# RACE SCREEN PRINTS AND COMMENTS

# SATORI SYC

# FOR THE

# HATTERAS ISLAND SPRINT 2020 (24 nm)

# STARTING AT 1900 UTC OCTOBER 10, 2020

# FINISHING AT 00:44:22 UTC OCTOBER 11, 2020

# SKIPPER - JOHN GAMBLES RCYC and SYC

**(Satori finished 13th of 72 boats racing of the 100 boats registered)**

**(Satori is ranked 57th of 253 in SYC World Rankings after 8 of 9 races)**

# Chart and Info: Hatteras Island Sprint 2020 (23nm)

Start time: Oct 10 2020 19:00:00 UTC

Start by Buxton at position: 35N16.8150 075W32.1126

Marks:

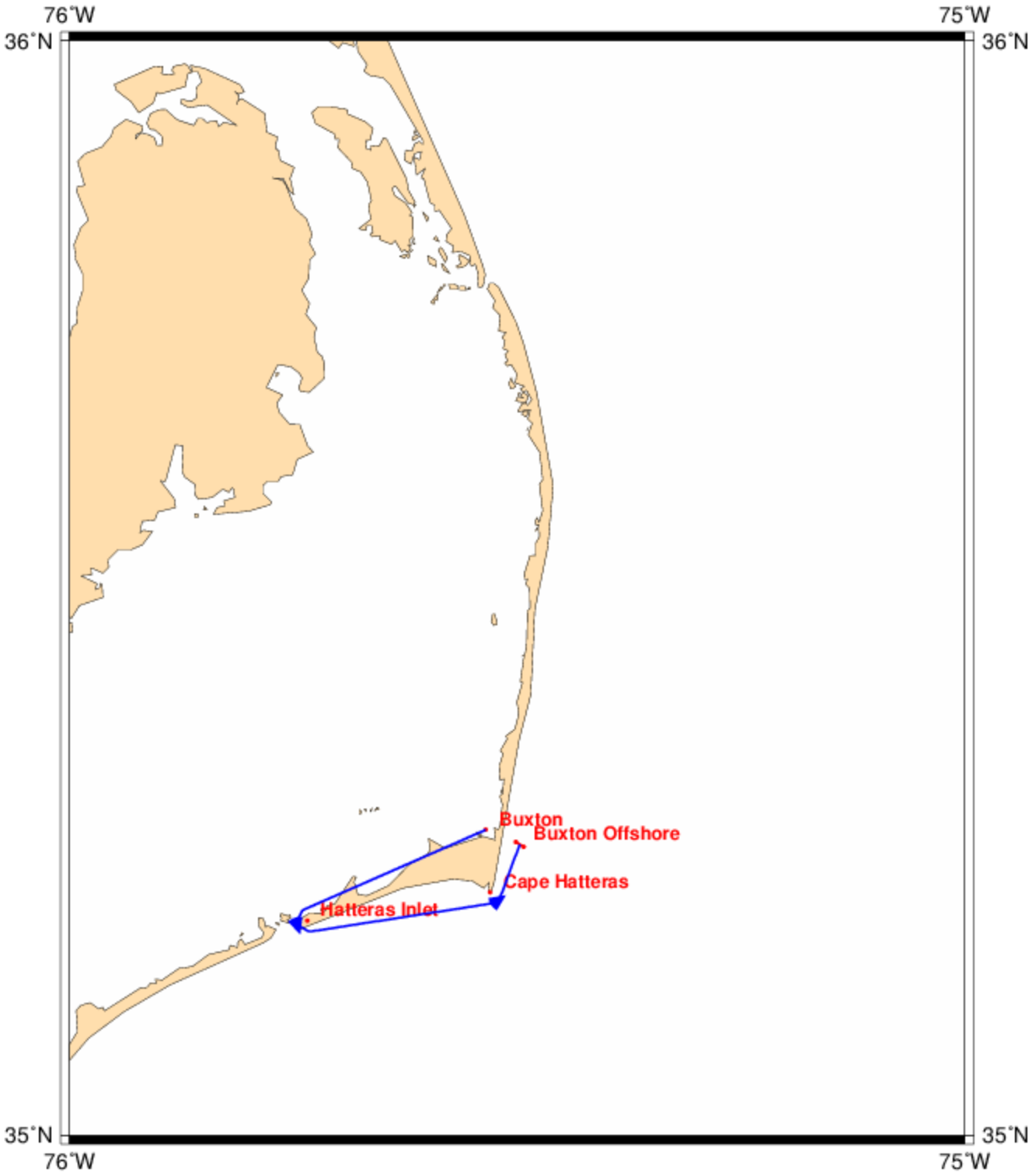
BRG is the bearing from ship to mark at scoring position.

