

The Wind

INTRODUCTION

Wind for the VO -70 and also this One Design 65 is BWind 2.5. This is a new version of BWind, not available in any other boat yet. What's new in the 2.5 version of BWind are wind gusts, wind drift and wind variation. Gusts will provide your boat with an extra boost at times. Variation will increase or decrease both wind speed and wind angle at times and wind drift makes for a gradual drift in wind direction.

Real life wind isn't a constant push. Instead it varies a lot. It varies every hour, every minute, every second, in both speed and direction. When you sail in real life you might think that you don't really notice this, but in fact you do! Look at a luffing sail for instance. Ask yourself if it would behave so violently without all these variations. Wouldn't a flag hang straight, more or less like on the moon if winds were constant?

So there you have the main ingredient of BWind 2.5: variations in speed, direction and even added gusts. It's as real as it gets.

Now back to our real life sail boat. When we're sailing we perceive the wind as pretty much linear. We set our sails accordingly but every few seconds we trim the sails just a bit to get them that more perfect, thus getting the max out of our boat.

In second life this experience should be similar. You never see the average apparent wind angle, you see variations. A sailor will have to average out these variations and set the sails somewhere in the middle, adjusting every 2 seconds to get them that much more perfect. This is the experience BWind 2.5 provides on the VO-70. A new wind, a new game... with a good footing in real life wind behavior.

The iPad Wind Setter

Getting it

There's a couple of ways to acquire a wind setter. The best part is, they are all free. Owners of the Volvo Open 70 have a wind setter provided in the box that the product comes in. If you have a One Design 65, you can make the boat give you the wind setter. Just stand on the boat and type "give ipad" in local chat. The third way to get yourself a free wind setter is to go to The Mesh Shop in-world and pick one up. The shop is located in Tschotcke. The wind setter is on top of one of the cubical displays.

Using it

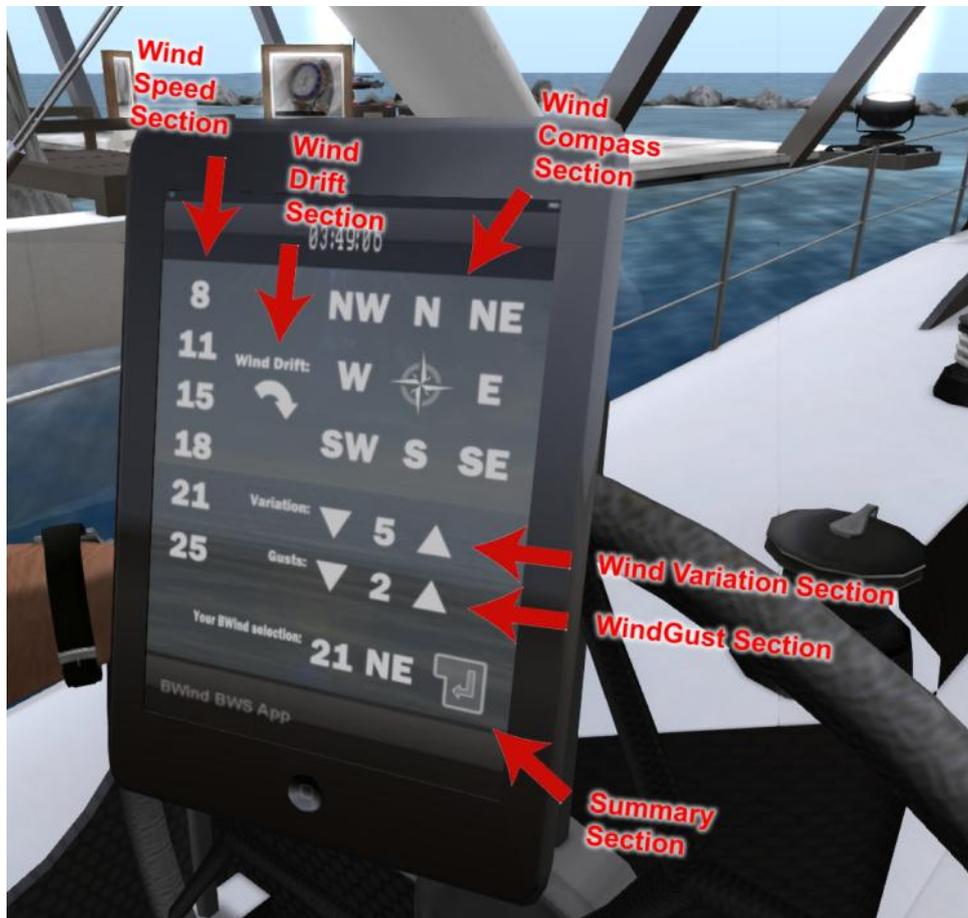
The wind setter is designed as an app on an iPad. You wear the iPad as an accessory. Don't rez the wind setter on the ground, just double click it in your inventory to wear it in your left hand. When you're wearing the wind setter and you want to use it, click on the back of it. Your avatar will assume a convenient pose, giving you a good overview of the screen. Normally a wind setter would give you a menu with choices. The iPad you operate by clicking directly on the screen. So from the pose you are in after clicking the iPad, zoom your camera towards the screen, or go to mouselook. Either way works for operating the iPad.

