NAUTEEK TACTICAL ELECTRONICS

SC200 : Quick start guide

I- Basic functions : Start / stop / charging the SC200

I-1/ To switch on your SC200, press :

The Menu screen appears once the welcome screen and the battery level screen have diappeared.

GPS time only available after the SC200 has synchronized If the SC200 displays 00:00, it means that it has not yet found enough satellites

% battery level

Leave the system in a vertical position with a clear view of the sky.

The SC200 will not function indoors and badly in an urban environment given the poor GPS signals reception quality.

The SC200 usually starts in under 5 min. The first time it starts might take longer as it will not have a correct last position in memory.

I-2/ To switch off your SC200, press for 3 sec:

Wait for the 3 beeps until the shutdown screen. Do not release the button before that.

This procedure avoids accidental shutdowns.

I-3/ Charging the battery:

When the battery has reached a critical level, open the connector's weather cap and plug the mains charger. Make sure to connect the charger the right way round by aligning the white arrows on the connectors. The connectors will « click » once they have correctly mated.

The screen will automatically change to charging mode.

The autonomy of the system is about 30h after 2h30 of charging.

Note: the system is not usable while charging.

Once the system is charged, pull out the external ring of the connector to disconnect the charger and close carefully the connector's weather cap.

II- Main functionalities: Menu navigation – Rapid menu presentation – Displaying an info / changing display type.

II-1/ Menu navigation:
To go downwards in the menu, press :

To go upwards in the menu, press :

To validate your choice, press :

II-2/ Menu screen presentation:

MULTI SCREEN: Gives access to the infos coming from the GPS: speed, course, ...

RACE SCREEN: Gives access to the automatic display of screen for each leg of the course without the need to press a button (you only need to launch the timer and to set correctly the mean wind direction to allows your device to assume on which tack you are sailing)

RACE SETTINGS : Allows to set the mean wind direction to calculate correctly the tactical compass and VMG infos. This can be done via a procedure or by setting directly the wind direction and the tack angle. Also allows to create a windward mark for VTD and layline info. Use the benefit of the display of the distance to the starting line info in boat length.

START LINE: Allows to set the position of the committee boat and the end of the line mark in order to calculate the distance to the starting line and the favored end of the line according to the mean wind direction set

TIMER SETTINGS: Allows to set the default timer value

RECORD SETTINGS : Allows to manually start a recording, and to choose the frequency of the recording between 1 record per second up to 1 record per 10 seconds in order to increase the record capacity. Also allows to delete the SC200 memory. Access to the percentage of used memory.

DEVICE SETTINGS : Allows to activate the backlight illumination, to set the upper limit of the speed histogram, the magnetic declination correction, the COG and separately the SOG damping, the contrast level, and the time zone. Switch on the NMEA output for live tracking.

STATISTICS : Displays the total loch, daily loch, total time of use, daily time of use, max speed, max speed averaged over 10s, and allows the reset the daily statistics.

ROUTES/ WAYPOINTS : allows you to add, create, modify waypoints and routes for coastal races. Allows you to launch a GOTO WPT, or to launch a ROUTE and to display the following info : VELOCITY TO WPT, COURSE TO WPT, CROSS COURSE , DIR TO WPT, DIST TO WPT...

Please refer to the appendices concerning waypoints and routes on SC device.

II-3/ Displaying an info in multi screen.
Select MULTI SCREEN et validate, by default you will get the SOG.
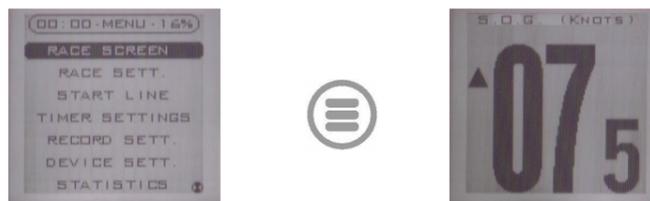
II-4/ Changing the display mode in order to display 2 infos in multi screen.

The SC200 display in MULTI SCREEN loops in the following order:

4.1/ Display of 1 info full screen : 40mm height.

4.2/ Display of 2 infos ½ - ½ : 20mm height.

4.3/ Display of 2 infos 2/3 – 1/3 : 25mm and 15mm heights.

To switch from one display mode to the next, press:

Note: if the speed is null, the COG is not displayed (---)

-->To change the info displayed in full screen mode, press :

When the screen is in ½ – ½ or 2/3 – 1/3 display mode, press : to change the info on the top display.

To change the info on the bottom display, press :

To loop backwards the info on the top display, keep pressing on:

To loop backwards the info on the bottom display, keep pressing on :

At any time, if you wish to come back to the MENU, press :

Note: The infos displayed in your MULTI SCREEN are saved so that you will come back to the same display configuration next time you go to the MULTI SCREEN.