1: Hatteras Inlet - Leave 35N11.8236 075W44.0694 to Port - BRG 072
2: Cape Hatteras - Leave 35N13.3668 075W31.8144 to Port - BRG 326

Finish line:

Line by Buxton Offshore between marks A and B at positions:

A: 35N16.1395 075W30.0904
B: 35N15.8777 075W29.5700


76°W
75°W
36°N
36°N
Buxton
Buxton Offshore
Cape Hatteras
Hatteras Inlet
35°N
35°N
76°W
75°W

Again, I have split my Report into two parts, a review of the Race itself and a discussion of my attempt to use QtVLM (Qt), which I hope will provoke more discussion of Qt that will get us beginners up-to-speed and make us more competitive. My enthusiasm for SOL gets better and better as I see that I am improving. I am sure that it is the same with each of you!

This was a fun and interesting Race both tactically and weather-wise. I think that this was the first SOL race I have been in where like IRL around the cans the starting line was head-to-wind and tacking was going to be a major component of the first leg of the race. For me it was mostly SOMPs racing with Qt playing a very minor role.

After the Race I like to review the courses sailed by the top-ranked SOLers, particularly those on the Podium, to see what they did differently that I might learn from. I hope that you are taking the time to do this because I do find it very informative. After the Race I go to Settings and temporarily remove some of the clutter from the screen (wind speed and wind direction) in order to see the boat courses more clearly. I then look at the course of the winner and my course, which are always there. Next I go to the Main Fleet ranking list and select individual boats to have their course posted to the screen to compare with mine.

On the Starting Line we had a decision to make tack North or go South through the gap between that little island and the north shore. I chose to go South because the winds were higher and the course would be shorter. 1st and 2nd Place boats **Zorba777** and **Calmxy** did the same. 3rd Place boat **rumskib** also went South and then sailed up the east shoreline of the island. Qt was telling me to go North from the start which I ignored, because of the added miles and lower wind strength. To my surprise when the north and south fleets converged there was not much separating them. **bonknhoot** went North and finished 6th compared to my 13th.

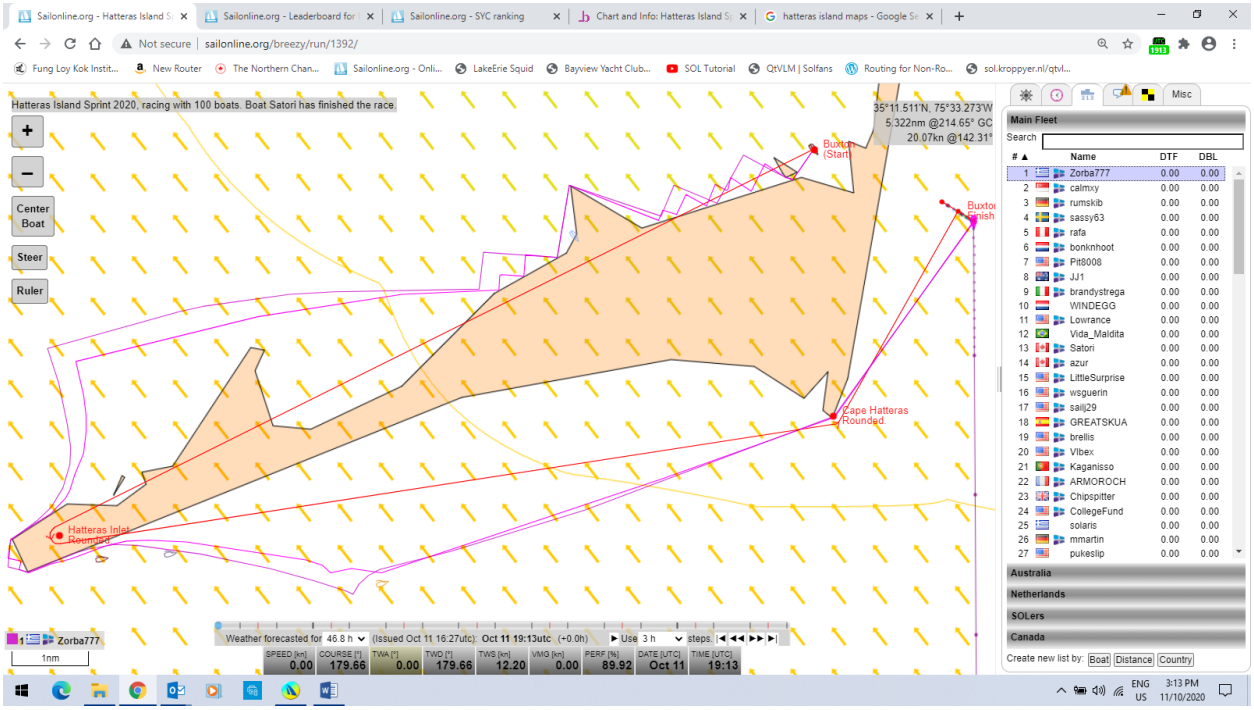
One of the most obvious differences was that **Satori** put in more tacks along the north shore of the Hatteras Island. For example, **Satori** put in 18 tacks of shorter lengths and **bonknhoot** put in 9 of long lengths as did **Zorba777**. The similarity of their courses makes me wonder if they were using a Qt routing maybe with slightly different Settings. Who is going to tell us what these Settings do to performance? On the other hand **Calmxy**, who also went south of that little island at the start, put in 20 tacks of shorter lengths even than mine. I was watching and covering **Calmxy** since we were within eyesight of one-another along the north shore and paying particular attention to method used in tacking. Very few 90° tacks! I was tacking to a lower speed first and then to the desired COG course in order to reduce the temporary Performance Loss. **Calmxy** seemed to be staying on the low speed reduction tack for longer.

