Adding a Race

The process is very straightforward

Name the race and choose the file. *

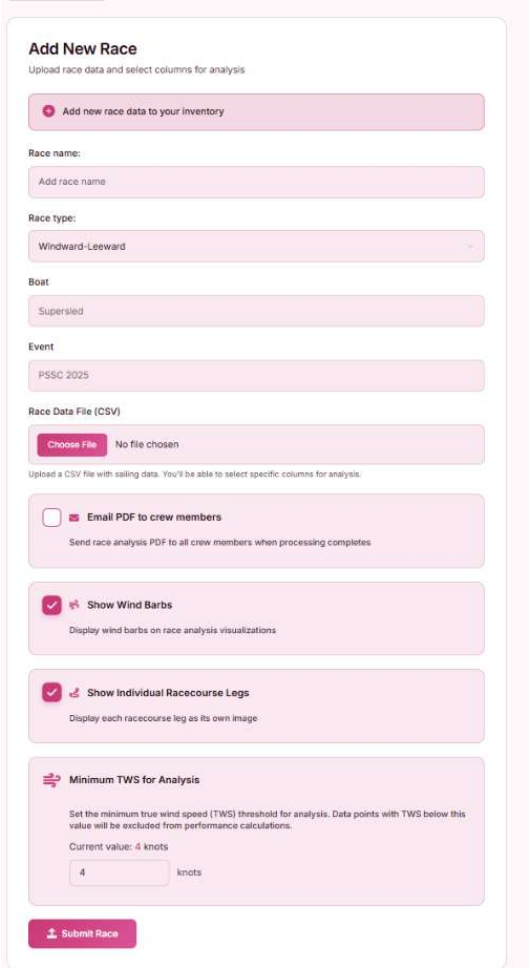
There are a couple of options you can select

Email PDF to Crew: Do you want this report sent to the entire crew as soon as it's completed?

Show Wind Barbs: Do you want wind barbs to show up on your race course. For long courses sometimes they may clutter the path.

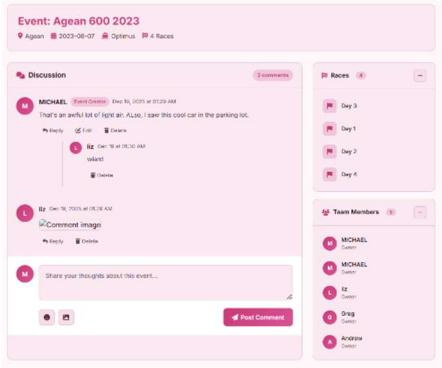
Minimum TWS for analysis: When the wind is very light, and especially if there is current, the Wind information can be quite misleading, Add to that the fact that polar data is generally not done below 4kts of TWS and you can get very unpredictable results. You can lower this number if you wish, but it may not look as good as you are thinking.

* Note on data: We do not accept "raw" expedition logs. They must be exported to be useable. The export process also gives you the opportunity to trim the length of the log to the actual race. Expedition 12.5.4 is generally considered to be the minimum version which exports a rich enough dataset. The maximum size is 16mb, which, properly trimmed, will get you a full 24 hours



Event Discussions

Sometimes comments and discussions about the race or event need to happen. We provide a place for you to do this. Anything from preliminary discussions about changes to pictured of things that need maintenance before the next event can be documented here. The entire record of the discussions regarding the event are stored with the event and available as a PDF. Especially handy if the boat captain somehow skipped this event and needs to be told about a "thing or two"



To create of edit a note, simply press the purple "comment" bubble link next to the event.

This will bring you into the event discussion thread. Say your piece, and hit "notify" which will send notices out to everyone that you need help.

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Quick Path: Adding a race & getting a Race Report

- Click the Events tile, (1)
- Click on the Event Name you want to add the race to (2)
- Click on the ADD A RACE button (3)
- Name the race, add the Extracted expedition file
- Check if you want to email it to the crew
- Click SUBMIT at the bottom and you're done

You're done.

Submitting Data to Regatta-Playbook

Regatta-Playbook relies on reasonably high quality data, representing just your race and at a moderately high frequency. (once per second) Further, since our goal is for you to be reviewing your race report within minutes, not hours, after your race, the data needs to readily accessible and manipulable by you. We do not accept "raw" NMEA2000 or NMEA0183 data because you will have just as much trouble finding your race in it as we would. We also do not accept "raw" expedition logs for pretty much the same reason, but there are simple ways to get the data out.

Data Accepted

The ideal data for us is data you are already using during the race. Our preferred format is that which Expedition creates through it's " Data Extraction" facility. This allows you to choose your race data using methods you currently use every race and can be accomplished quickly.

