

TACK OPTIMIZER ("TO") - USER MANUAL

TO is specifically designed for sailors to accurately calculate the best/fastest course to reach a target point which may be a buoy in a race, or a destination in a short/medium passage. TO will geometrically calculate the fastest Tack between a tight reach, shorter and slower, and a wider angle to the wind, which is longer but faster. Simply maximizing the VMG can prove impractical because it involves much work and time, and is absolutely insufficient. To be able to accomplish this task TO will need to know the polar coordinates of the boat for all the planned sail settings.

First Step - Enter the polar coordinates

In the MENU chose the option "boat parameters" (also known as polar coordinates).

In the appearing page first enter the speed of the wind. Then select the check box if the boat is symmetric (same conditions on the port and starboard sides). Then TO will prompt you to enter the boat speed at all angles to the real wind from 0 to 360 degrees or 0 to 180 if symmetric, in steps of 10 degrees. Once completed you will be asked to name the file where you wish to save the entered data.

You can make this operation for any number of different sail settings which you plan to use when sailing. In the Menu option, "file manager" you will notice the different recorded files which you may delete or send to another device.

Second Step - Determine the best course

In the MENU chose the option "best course". Here you will first chose which file (sail setting) out of the saved files that you wish to use.

Then you must enter the speed and the direction of the real wind.

Then you have to indicate to TO where you wish to go. You have two possible ways of doing this. The first option is to prepare a small bank of WPs using the button "Enter WP", then select one. In this case TO will immediately calculate the bearing and distance, providing you have satellite coverage. This option is particularly interesting when in a regatta, in which case you can prepare a list of all the coordinates of all the race buoys before the start so once "on the field" you simply select the next buoy. The second option is to manually enter the bearing and the distance. Now the "GO" button will change from **red** to **green** with a slight tap.

Third step

Tapping GO will automatically take you into the RUN page where you have all the calculated values and the monitor of your sailing.

First thing to note, at the bottom of the page, in **green** and **BOLD** you have the TO calculated best course. If in the first step you entered good, accurate values, you can be sure that such course is absolutely the best at which your boat will perform. This is certainly the fastest course to reach your target.

In the bottom section of the Run page you have:

- (i) the total path you will run on the best course
- (ii) TTG, the time to reach the target
- (iii) the VMG and the speed you will have
- (iv) the bearing at which you will see the target
- (v) the ETA, the estimate arrival time
- (vi) and, as said above, in **green** and **BOLD** the fastest course.

In the top section of the Run page you will have a continuous monitor of your sailing and will see:

- (i) your current speed. If it is different from the speed indicated in the bottom section, there is a problem. You are out of the best course, or the sails need tuning, or something dragging the boat
- (ii) your current course. If this is different from the calculated "best course" appears in red as a indication that you are out of the fastest course.
- (iii) the straight distance to the target. This will appear in case you decide to switch from sailing to motoring

END.....

PLEASE NOTE

You may run the page "best course" at any time, and all the values in "Run" page and particularly the "Best Course" will be updated accordingly. For example: at the start you run the page "Best Course" and you get the best course and relative values. Then, after a while, for some reason, i.e. THE WIND CHANGES, or you need to get out from the set bearing, or change sails (then the sail setting file), the previous values are no longer useful, you return to the page "Best Course", enter the new values and/or new file and click GO. TO, with your new location, will calculate the new appropriate values. So now in the "Run" page you will have the new, updated values which gives you the best course in this new situation. All that in just a few seconds!

Win your race !

Get to the target in time for the dinner!

ENJOY Tack Optimizer!

Your friend "Sailor friend"