As we got half way down the north shore sailing by TWA became critically important. If you did not handle the weather change as we approached the Hatteras Inlet it would have been telling. You will see on the screens that follow what dramatic impact it had. I was pleased at the way **Satori** handled it. I tacked south early as did the winners and on TWA it took **Satori** on a U shaped course that took us right into a parallel course along the shore line where I switched to COG. I rounded into Hatteras Inlet in 8th Place and here is where I made a costly tactical decision. When you look at my course on the screens that follow you will see that I decided to throw in a tack and it was a mistake. Did I want to stay in the "parade" or try to move up as we rounded to East along the south shore? **azur** did the same and it had an impact on our final placements. You do have to try to get out of the "pack" but you have to accept the consequences if you are wrong!

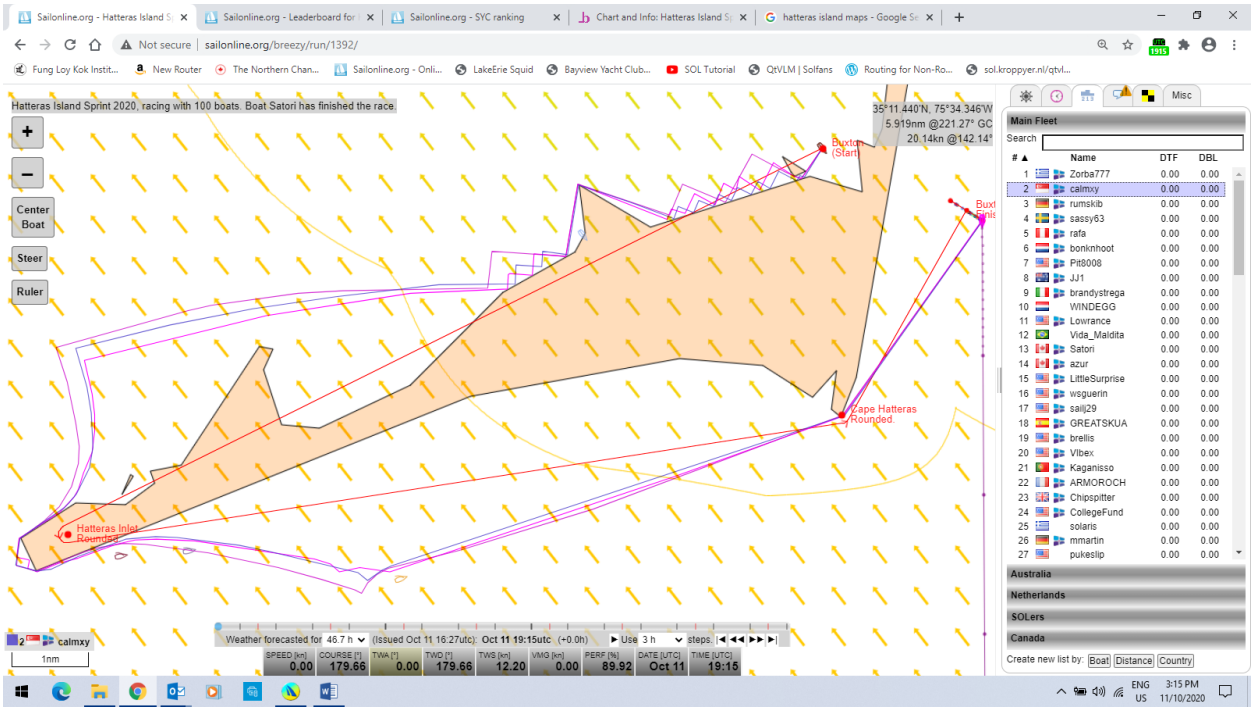
I did produce a Qt routing for the along the south shore to the Finish Line but I did not post the DC's to SOL because I thought that it was taking me too far south compared the competition. What I did do was toggle back and for between the Qt and SOL screens to see how **Satori's** course was comparing with the Route on the Qt screen. Surprisingly, I eventually found that the course **Satori** was sailing by my SOMPs while covering the competition put me right on the Qt Route. So at that point I uploaded the balance of the DC's for the Route. At rounding Cape Hatteras to the Finish Line I erased the balance of the DC's and again manually sailed on the straight-line COG course to the south end of the Finish Line.