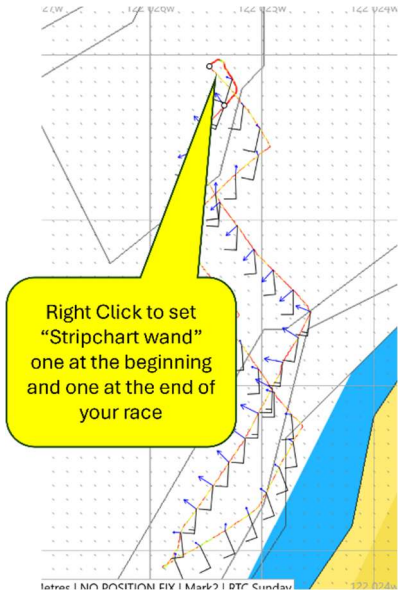
If you are using a different system, including our Android app, go to the end of this section for more information.

Exporting Your Expedition Log File

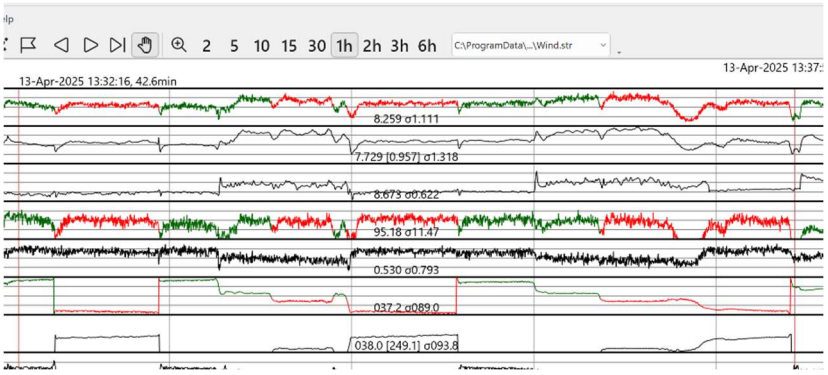
We do not accept "raw" expedition logs. They must be exported to be useable. The export process also gives you the opportunity to trim the length of the log to the actual race length. One thing to know: Due to hosting security requirements, we have a hard limit of 16mb for any file upload.

Step 0– Build the log.: Run Expedition for the entire race, If the course is easy to visualize, you can simply **set a stripchart wand near the start and finish**. Being super precise isn't that important. If it's been a day of windward lewards over the same course, it's best to use the stripchart application to find the beginning and end of the races.

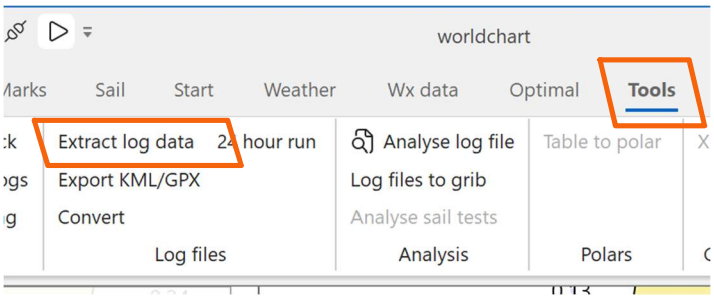
Step 1 Set wands near the race beginning and end



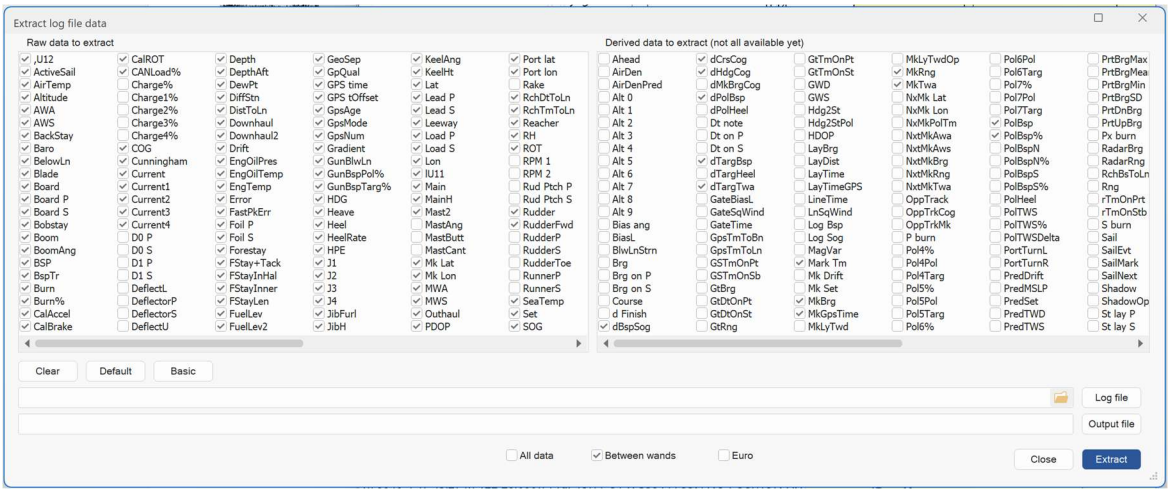
Set wands near the beginning and end of the race in stripchart. The export process will use these to time box the file. **Only have 2 wands showing**, like this:



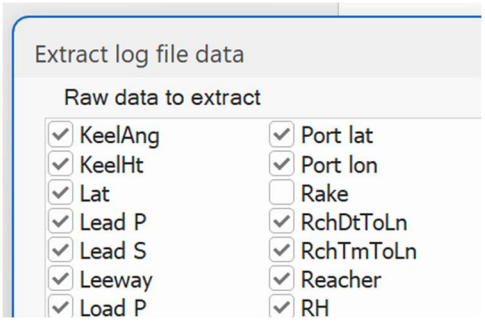
Step 2: In Expedition, select **TOOLS** -> then **EXTRACT LOG DATA**



Step 3a: Selecting Data to extract. A panel will open up, asking which data to extract from the log.



Step 3a: Selecting Raw Data to Extract:

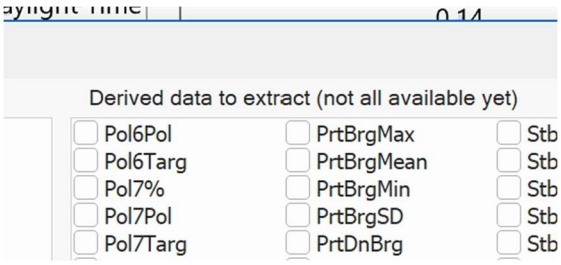


Pick as much as you like, but we do require the following:

AWA	AWS	BSP	COG	GPSTime	HDG	LAT
	LON	SOG	SOG	TWA	TWD	TWS

This is a MINIMUM list. You should also polar and target information. If you have sensor like rake, forestay, rudder, heel or mast rotation select those as well. Select as many as you like. If you have been racing for 24 hours, you may want to pare the data back to get it to 16mb, but it will work

Step 3b: Select Derived Data to extract.



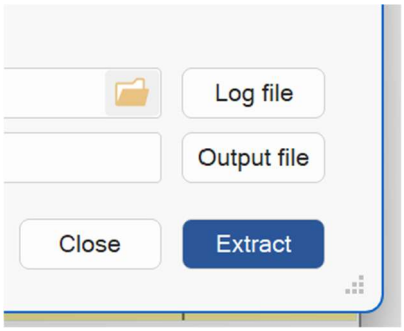
Also pick as many as you like, but there are some REQUIRED fields here as well.

dBspSog	dHdgCog	dPolBsp
dTargBsp	dTargTwa	PolBsp
PolBsp%	TargBsp	TargTwa
TargBsp%	VMG	VMG%

This is also a MINIMUM list. If you have other polar files such as Heel polars loaded, include that data as well.

Step 3c Select BETWEEN WANDS at the bottom of the panel so we only get the race data.

Step 3d Select the log file you want extract.



It's generally the current expedition log file and it must be the log file that is up in stripchart if you want the wands to work out.

Step 3e: Select **an output file** name.

Step 3f: Select EXTRACT If you skip this step, your output file will only have header row

Does the file really have to be from Expedition? No, but we expect the same column names as Expedition uses.

Data Requirements

We are looking for a comma Separated Values (.CSV) file type that meets the following general requirements:

- Each record represents all data at a particular timestamp
- The record frequency should be approximately 60 records per second.
- The file should begin at approximately the beginning of the race and end at about the end
- The position of the data in the record does not matter, but the LABELS DO Matter
- The following MINIMUM data MUST be in the file:
  - Time BSP AWA AWS HDG Lat Lon COG SOG
- More data is better, but this is the minimum. To analyze boathandling better, you need:
  - HEEL, RUDDER

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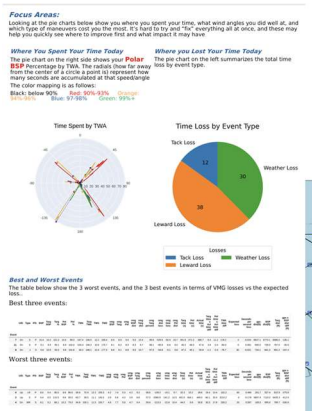
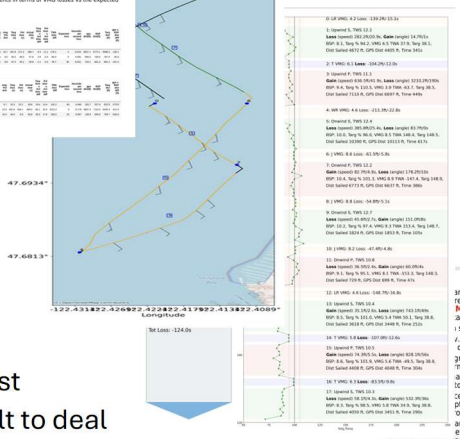
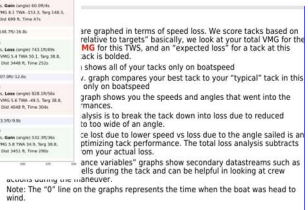
The Race Report

