Race Sail Tracker V.1.0.0

Race Sail Tracker application provides relevant information for race training or competing sailors: a race start sequence, Velocity Made Good, Degrees Off the Wind, actual / maximum speed and additionally manual correction of the wind direction. It works offline without a smartphone as well (appreciated for sailors being abroad). Sailors don't need a separate start sequence watch anymore. Polish top kite-racers were involved. It took 6 months to develop it.

More information about developments and documentation can be found on:
https://www.007software.eu/race-sail-tracker/

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1   Usage

Notes

- *If you check the checkbox for fetching the weather data automatically in the settings of Garmin Connect, your watch should be paired with your phone and your phone needs to be connected to the internet.*
- *The Free version will show all fields and functionality and recordings will be saved to Garmin connect, but after 6 times only 1 screen will be visible and the recordings will not be saved anymore. It took many hours to develop this App. For the price of a beer for me and a wine for my wife, you can purchase the Pro version and enjoy all features of this App.*
- *Register at www.007software.eu (not mandatory). You can buy the Pro version via the web shop. You get a license key, which you enter in the settings of the app via Garmin Express or through Garmin Connect on your phone. Instructions follow in this document.*
- *When you use this app, it is better to disable all notifications from your phone. When kiting, you won't be able to check them anyway.*

1.1   Start screen

Once started the GPS will search for your location. The green lines on the bottom of the

screen will show the signal strength.

A check is made to see if your phone and heart rate belt is connected they will be shown.

If you have a temperature sensor attached or an internal temperature sensor and you bought the Pro version, then the temperature from this Tempe device will be shown. Also note that with a Tempe, it may take a minute or more before the temperature is shown.

When the GPS strength is strong enough you can press the Start (enter) button to start recording or press the UP button on button devices and tap the screen for touch screens to set the wind direction manually. If you do this before the strength is good, the watch will still try to get the GPS and starts automatically when the strength is enough.

The app works when a watch is on or offline.

The app automatically collects wind direction automatically from weather servers when the watch is connected to internet via a smartphone.

You can correct it manually by pressing the UP button on button devices and tap the screen for touch screens. The wind direction screen will pop up. Wait until the GPS signal is strong enough. The top arrow shows the wind direction from the weather data (if fetched). The lower arrow shows the direction your watch is pointing to (north side of the watch). The position will be more accurate if you walk exactly towards the wind for a while. When the lower arrow points to the desired wind direction, press the start button. It is also possible to set the wind direction by filling three digits representing true wind direction (000-360 degrees).

On button devices, use the up and down keys for adjustments. On touch screen devices tap on the arrow images on the screen. The right digit is default green. When you use the buttons or tap the arrows this digit will change. Pressing the Back-button (or right swipe for some touch screens) will set the focus on the middle digits etc. When changing the digits, the lower arrow will become green and the point of the arrow points to where you think the wind is coming from. If you are done press the start button.

Note: If you don't set the wind direction manually, the wind direction is taken from the weather server. If you disable the fetching of the weather data in the setting screen a message will appear telling you the wind direction is not set (NA). Set the wind direction manually by using the UP button or tap the screen.

When you don't press the Start (enter) button the screen will close after 2 minutes. After pressing the Start button, the record screen is displayed. It is not recording anything yet. In this screen you can press the Start button to start recording or press the back button for the starting sequence (5-4-1-0 or 3-2-1-0).

The type of race sailing sequence can be set in the setting screen of the App in Garmin Connect mobile or Garmin Express to 5-4-1-0 or 3-2-1-0.

You can choose speed units in Garmin Connect settings (knots or km/miles per hour).

Initially the screen shows the chosen sequence and the time. In racing when a red flag is hoisted (beginning of the sailing sequence) press the BACK button (or swipe right on some touch screens). The left number will be red and a timer is counting down to the next sequence number. When you need to synchronize your timer with running sailing sequence (for instance you were late) press the BACK button again when a next flag of sailing sequence is hoisted. The display will drop down to the next full minute in countdown. For instance, if the watch shows 2:18, pressing BACK button will set the watch to 2:00 and it will continue to count down.