I have told you that I am not yet proficient at rounding Marks or land. I still am hesitant in my 10 or 20 second counting of the server cranks and worried about being early in my tack or gybe. So, I invariably over-lay the Mark or turn. In this Race it made a critical difference in the Podium finishes. Rounding Cape Hatteras to the Finish **Zorba777** rounded very tightly and **Calmxy** slightly overlaid the turn. That tiny difference moved **Zorba777** from 2nd to 1st Place, finishing just 5 seconds ahead of **Calmxy**. I am going to have to participate in more Practice Races to try and improve my rounding capability!

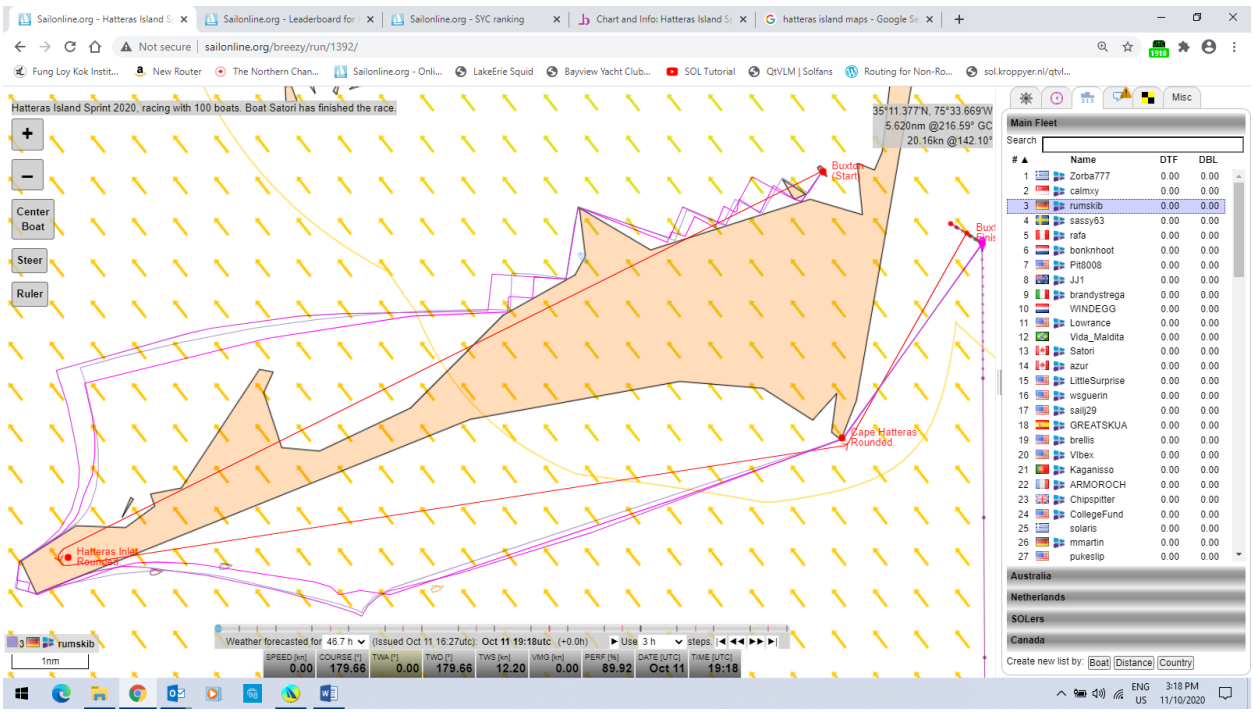
Following are a series of Screen Prints for you to view the course sailed by **Satori** compared to courses sailed by the **Zorba777**, the winner, and **Calmxy** and **bonknhoot**.



Here is 2nd Place **Calmxy's** course compared to **Zorba777**, the winner, and **Satori**.