The Race Report is the post race tool to help debrief after a race. The goal of the Race Report is to help you get to those “Critical few” things to address quickly using facts and data, instead of just “it felt” analysis. The goal is to use it, take the lessons learned and use them tomorrow. Here’s what’s in it:

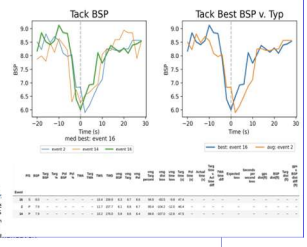
- **Focus Areas**
- **Course Performance**
- **Race Recap**
- **Tack Comparisons**
- **Jibe Comparisons**
- **Rounding Comparisons**
- **Instrument QA**
- **Leg Details**

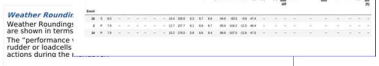


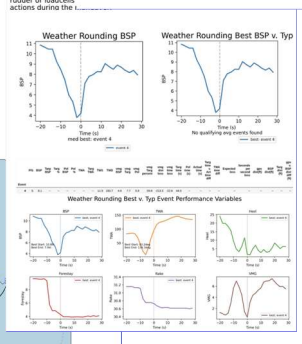


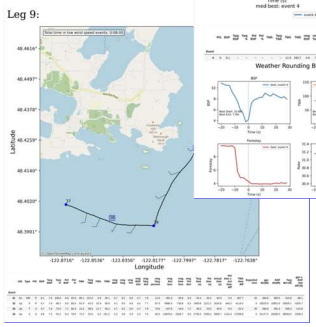


A note on how we process your data: Our focus is on team performance. This is not a perfect process. This is an automated system that tries to figure what happening by just looking at the data. Some conditions are difficult to deal with, and we do our best but ultimately recognize that in those conditions the data is not informative and is may be a hinderance to your performance. We don't know your actual racecourse, so we make it up from the data. This means that the recap you see is not always perfect. While the numbers we give you are quite reliable, sometimes the data sees things as significant that are not. Most of these events may be interesting to the navigator but they are not actionable by the team. Our focus is on team performance, not navigational efficiency so we by and large ignore these events. Combine that with some distracted driving, a huge duck or a penalty turn and sometimes we create events such as roundings that "big picture" aren't really mark roundings. Here are some of our list of event triggers and reasons we may ignore them:









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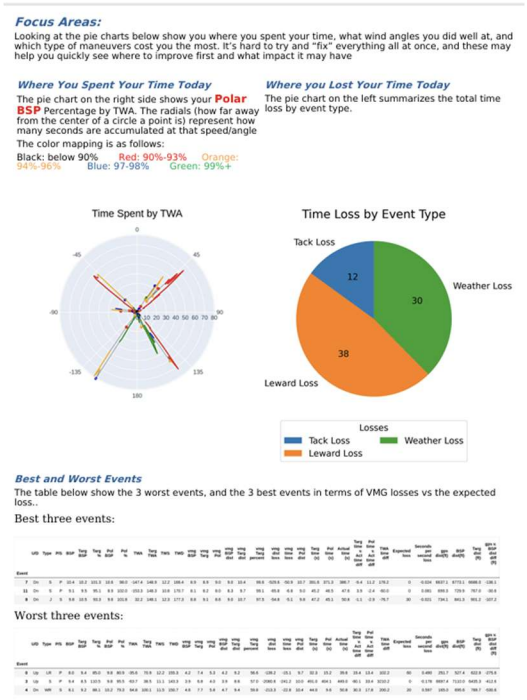
Section 1: Focus Areas

The left chart shows you where you spent your time today, colored by polar BSP performance. Were you slow on stbd today upwind? This sums it up for you.

The right chart shows you where you lost your time today by the type of maneuver. In this case, the leeward roundings need some attention.

Finally, the “best and worst” events tables show what was working well, and what wasn’t.