The different sections

The screen of the iPad app is divided up into a few different sections. They are:

- **Wind speed**
In this section you can chose a wind speed of 8, 11, 15, 18, 21 or 25 knots.
- **Wind compass**
Here you set the starting direction of the wind.
- **Wind drift**
By repeatedly clicking on the icon here you can set the wind to drift clockwise or counter clockwise, each with 2 different speed options.
- **Variation**
In this section you set how much the wind varies from second to second and minute to minute, all by setting just one number.
- **Gusts**
Set how much speed wind gusts will have.
- **A summary section**
A summary of your chosen wind speed and direction and a key to enter the wind into effect.

The picture below shows the screen of the iPad, with the different sections highlighted in red. As stated before, you can click directly on the screen to enter any choice you want.



Selecting your wind choice

The two basic variables any race director would set for a race are wind speed and wind direction. In addition to speed and direction you can customize your wind a bit more. Do this by setting drift, variation and gusts. The next section explains how to set them, the section after that explains how they modify the wind.

Click directly on any number in the wind speed section to set the wind speed. The number in the summary section will change to reflect your choice. The default Wind speed displayed in the summary is 15 Knots.

To set the wind direction, click directly on one of the letters in the wind compass section. Similar to wind speed, the summary section will change to reflect your choice. The default setting here is E for east wind.

To set wind drift, click on the X, just below where it says “wind drift:”. There are 5 directions of drift you can choose from. Choose one by repeatedly clicking on the X or the arrows that appear once you

click it. The choices are: one arrow clockwise, two arrows clockwise, one arrow counter clockwise, two arrows counter clockwise and none. None is the default setting.

Wind variation and gusts you set by clicking on the up or down arrows next to where it says “variation” and “gusts”. Clicking the up arrow will make the number next to the arrow on the screen go up, clicking the down arrow does the opposite thing. You can set a variation anywhere between 0 and 9. The same goes for gusts. The default setting of both is 0.

When you have set all the settings you want to set on your screen, it’s time to enter the wind so that sailors can set their boats to accept it and lock it (by typing racing). To enter the wind, look at the summary section of the iPad and click on the big “enter” key. Your iPad will now start broadcasting the wind you’ve chosen.

If by any misfortune you have made a wrong choice and set the wind incorrectly, just type “stop” in local chat and the wind setter will go back to its default settings and stop broadcasting.

