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## Sardinia Cup 2019: Race Report

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by ij  
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This race is part of SYC series which features WRF weather. The WRF weather makes the races more interesting on two fronts. First, the high-res weather grid often features quite steep wind speed and angle gradients. Second, the weather updates tend to feed higher entropy (disorder) into the weather making it harder to guess which way is the best and giving more opportunities for quick recoveries for those who have fallen slightly behind. The large changes also imply that one really needs to keep watch on about every weather update and have quick reaction if a significant change occurs to capitalize the window of opportunities before the others find out where to sail next.

South coast was quite uneventful as winds were quite stable. I sailed slightly more out than most of the other boats but in practice only the last curve in front of the bay before Capo Teuluda made some difference.

The west of Sardinia was to feature much less wind and lots of local effects from WRF model making the best route guesswork. The larger island SW of Sardinia can be passed either outside or inside. The outer route might catch good winds sooner and avoids the need to detour the large blue forecasted for Capo Caccia mark. The inner route seemed to initially have better progress but needs to route at some point of time out around that blue.

The first weather update occurred slightly before the Capo Teuluda mark. The updated weather delayed the in/out decision to the next weather as the best progress path was now in but effectively shared until the next weather update before the Calasetta mark. After rounding the Capo Teuluda mark and tightening the sheets me, **bonkhoot**, and **WRmirekd** were basically tied closely followed by **rafa** and some others. A few boats chose continue with eased sheets possibly hoping to skip the lower wind speed when nearing the Calasetta mark combined with a hope for better outlook for the outer route, which never materialized.

There was a windshift during the night and we would be heading after a tack towards Calasetta when the weather update is expected to occur. The night shift seemed to have managed my boat quite well possibly thanks to the newest version of my in-boat navigation software plotting an enhanced curve for the wind rotation. When I woke up for the weather update, I had managed to gain a slight lead of 0.1nm+ to **WRmirekd** and **rafa** but **bonkhoot** was still doing quite well.

QtVIm with the current weather recommended sailing as close to the west coast of Sardinia as possible but to gain some height across the channel early on (right after the weather update). That height is necessary to clear the headlands further ahead. However, the update turned the tables. It seemed now better to stay in

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the better winds close to the Calasetta hugging the coastline with repeated tacks while waiting for the upcoming wind rotation. For some reason **bonkhoot** failed to notice this in time and only after two fifths across the channel followed up with a correcting tack resulting in significant losses. Thus I had now secured a lead of 0.1-0.2nm.

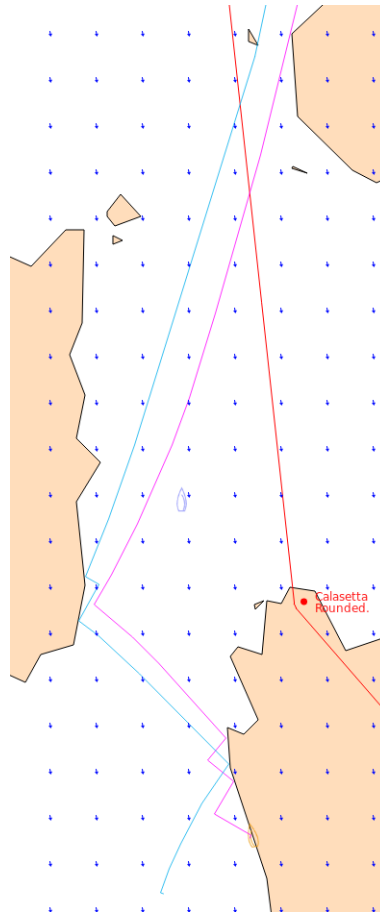


Figure 1: Crossing the channel during a wind rotation to gain height to clear the headland ahead (blue is **bonkhoot**)

As I set up the coast hugging tacks manually, it didn't align exactly to the point where qtVlm recommended to cross the channel but I sailed slightly longer at the Calasetta side. That gave me slightly better angle and wind speed for the crossing but also had a small cost near the end as the wind rotation started to reverse, which initially made me alarmed if I had lost a bit of the lead. I was planning to tack well before the coast of the opposing island because I had then enough angle to clear the first headland without need to continue close-hauled and the winds were clearly better ahead and east. Thus, I could catch the winds and accelerate better than sailing all the way to the coast of the island in west. Initially, there was a wind angle disadvantage but the angle would open up slightly anyway so the impact would not be very large and later the angle advantage would reverse for my

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benefit.