Section 2: Course Performance

Your race tracks are shown along with each event number and where it occurred in the race. If you are beating or VMG running, the track is colored based on your TARGET BSP%. If you are navigating to a mark, we switch to using POLAR BSP% The tracks are colored as follows:

Black: below 90%

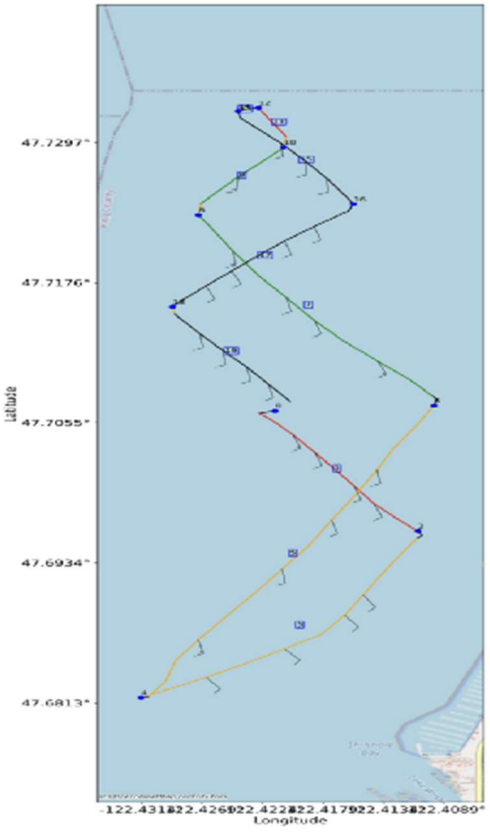
Red: 90%-93%

Orange: 94% - 96%

Blue: 97-98%

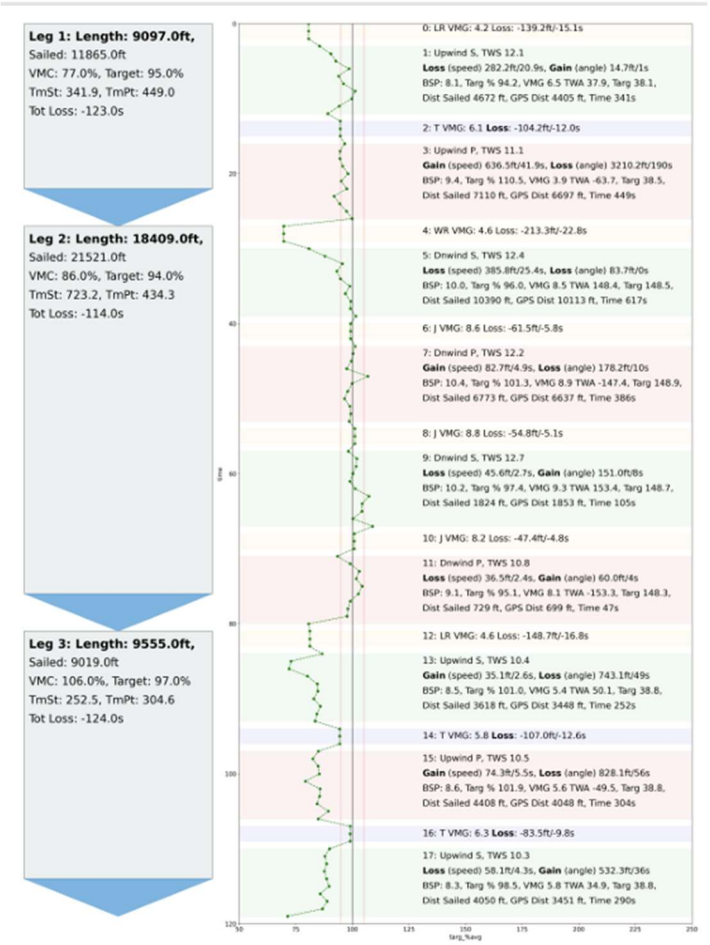
Green: 99%+

If selected, wind barbs are shown along the course. This guide is a useful reference when looking at events to help you remember where on the course you were during a specific event.



Section 3: The Race Recap

The Race Recap is our way of showing you your total race performance in a simple to understand way. **Everything is measured against a goal (the black vertical line) and you are either ahead of that goal (right of the line) or behind it (left of the line)** In Race Recap, races are broken down into events i.e. tacks, jibes, roundings, straight lines and each event is measured against the expected results for your boat. Each event type is a different color. On the left side, you will see a grey vertical strip showing statistics for the individual legs The straight black vertical line represents your 100% performance. The thin red lines are 95% and 105% performance respectively.



Special terms we use in Race Recap

We have added some data elements to help you in your analysis. These Include: **Event number and type:** The event number correlates to the number on the course graphic. Upwind or Downwind is pretty obvious, Next are the various "types" that indicate you were doing. T= Tacks (light purple background) J= Jibes (yellow background).(also spelled GYBES for you proper English speakers) S= Straight lines (red is port, green is starboard) WR*= Weather Roundings (light yellow) LR*=Leeward Roundings The final field in this group is what board you are on P(green background) or S=Starboard (red background).