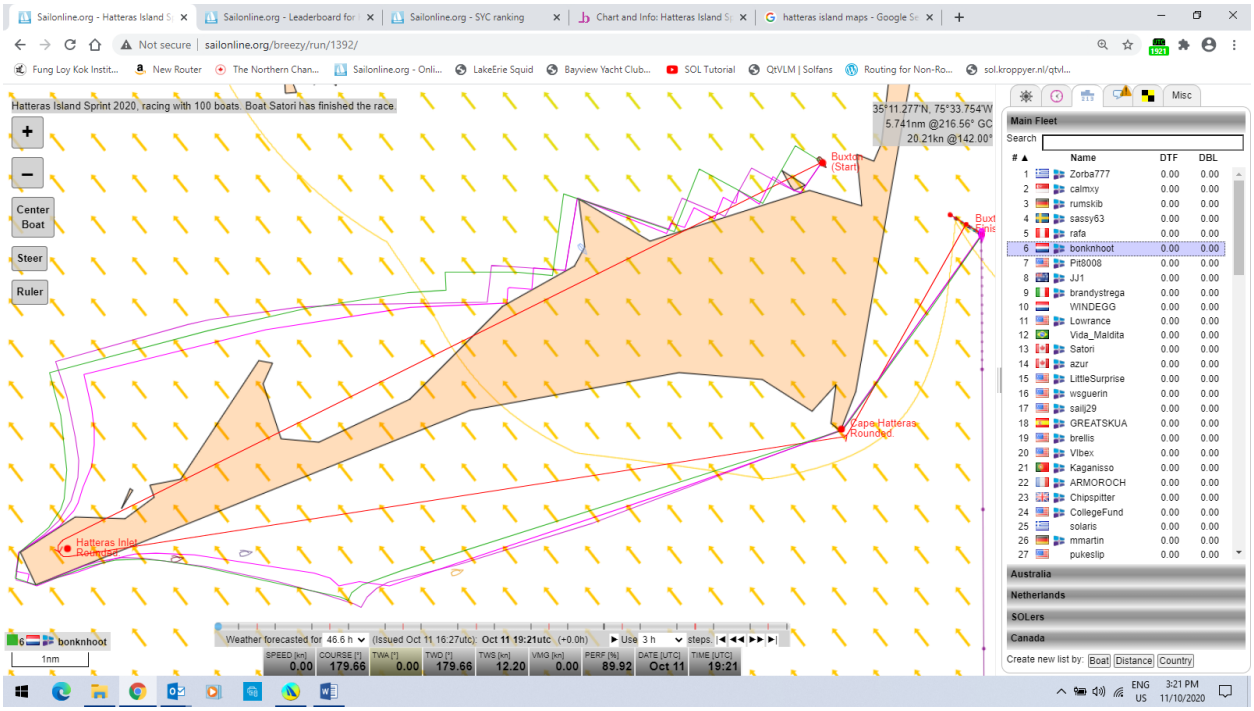



Here is 3rd Place **rumskib's** course compared to **Zorba777**, the winner and **Satori**

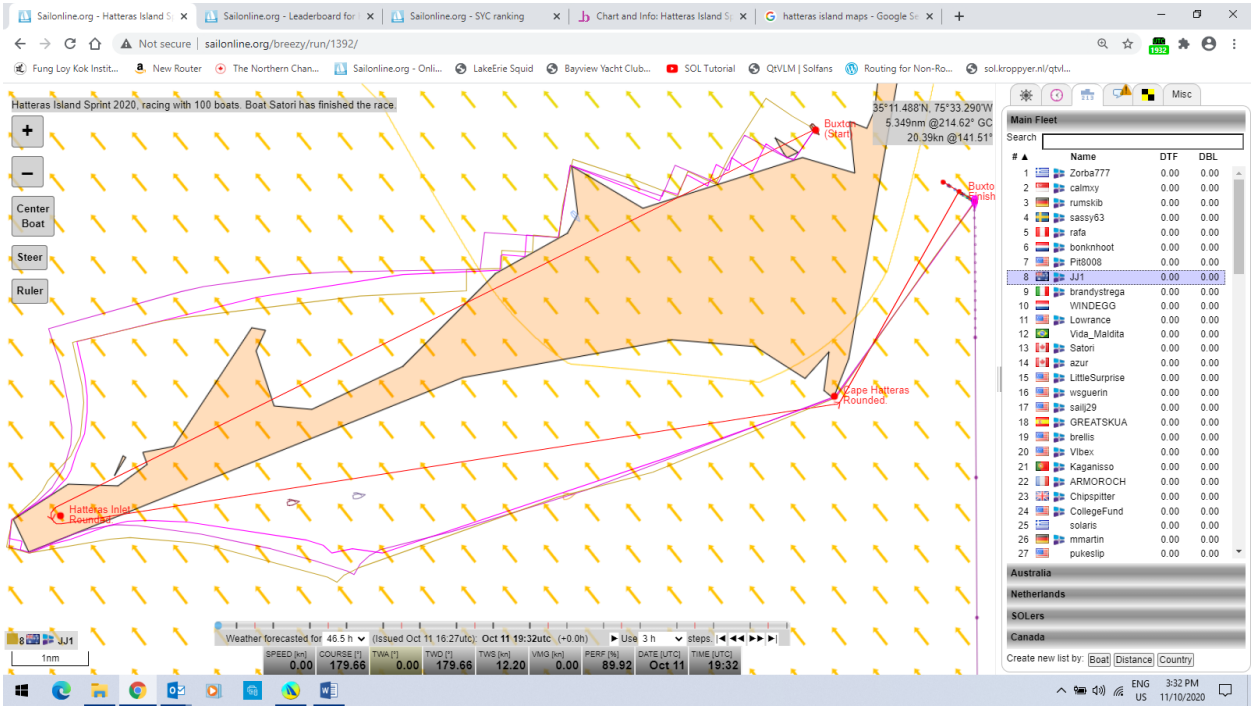


Here is the course of **bonknhoot**, No. 1 in the World Rankings, compared to the winner **Zorba777** and **Satori**.