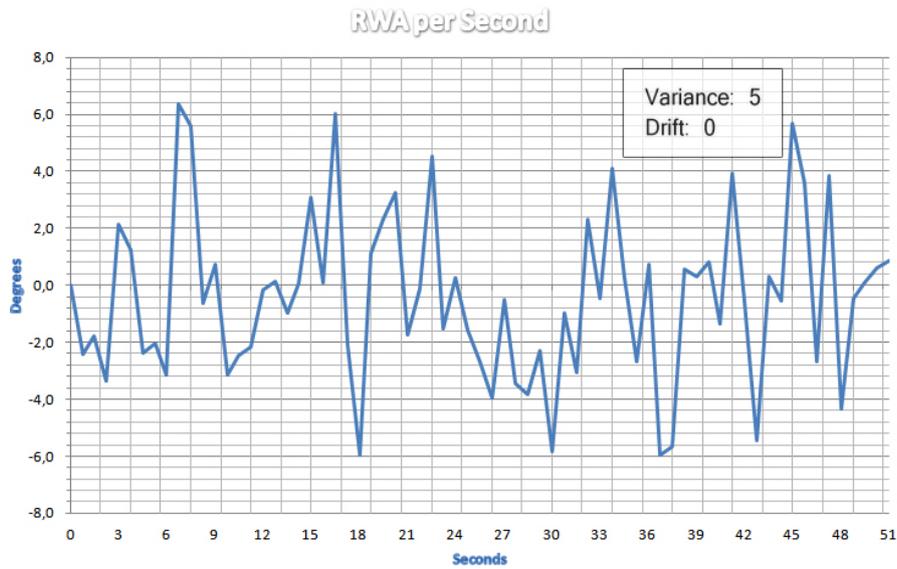
Drift, variation and gusts

Setting gusts, variations and a wind drift is pretty easy. Knowing what they do exact is another thing. This section will explain in detail what each setting does to the wind.

Gusts are the easiest thing to get to grips with. Basically a wind gust is a sudden change in wind speed. A wind gust will last anywhere between one and two seconds. In this period of time the wind speed will increase, thus giving your boat a speed boost. A setting of 9 on the wind setter will give you wind gusts ranging from 1 to 9 knots.

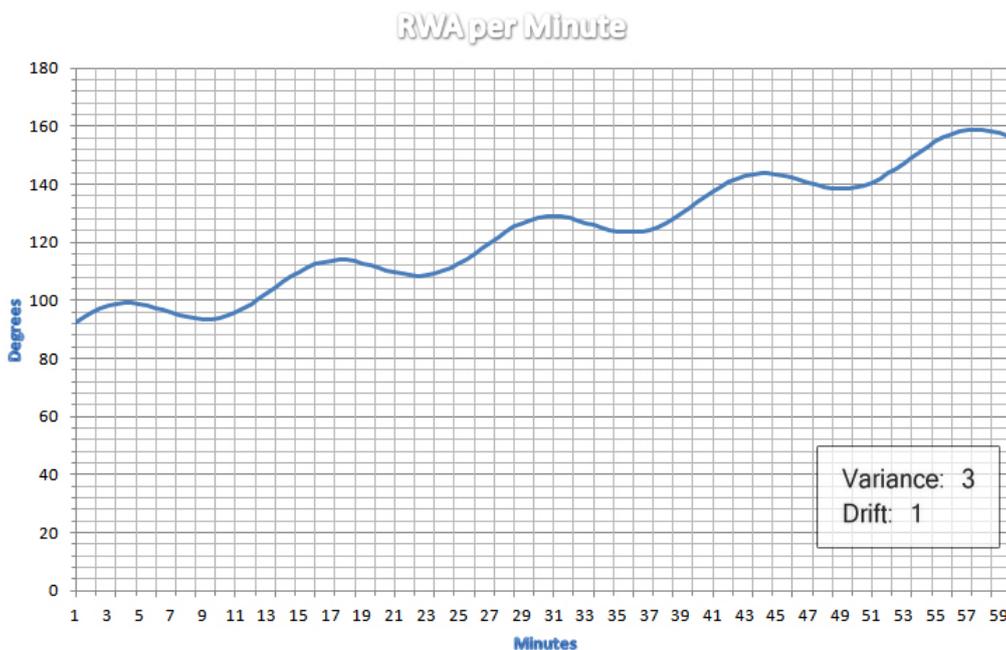
Drift sounds complicated but in fact it’s not. Wind drift means that the direction of the wind will shift gradually over time. That’s all there is to it. You can set the direction of the wind to change clockwise or counter clockwise and you can choose to set the wind to drift a little, a lot or not at all. A setting of two arrows counter clockwise on the wind setter will cause the wind to drift -125 degrees over an hour. Note that this can make sailing very interesting. Sailors will have to calculate this change in wind into the tacks they will have to make to get from start to finish.