Loss/Gain (Speed): & Loss/Gain (Angle): These 2 elements are found only in straight line events and show where the losses or gains are relative to your target speed and angle. Loss (Speed) is the absolute speed difference between target and actual speed translated into seconds and distance (ft/M). Loss (angle) is the difference between your target angle and your TWA, also translated into seconds as well as distance(Ft/M). This allows you to investigate where tradeoffs might be advantageous. The values are built "per second" and the translation uses your target speed as a part of the conversion. Negative numbers are losses. Expected Time: Expected time is found in all non straight line events and is your benchmark loss in seconds for each different maneuver type at a given windspeed. If your time loss in the maneuver is higher than this value, it is considered a loss.

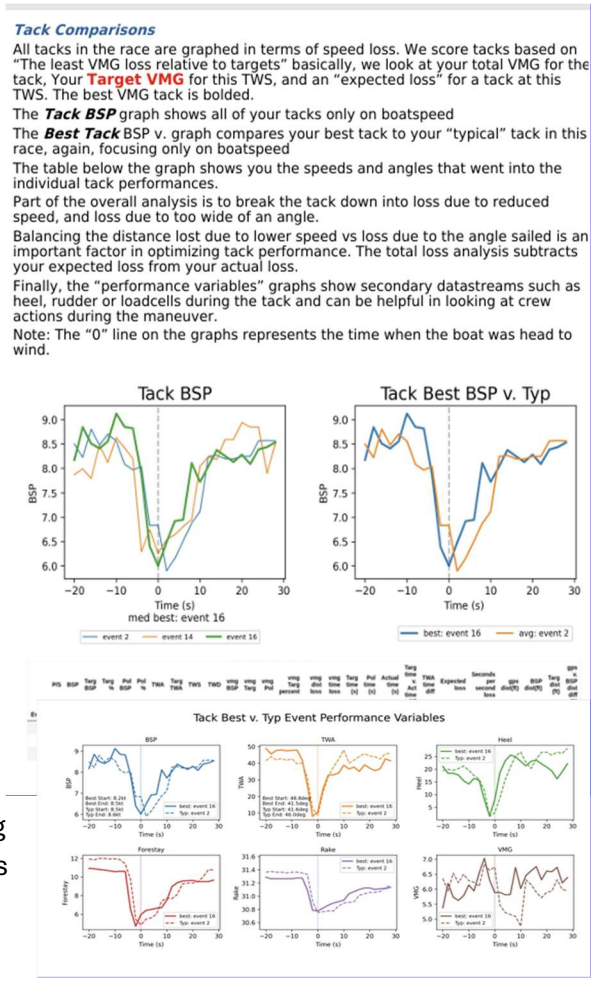
Dist Sailed and GPS Dist: GPS Distance is the "as the crow flies" distance between the beginning and eld of the straight line event. Distnce Sailed is BSP translated into distance for the duration of that event. The difference between these two may indicate extra distance sailed or the influences of current on your speed. *Note: we determine that a rounding has occurred when the boat passes through 90 degrees and then proceeds to go upwind or downwind. There are occasions when you may do this, such as an extreme wind shift, overstanding a mark or even a bad takedown. We can't predict every abnormal situation you get yourself into, so when you see these, take note that something happened and then ignore the rounding

Tack Losses Explained

We measure your tack loss using 3 different types of measures: the primary measure is using lost VMG. We essentially use your TARGET VMG and compare it to your ACTUAL VMG for the entire tack. If you normally sail below your target VMG, that loss will also included in your tack loss. It is expressed as both distance and time for your convenience. The second measure looks specifically at your BSP and TWA during the tack, and breaks down how much real distance you lost because of reduced boatspeed and how much distance you lost to leeward due to varying from your target TWA. These 2 components will not magically add up to the VMG loss as they are not VMG factored numbers, but that's not their job. What they can help you with is in understanding the tradeoffs between accelerating to your target speed vs the penalty for being wider than your target angle. You can look at the different tacks you executed, and look to see where your tradeoffs were for the best VMG.

Section 4: Maneuver Comparisons

All tacks in the race are graphed in terms of speed loss. We score tacks based on "The least VMG loss relative to targets" basically, we look at your total VMG for the tack, Your Target VMG for this TWS, and an "expected loss" for a tack at this TWS. The best VMG tack is bolded. The Tack BSP graph shows all of your tacks only on boatspeed The Best Tack BSP v. graph compares your best tack to your "typical" tack in this race, again, focusing only on boatspeed The table below the graph shows you the speeds and angles that went into the individual tack performances. Part of the overall analysis is to break the tack down into loss due to reduced speed, and loss due to too wide of an angle. Balancing the distance lost due to lower speed vs loss due to the angle sailed is an important factor in optimizing tack performance. The total loss analysis subtracts your expected loss from your actual loss. Finally, the "performance variables" graphs show secondary datastreams such as heel, rudder or loadcells during the tack and can be helpful in looking at crew actions during the maneuver. Note: The "0" line on the graphs represents the time when the boat was head to wind



Same comparisons are there for jibes, roundings and straights as well.