You can see **bonknhoot** going North at the Start and **Zorba777** and **Satori** going South. The difference in the number of tacks is quite obvious, 9 for **bonknhoot**, 10 for **Zorba777** and **18 for Satori**. You can see the tack that **Satori** exercised in the Hatteras Inlet that was a costly mistake. How far south each went had an impact on the wind strength experienced.



Here is a Screen Print of the course of **JJ1,** who finished 8th, compared to the winner **Zorba777** and **Satori**. He is to be congratulated since it is the first time he has finished in the Top 10. A game it is but it is exciting to make it into the Top 20 and then the Top 10! You can see how he did it. Farther North at the Start, 13 tacks on the north shore, the handling of the wind change before the Hatteras Inlet, going slightly farther south to higher winds on the south shore. Congratulations **JJ1**.



Using QtVLM

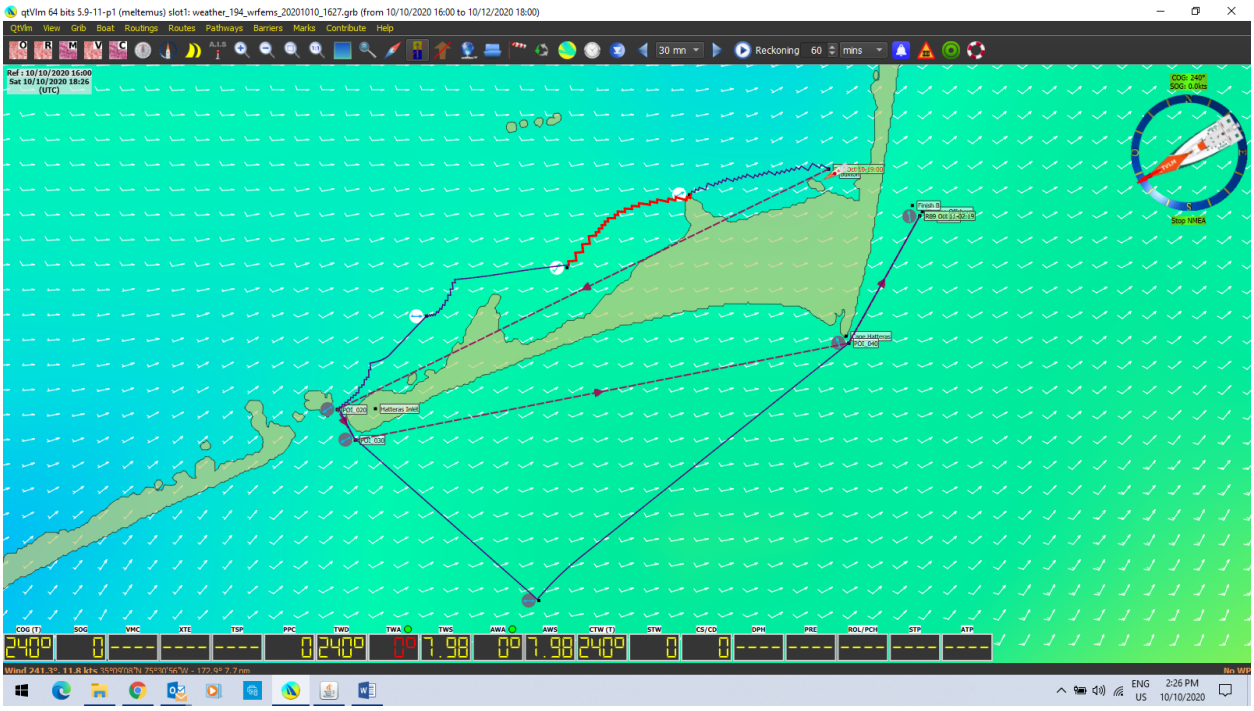
One of the things that attracted me to the Hatteras Island Sprint 2020 was that I could sail this Race by SOMPs and enjoy being at the helm just like IRL. But at the same time I thought that it might be an opportunity to use a Pathway in creating a routing, something that I have not yet done. So, again, to refresh my introduction to the use of Pathways I went to Tommy Cod's YouTube tutorial on its use – QtVlm Advanced Features – Part 2.