**WRmirekd** who had crossed earlier was initially on the very same height I was planning to sail on but very slightly before my tack, to my surprise, decided to hug the coast of the opposing island and tacked. Also **bonkhoot** had crossed earlier and made similar extra tacks to get close to the island. While it was not intentional, perhaps my later crossing point concealed my intentions and deceived other to think I was going to sail longer across and tack only at the coast. **Rafa** chose to keep company to the coast near Calassetta even longer than me.

While sailing northward, **bonkhoot** kept higher while **WRmirekd** traded height for speed and sailed close to the height where I was on. The next weather update occurred slightly before the next coast hugging stretch and bought no change to the route in the immediate vicinity. That part of coast even had ready-made "steps" matching closely to our headwind angles. After clearing the headland with steps, there was yet another to clear after a smallish bay. Again, the winds favored sailing as east as sensible.

After the third headland, there were two main options. One can stay near the west coast gaining first speed or sail almost straight ahead north. The latter option included moving westward using an upcoming small wind rotation in order to prepare to the blue bypass later. It was very unclear which one will be better not helped any by at least two weather updates that were also set to occur until the blue bypass is fully sailed. Also qtVIm seemed to be easily fooled and get stuck into some local optimums but I luckily also got the straight ahead route once so I knew it existed (in the end I had to occasionally force pivot points to route through there).

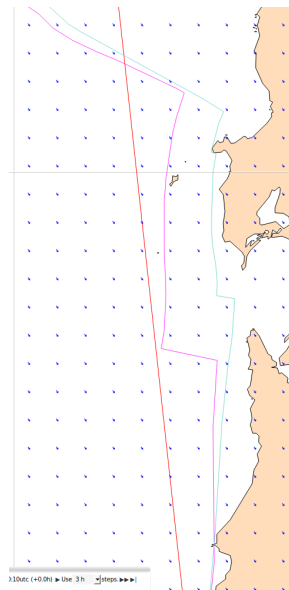


Figure 2: Routing choices (blue is **Starship**)

I chose to head straight north until wind rotation forced yielding slightly towards NE before heading west during the small wind rotation. It was well possible that the next weather update could let those east of me who will be able to sail past me to benefit from their position more north than me. This is the WRF weather,

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remember, it can well happen with it! But then, it is impossible to cover all fronts in a situation like this. **Rafa**, **bonkhoot** and **psail** clearly chose the same route as I did. **WRmirekd** sailed first more east making me a bit nervous but after some delay corrected to a more northerly heading. **Starship** and **RICOTINA** went to the eastern route. **Kipper1258** headed somewhere in the middle.

As anticipated, the boats east of me sailed past me but they were expected to require extra tacks at non-optimal point due to the next large cape. **Bonkhoot** took an early turn towards west, yet another front opening up where an unlucky weather update could cost me the victory. Right before tacking back to northward heading, the next weather came. It was obvious that the boat east of me would gain some but would that be enough? Those boats would need to sail slightly deeper into the blue boundary during detour unless they tradeoff from the balanced angle and make an early tack. And the next weather update comes when close to that blue so anything could still happen. They could speed away if blue gives in; I could get caught in the blue if it extends.

It was hard to assess from the complex weather situation how it will go with **bonkhoot** because of steep and varying wind angle and speed gradients everywhere around us (I didn't bother to test run it in qtVlm). But I guessed that our good heading during blue bypass will deal any advance he can make in the better winds so only a disaster weather update next could create troubles for me from that side.