Section 6: Instrument QA

Everything we do is based on the instruments recording what actually happened. The data quality section helps you understand the overall level of confidence you should have in your data. It helps in understanding your real wind speeds and angles vs those reported, and what changes might be warranted to make them better in the future. The first tables looks at straight line data just prior and just after the tack events. This is typically around 15 seconds prior to the tack and 30 seconds after the tack and depends on your performance settings. The data is sorted by wind speed. This base data can be used to evaluate TWA correction tables, Wand offsets or compass issues.

The rounding table below presents your rounding data only The first table is an average of all qualifying events, while the table below it shows each event individually. Roundings are a good opportunity to look for wind speed changes due to upwash or incorrect TWA corrections.

Instrument Data Quality Assessment

The following tables look at straight line data just prior and just after the tack events. This is typically around 20 seconds prior to the tack and 40 seconds after the tack and depends on your performance settings. The data is sorted by wind speed. This base data can be used to evaluate TWA correction tables, Wand offsets or compass issues.

Upwind Data

The tables below presents your upwind data only The first table is an average of all qualifying tacks, while the table below it shows each tack individually. Tacks present a good opportunity to evaluate your masthead unit offset (MWA), TWA BSP and HDG calibrations

	TWA In	TWA Out	dHdgCog In	dHdgCog Out
Port	-53.8	40.0	-9.1	1.3
Starboard	45.5	-43.2	-0.6	-9.6

	Event # in	Event # out	TWS In	TWS Out	TWA In	TWA Out	TWA Diff	MWA In	MWA Out	HDG In	HDG Out	HDG Tack Angle	dHdgCog In	dHdgCog Out	TWA Tack Angle	Angle Difference	TWD In	TWD Out	TWD Shift
0	1	3	7.8	10.9	52.2	-50.8	103.0	22.5	24.9	93.1	162.0	68.9	-4.0	-10.0	103.0	-34.1	140.3	113.2	27.1
1	13	15	9.2	10.7	-59.1	41.2	100.3	25.4	19.4	164.7	82.8	82.0	-11.0	1.3	100.3	-18.4	106.9	119.2	-12.3
2	11	13	11.2	10.3	47.7	-42.7	90.3	22.4	23.3	79.8	154.5	74.7	3.3	-6.2	90.3	-15.6	122.3	112.2	10.1
3	15	17	11.3	12.9	39.2	-41.6	80.8	17.0	20.1	90.8	157.8	67.0	-0.7	-9.8	80.8	-13.8	125.8	117.7	8.1
4	23	25	11.5	13.9	-48.4	38.7	87.2	21.2	21.0	171.1	103.7	67.3	-7.2	1.3	87.2	-19.8	124.8	137.1	-12.3
5	25	27	12.7	10.9	42.9	-37.8	80.7	23.5	20.0	101.7	167.9	66.2	-0.9	-12.6	80.7	-14.6	139.5	135.6	3.9

Downwind Data

The tables below presents your downwind data only The first table is an average of all qualifying jibes, while the table below it shows each jibe individually. Jibes present a good opportunity to evaluate your TWA, BSP and HDG calibrations

	TWA In	TWA Out	dHdgCog In	dHdgCog Out
Port	-153.5	153.4	6.2	-79.6
Starboard	140.7	-145.5	-321.3	8.1

	Event # in	Event # out	TWS In	TWS Out	TWA In	TWA Out	TWA Diff	HDG In	HDG Out	HDG Jibe Angle	dHdgCog In	dHdgCog Out	TWA Jibe Angle	Angle Difference	TWD In	TWD Out	TWD Shift
0	17	19	10.6	10.1	140.7	-145.5	286.1	30.4	275.2	115.2	-321.3	8.1	73.9	41.3	146.5	131.5	15.0
1	19	21	13.8	17.6	-152.3	151.6	303.8	274.2	179.7	94.5	6.1	-167.6	56.2	38.3	125.6	152.1	-26.5
2	7	9	14.5	11.0	-154.7	155.1	309.8	287.0	347.7	60.7	6.2	8.3	50.2	10.5	134.7	147.6	-12.9

Rounding Data

The tables below presents your rounding data only The first table is an average of all qualifying events, while the table below it shows each event individually. Roundings are a good opportunity to look for wind speed changes due to upwash or incorrect TWA corrections.