https://www.youtube.com/watch?v=XgzjsirD2v4

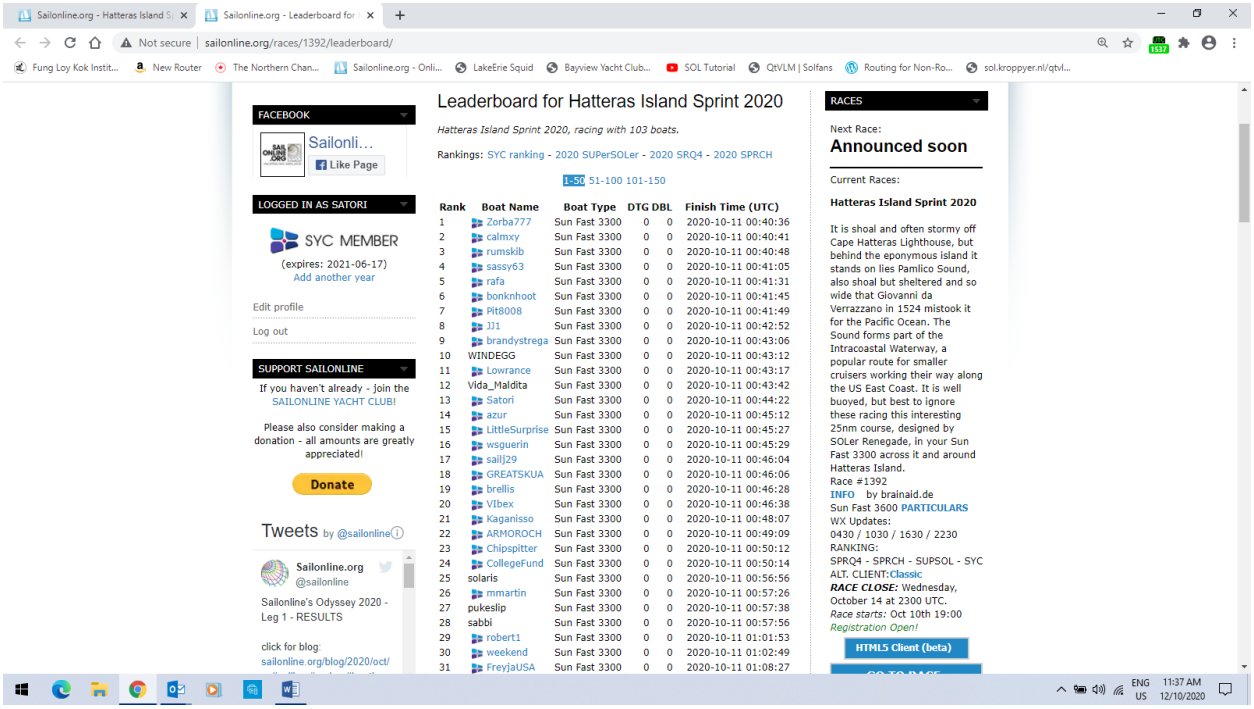
You can see from the UTC time of 18:26 the WX that I was using. I put in 5 Waypoints. One near the boat, 2nd and 3rd at the north and south end of Hatteras Inlet, 4th at Cape Hatteras and 5th near the Finish Line. When putting in the last POI near the Finish Line I had trouble not grabbing one of the Finish Line Marks and moving it! The dotted line shows the Pathway. The blue line shows the routing/Route created using optimum simplification and then optimization. Look at the ridiculous number of tacks along the north shore! The red line is indicating that it is hitting that peninsula! Tell me why when the settings are to avoid land. I guess putting a Barrier in would avoid this but why is it necessary? I am getting some advice from **FreeNeasy** on deleting POI's to solve the problem which I have not totally absorbed or tried. Needless to say I did not use this Route in the Race. I wouldn't mind some discussion on this on the Forum.

I did produce a Route from **Satori** to the Hatteras Inlet but I did not like how far north it was sending **Satori**. As I have said before Qt does not know that how fast you get there is not more important than getting there ahead of the competition!

When I rounded the south end of Hatteras Inlet I did produce a Route the Finish Line but I had to wait for get off dry land? In Qt the size and shape of Hatteras Island is obviously different than SOL? On Qt **Satori** was sailing on dry land for some time after rounding the Hatteras Inlet Mark! More to learn!



Here is the Leadership Board. The first three boats finished within 12 seconds of one another with only 5 seconds separating the first two boats. There was only 1 minute and 13 seconds separating the first seven boats. **Satori** finished 3 minutes and 46 seconds behind the winner and 50 seconds ahead of fellow Canadian **azur** after 3 hours and 44 minutes and 22 seconds of racing.