II-5/ MULTI SCREEN info list.

The infos loop in the following order:

3.1/ Speed Over Ground (SOG), with possible damping.

3.2/ Course Over Ground (COG), with possible damping and magnetic correction.

3.3/ Race countdown Timer and chronograph.

3.4/ VMG: Upwind and downwind speed gain in knots. The race course orientation needs to be defined first in RACE SETTINGS.

3.5/ TUD: True Upwind Direction, your average upwind axis (component of true wind axis and current effect)

3.6/ Position / Infos (latitude, longitude, number of visible satellites visible and time).

3.7/ DTSL: Distance to the starting line in meters (positions of the committee boat and the pin needs to be set beforehand in the menu START LINE).

3.8/ VAR TUD: Graphical representation of the variation of the TUD.

3.9/ HISTO SOG: Rolling histogram display of the SOG for last 16 seconds. The upper speed limit can be set in RACE SETTINGS.

In Race screen, VTD upwind, VTD downwind and layline information are also available

III- A few advanced functions : Starting the timer, synchronizing it – Setting the race course orientation – Starting a recording.

III-1/ Starting the timer -Stopping the timer, Setting the timer:

In MULTI DISPLAY, even if the timer is not visible on the screen, press :

to start the timer.
To stop the timer, press:

Once the timer is running, if you press on : , **the timer will synchronize to the nearest full minute**.

e.g. You have missed the gun for a few seconds, if you press at 5'04, it will change to 5'00 and carry on counting down. A press at 55'' will re-synchronize at 1'.

To set the timer, press : as many times as necessary.

The timer value will decrement minute by minute and then loop to the default value.

III-2/ Setting the race course charcateristics:
it is necessary to set the wind direction and the tacking angle for the VMG and the tactical compass to give correct values. Without a correct wind direction, your device will not be able to work properly.

2.1/ To set the tacking angle, go to RACE SETTINGS, select TACK ANGLE and adjust the value using:

Then press: to save and go back to RACE SETTINGS.

Note : Keeping : pressed will change the value 5 by 5, a short press will change them 1 by 1.

Direct shortcut available in MULTI and RACE SCR.

- Set the average TRUE WIND DIRECTION :

Press simultaneously on ☰ and ⌃ ; fix your value, then press ↻ to validate

- Store the position of the marks of the starting line :

Press simultaneously on ☰ and ⌄ ; follow the instructions on the screen

Press ⌃ to record the committee vessel position / ⌄ the one of the end of line mark

Press ↻ to check the calculated favored end of the line

Direct shortcut available in RACE SCR only.

- Set the Direction and the distance of the windward mark :

Press simultaneously on ☰ and ↻ ; fix the values and press ↻ to validate.

- Store the position of the windward mark :

Make a long press on ⌃ to store the position of this mark when you are close.

- Store the position of the leeward mark :

Make a long press on ⌄ to store the position of this mark when you are close.

III-3/ Starting a recording:

By default the chronograph is started automatically at the end of the timer countdown. The automatic recording on timer is also set by default.

To start a recording you simply need to start the timer. In order to stop a recording, you need to stop the countdown timer/chronograph.
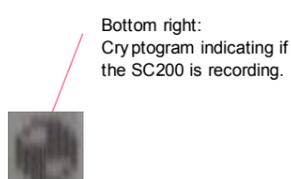
Bottom right:
Cryptogram indicating if the SC200 is recording.

IV- Infos calculated by the SC200: graphical display of TUD variations - VMG - SOG histogram – distance to the starting line.

IV-1/ Graphical display of the TUD variations:

It is supposed that the boat is sailing upwind to max beat, able to go upwind in a symmetrical manner.
From this, the true wind angle at this time is at the center of the upwind cone given by the starboard and port beating legs done during the TUD/VMG setup procedure.
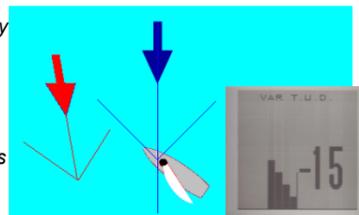Warning, the current can interfere with this setup procedure. The effect of current and wind intensity changes will also affect the VMG info.
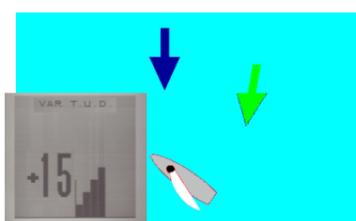
In blue, the wind set by the user at the time t.