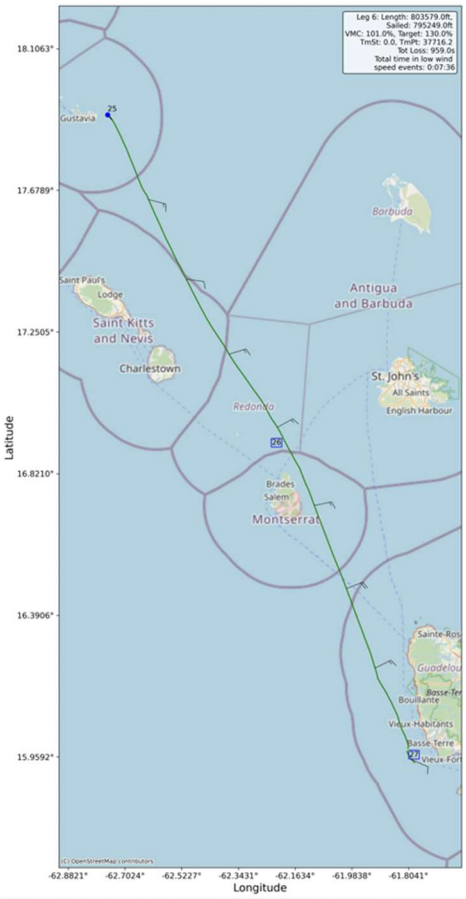
	TWS In	TWS Out	dHdgCog In	dHdgCog Out
Port	9.8	10.3	-7.5	-42.6
Starboard	11.5	10.6	-4.1	0.6

	Event # in	Event # out	TWS In	TWS Out	Type	dHdgCog In	dHdgCog Out	TWD In	TWD Out	TWD Shift	BSP In	SOG In	dBspSog In	BSP Out	SOG Out	DBspSog Out
4	21	23	9.2	10.3	LR	10.7	0.2	133.4	126.5	6.9	6.6	6.5	-0.1	7.8	6.7	-1.1
1	0	1	9.8	9.9	LR	-14.8	-42.8	113.8	130.2	-16.4	5.4	5.2	-0.2	8.2	8.7	0.5
0	3	5	10.4	10.3	WR	-25.6	-85.5	111.9	135.6	-23.7	8.2	7.5	-0.7	8.7	8.8	0.1
2	5	7	11.9	11.6	LR	2.4	44.1	146.6	138.0	8.6	8.9	9.1	0.2	7.2	7.5	0.3
3	9	11	12.7	10.2	LR	0.1	0.5	149.5	118.5	31.0	9.3	9.6	0.3	6.8	6.5	-0.3

Section 7: Individual leg data

Sometimes getting a closer look at the individual legs can help understand specific issues. This is especially true when you have a multi lap course and the tracks all overlay. This view breaks down each leg and the performance of each event within it. Each leg contains a summary table for that leg and leg level data within the graphic

Leg 6:



Event	U/D	Type	P/S	BSP	Targ BSP	Targ %	Pol BSP	Pol %	TWA	Targ TWA	TWS	TWD	vmg BSP	vmg Targ	vmg Pol	vmg BSP dist	vmg Targ percent	vmg dist loss	vmg time loss	Targ time (s)	Pol time (s)	Actual time (s)	TWA time diff	Expected loss	gps dist(ft)	BSP dist(ft)	Targ dist (ft)
25	Up	WR	P	9.8	6.3	154.6	7.6	129.4	-77.2	55.3	8.1	77.0	10.0	19.5	8.1	50.3	51.3	1672.7	52.4	485.1	578.3	453.3	3289.0	20	7383.6	7494.0	4847.5
26	Up	S	P	12.7	10.8	117.7	12.3	103.1	-90.4	85.0	12.1	79.3	15.7	35.9	15.1	79.0	43.8	180630.4	3338.2	37582.8	37026.0	36488.9	359410.2	0	768582.1	780845.8	663223.0
27	Up	S	P	9.4	8.0	117.5	7.5	125.7	-47.6	51.6	10.1	108.2	31.1	25.2	24.3	156.5	123.3	28344.8	702.8	1263.6	1523.8	1227.2	-958.1	0	19283.7	19517.9	16609.1

ANALYSIS

The analysis tool lets you review your performance across races and events. Here you may find trends and best practices. Analysis has a number of tabs that ley you navigate through the various functions. These areas include:

- Maneuver Analysis
  - Tacks
  - Jibes
  - Upwind Straights
  - Downwind Straights
  - Leward Roundings
  - Weather Roundings
- Polar performance Analysis
- The Library

Maneuver Analysis

All of the event analysis functions follow a similar pattern, so we will just focus on Tack analysis here.

The Green ovals represent events which have a maneuver at this TWS. Clicking them turns on/off those events. You can do it for single events, entire races, entire regattas or every race you have ever done.

The TWS control lets you change the windspeed at which you are looking at these maneuvers

Highlighting on any particular event bring up some details about it. Right clicking on it brings up the **Maneuver Event Viewer**