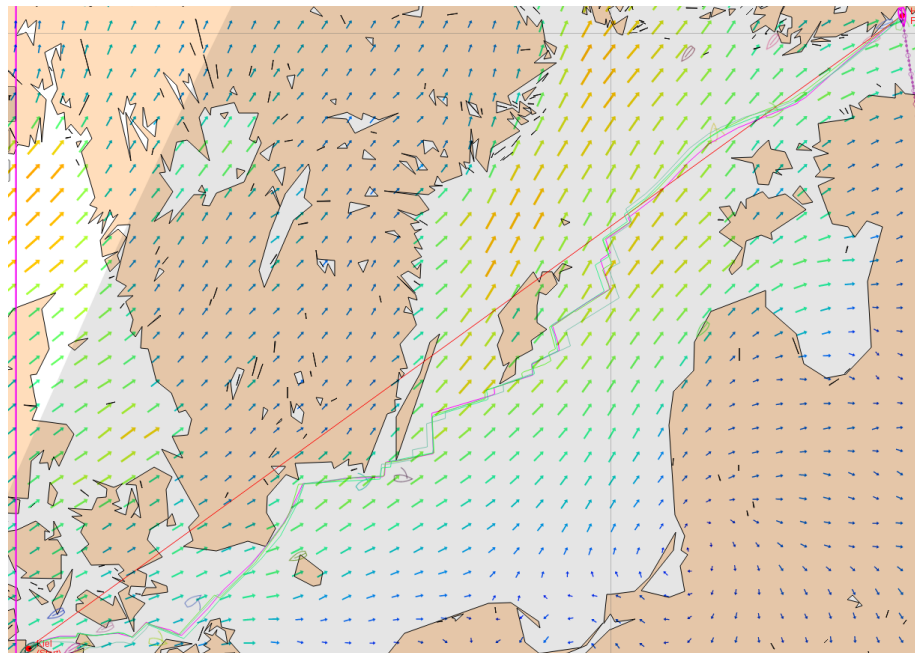


Figure 9: The overall route