As the time for the tack to the bypass was approaching, I was on watch for the boats coming from east and noted that while it will get tighter than before, I will still retain the lead. I was trying to chose whether to match their height or tack earlier as planned. The former would mean deeper passage into the boundary of the upcoming blue. I decided to keep on as planned and just hope that the blue will not let the northern boats to sail away without slowing them down.

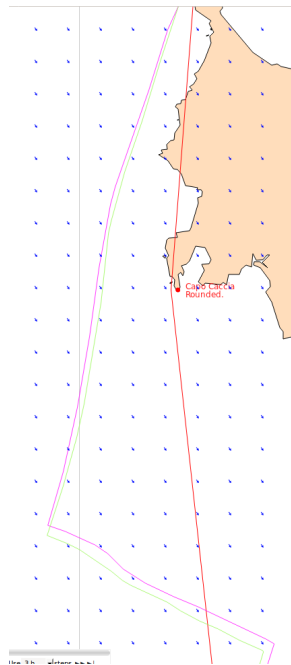


Figure 3: Psail turning earlier during blue bypass (green is **psail**)

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The weather update during the blue bypass brought a big change into the next couple of hours. The wind was much less but also added nice dynamic wind rotations to take advantage on. As I will be sleeping during the upcoming tack towards the next mark, I wanted to make sure I make the tack as soon as possible to avoid repeating the late tack disaster of the New Hebrides race. The tack went fine as only **psail** had managed to undercut my route but he was clearly deeper into the blue which I had wanted to avoid due to the extra cost. If the weather update would diminish the strength of the blue, he might still have an opportunity; but that did not occur. The better winds allowed me to retain the lead which, as it turned out, had grown to 0.4-0.5nm.

As Capo del Falcone and the weather after it will funnel all boats, very little is expected to occur after that in the relative order of the boats but up to the last weather before it, many had good opportunities if the weather would have been favorable. After Capo del Falcone, there was “riches get richer” wind while our boats finally started to speed up. The superior winds lasted almost until the last WP and doubled my lead allowing a very relaxed finish. **Rafa** and **WRmirekd** sailed to the remaining podium positions. Congratulations.

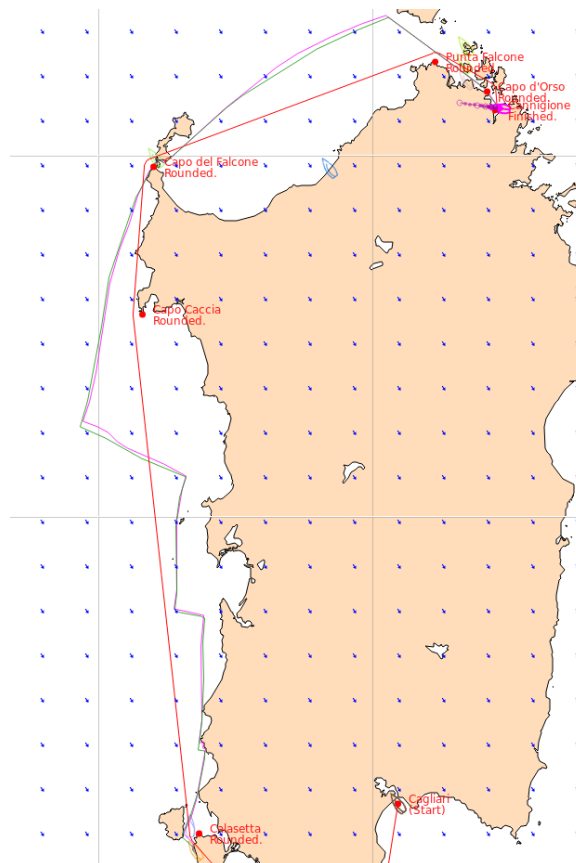


Figure 4: The overall route onward from Calasetta mark