Variation is perhaps the most complicated thing to set. Setting variation will do two things to your wind. Firstly it will cause the wind direction to change up and down per second. As explained in the wind section of this manual, a normal real life wind displays this kind of behavior. Sailors will have to find an average in this variation and trim their sails to it to sail effectively. A variation of 5 will cause the wind to change by a maximum of 6 degrees up or down per second, as shown in the next picture.

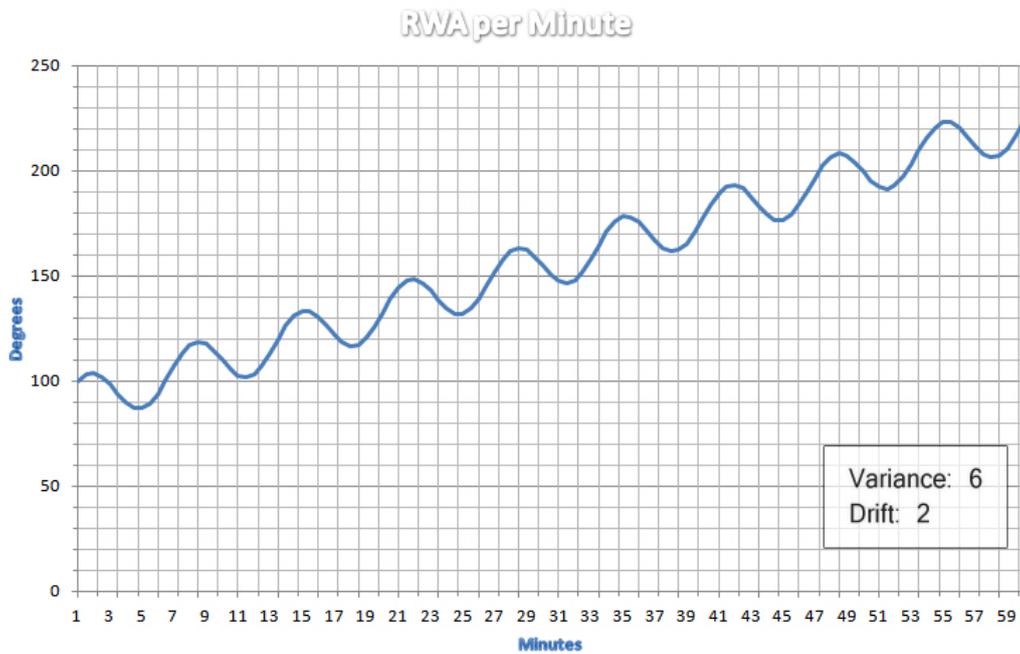


Note that 5 is an average variation found at sea. When you're in a city, or at sea but say in a thunder storm you could encounter variations up to 9. As a race director, know that when you set a variation above 6 on the wind setter, sailors will have a very difficult time trimming their sails effectively. A variation of 9 means it will be almost impossible to find an average trim for your boat. Anything under 5 is relatively easy to sail in.

But variation does more than setting the per-second behavior of the wind. Variation also sets the per-hour behavior of the wind. Normal real life winds don't drift in a straight line. Overall it might seem like they do but when you look at it in detail you'll find gradual variations here too. Setting the variation influences this behavior as well. The easiest way to see how is to look at the two graphs below. The first graph shows a wind variation of 3, the second graph shows a variation of 6.



As you can see in the chart, a variation of 3 causes the wind direction to change by about 10 degrees over a period of 12 minutes. In the next chart the variation is doubled and so is the drift.



A variation of 6 on the wind setter will cause the wind direction to gradually change with about 20 degrees over a period of 6 minutes. Note that in these graphs the gradual trend up is caused by setting a wind drift of one arrow clockwise in the first picture and two arrows clockwise in the second.

For long races sailors will have to incorporate the wind drift into their navigation. When you look at the wind graphs shown above however you will note that for races that last about 15 minutes the wind variation can also be a deciding factor for a sailor to set any given course.

Experiment!

This manual and the pictures will give you some insight into the winds you can set for your races, but to get a real feel of what these winds do you might want to set yourself a race wind and sail in it. Trying it yourself is really the only way to know what calculations a sailor must make when navigating in a wind that isn't linear. It's also the only way to find out how sailors will have to trim their sails and keep trimming them during a course of a race.