For argument sake let's say that each one of **Satori's** extra 9 tacks along the north shore cost 20 seconds and the extra tack in Hatteras Inlet cost 46 seconds. Well that is 3 minutes and 46 seconds, the difference between 1st and 13th Place! Yes, I know. **Calmxy,** who finished 2nd, put in more tacks than **Satori** but was managing the Performance Loss and Roundings better than **Satori**.

**Performance Loss**

While I am talking about Performance Loss on SOL and if you have not thought about it recently here is a helpful summary of how it works shared with me by **Dingo**: -

> *"If you are sailing at more than 16 knots it is possible to minimize your performance loss by first turning onto a course which will make your exit speed about 15 knots, and then your performance will drop to about 92.5%. That is because perf loss = exit speed / 2, hence 15/2 = 7.5 so 100-7.5 = 92.5%. Then you need to come quickly around to your new desired course before perf loss rises to 93%. As long as you are below 93% you can change course as much as you like without incurring further perf loss. Again though, this doesn't make a huge difference, just fractions of a mile."*

Here is a link to an extremely good Study on Performance Loss by Kroppyer. Have a read.

http://www.sailonline.org/static/var/sphene/sphwiki/attachment/2013/12/21/SOL_performance_loss.pdf

**Also have a read of this refresher on Mark Rounding and Server Jumps per Kroppyer from the Forum**

2016-10-26 16:30:33 - **When is my command executed?**
[ Quote ]

*Warning: I'll explain how server-jumps, commands and the client refresh rate work, but it's complicated and I cannot tell you yet how to take advantage of this knowledge (when rounding a mark for example)*

Most of you know about server-jumps. For rounding a mark, it's important to turn as early as possible, but absolutely not too early. This is made difficult by the server jumps, and client refresh rate, you rarely see your boat where it actually is. What you see is running a couple of seconds behind, in rare cases it could reach up to about 45 seconds.

So what is exactly happening. It's more than just the server-jumps and the client update rate, but let's start with them anyway:

**The server** continuously checks all boats. For every boat that has not been moved by the server for at least 10 seconds, the server updates its position. This means, your boat will move every 10-12 seconds (when it's busy, it may take 2 seconds before the server notices it hasn't moved your boat yet).

When you haven't issued a command in the last 15 minutes or so, the server may skip you once or twice, and then do one big jump to catch up. This unloads the server a bit from boats that aren't actively steered.

**Useful tip**: send a command 5-10 minutes before rounding a mark (setting a delayed command for 5-10 minutes before the mark also works). It'll make sure the server jumps for your boat are short when you reach the mark.

For the rest of this post, let's assume server jumps of 11 seconds: your boat is moved by the server every 11 seconds. I'm also assuming you have a fast internet connection.

**The client** polls the server every 15 seconds (roughly). Let's see what can happen with an example:
12:00:00 (jump) server moves your boat
12:00:00 (poll) client polls boat position, you see your boat at its current position (barely any delay!)
12:00:11 (jump)
12:00:15 (poll) your boat moves from its 12:00:00 position to its 12:00:11 position (running 4 second behind)
12:00:22 (jump)
12:00:30 (poll) your boat moves from its 12:00:11 position (19 seconds behind) to its 12:00:22 position (8 seconds behind).
12:00:33 (jump)
12:00:44 (jump)
12:00:45 (poll) your boat moves from its 12:00:22 position (23 seconds behind) to its 12:00:44 position (1 second behind). *Note: the 12:00:33 position is not shown, it looks like you made one large jump*.

A better understanding of how this works may not easily transfer into being able to steer your boat better. One **useful tip** is: when you see your boat make a large jump, you know two server jumps happened in the last 15 seconds, meaning the last jump happened less than 4 seconds ago. If you see a short jump, you know only 1 server jump happened in the last 15 seconds, meaning the last jump happened between 4 and 11 seconds ago.

Commands are executed independently from serverjumps. What does this mean? You might have seen your command execute at the start of a new server jump, or at the end. Both can happen. *A command will never execute in the middle of a serverjump*. All commands due to be executed (of every boat, in every race) are executed in one go, with 4 or 5 seconds between each go. So your command will generally be executed within 5 seconds after the time you set the command for. *BUT* your boat may still be at a position from 11 seconds ago. This means, your command will have an effect 11 seconds earlier than it was set to execute.

So now there are three things with an interval: the client polls every 15 seconds, the server moves boats every 11 seconds and turns boats every 4 or 5 seconds. This is complicated, I can't tell you yet how to take advantage of this knowledge.
Up to now I've done one of two things for markroundings:
- wait until the client shows me clear to round, then send the command.
- when I expect a double jump to happen until the next client refresh, and I only need one more jump, I count, to 10. But 11 is probably safer.

Now I've researched how commands work, I might come up with a method that results in better roundings, without the risk of missing the mark. That will be something I'll post on solfans