In green and red the current wind in 2 different configurations
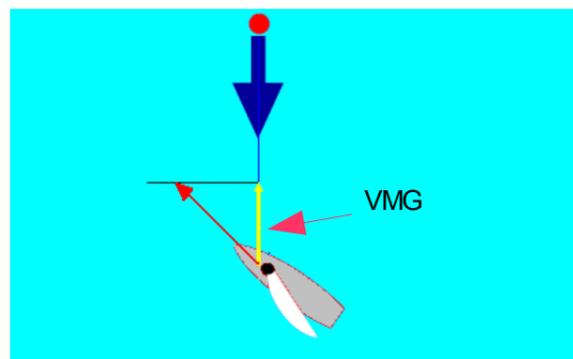
Case a   *Case b*

In the case a, the boat is sailing on starboard, the graphical display shows that your TUD has shifted 25° to the right, hence you are in a 25° lift.

In the case b, the boat is still sailing on starboard and the graphical display shows that the TUD has shifted 25° to the left, hence you are in a header

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IV-2/ VMG:

The red arrow is your speed vector and the blue arrow is the true wind direction set in the system. The yellow arrow is your VMG vector which is the projection of your speed vector over the true wind direction.

The VMG can be used upwind and downwind.

The calculation of the VMG is based on your speed. Look for the evolution of your speed and any current effects in order to interpret correctly changes in your VMG.

IV-3/ Speed (SOG) histogram:

The SOG histogram runs from the right side of the screen to the left. It displays in a graphical manner the boat speed over the last 16 seconds. This can help you work on your boat speed after tacking or gybing.

IV-4/ Distance to the starting line:

The distance to the starting line is shown as the black line on the next figure.
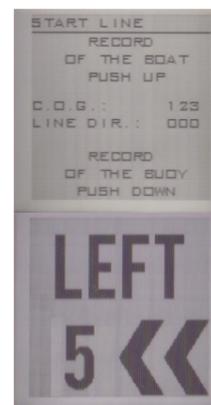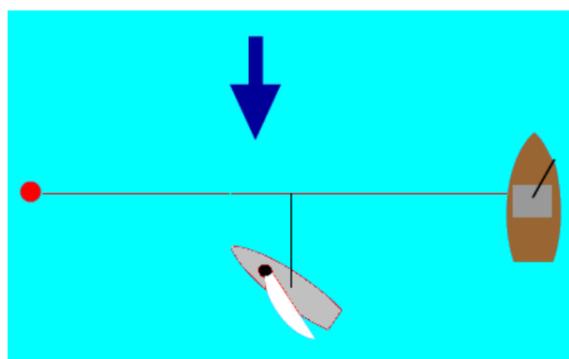
Enter the setup procedure from MENU / START LINE, then follow the instructions on the screen. At the end of the procedure, the direction of the line is displayed and is used to detect the favored end of the line : here the line bias is 5° on left side.

Go to the MULTI DISPLAY, select the START LINE info and you can now check if there are no dip on the line (particularly on long starting lines) and how far away you are from the line. This info is available in meters, in feet or in user programmable boat lengths.

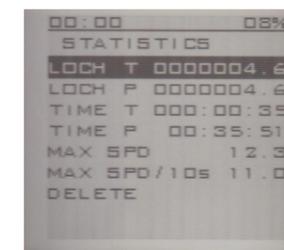**V-1/ Switching on/off the backlight:**

From the MENU, go to DEVICE SETTINGS, select BACKLIGHT to switch on or off the backlight.
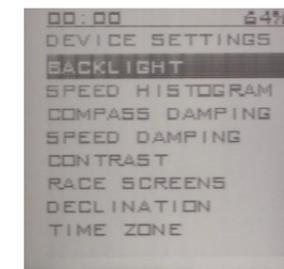
Press ↻ to go back to the MENU.

**V-2/ Checking the statistics:**

From MENU go to STATISTICS.

Select DELETE to reset the daily loch, time of use and max speeds by pressing ☰

Press ↻ to go back to the MENU.

Taking care of your SC200 :

- Keep your SC200 in a near vertical position in order for the system to work best. The antenna is placed at the top left side of the system, avoid metallic items near the antenna.

- Avoid knocking the LCD and dropping your SC200..

- Avoid leaving your SC200 lying in the sun behind a windscreen.

- Rinse your SC200 with fresh water after every sea outing and store it in its protective pouch..

- Use a soft cloth to wipe the screen, taking care not to scratch it..

- Make sure that the weather cap is well in place before going on the water.

- Never turn the breather, don't damage it, this is NOT a RESET BUTTON
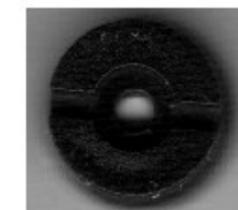
**DON'T TURN IT
DON'T DAMAGE IT**

For a full detailed explanation of all the functionalities of the SC200, do not hesitate to refer to the SC200 user guide and the waypoint and routes appendices :

HTTP://WWW.NAUTEEK.COM/.