At 30, 20 and 10 seconds to the start, the watch will beep and/or vibrate. The last 5 seconds will beep and/or vibrate at every second and when the time is up the App vibrates and/or beeps loudly. The recording screen is shown again and it is recording. Timer will show time counted from a starting signal.

Please test the sailing sequence on land first to become familiar with it.

There is only one screen with 6 fields. The timer on top, the time at the bottom, the speed in the top-left corner, the max. speed in the lower-left corner (for last 120 seconds), the VMG (Velocity Made Good) in the top-right corner and the DOW (Degrees Off the Wind) in the bottom-right corner

The VMG and DOW figures will color red if you move more than 90 degrees from the wind (downwind) and it will be green if less than 90 degrees from the wind (upwind). Based on the setting of the speed unit in the settings of the App, the VMG is shown in knots or km/miles per hours

In the setting screen you can set a timer to adjust a period saving maximum speed for the given period.

The second screen shows the startup screen.

To scroll through the screens:

- On touchscreens. Tap at the top or bottom of the screen or swipe up or down or left or right (on the VivoActive 3, swiping from left to right won't work, since this is the back functionality)
- On non-touch screens. Press the up or down button

If you checked the checkbox for fetching the weather data automatically in the settings of Garmin Connect for this app, the weather data is fetched and shown on the first screen.

1.2 Second data screen

The last screen shows:

- The wind speed and direction from the weather data
- The state of the battery (Circle at the edge)
- If a temperature device is attached
- If you are connected to your phone
- If your connected to your heart belt
- The temperature in degrees or Fahrenheit (if a tempe device is attached the temperature comes from this device, otherwise it comes from the online weather servers)
- GPS status
- Altitude

2   Start/stop

To stop the recording press the Start button again. A screen is shown in which you can select (tap on the image for touch screen devices):

- Discard. To remove your recording and stop the program
- Save. To save your recording and stop the program

- Return [⇦] to return to the recording

The selected "Button" has a green dot in it (not for touch screen devices).

Once saved, the recording will be uploaded, if you are connected to your phone and you have set your watch to upload immediately. The recording can be seen in Garmin Connect.

In the Garmin IQ fields the following data should be visible:

- Number of legs
- Best VMG upwind
- Best VMG downwind
- Maximum speed upwind
- Maximum speed downwind

Note for competing sailors: stop the app after crossing a finishing line. Start the App again and update the wind direction manually if necessary. Then wait until next start sequence is initiated. It would allow to save each of the races separately what makes postrace analyses easier. We recommend to use http://gpsactionreplay.free.fr for those purposes.
Stop the app while training only when you need it or you want update the wind direction.

3   Locking keys

It is possible to lock the keys. For a Garmin Vivoactive HR it is possible to use the normal button (press back key for 3 seconds) for that. For other watches I don't know.

Note: Activation of the lock can only be done in screen 1.

- For watches with a touch screen tap 3 times on the top of the screen in the first record screen. Your watch will vibrate, stating that it is locked and a lock icon will appear. Tap 3 times on the top of the screen again to unlock. The watch vibrates again.
- For watches **without** a touch screen, press the UP button 3 times in the first record screen. Your watch will vibrate, stating that it is locked and a lock icon will appear, press the UP button 3 times again to unlock. The watch vibrates again.

4   Thresholds/settings

- License key. Here you set the license key you got via the mail. Make sure no spaces are added before after or in the middle.
- Get the weather data automatically. When this is set the weather data including wind direction and temperature is fetched. You need to be connected to your phone and the phone needs to be connected to the internet.
- Maximum speed recording period. Here you can set the period (in seconds) for which the maximum speed is shown. If it's set up for 60 seconds, then the app will show maximum speed reached for last minute counting from present time. This is helpful for sailors who train speed sailing on short distances and want to check their results after each leg.
- Starting sequence. You can select 5-4-10 or 3-2-1-0. You can use this to get in sync with the starting procedure.
- Threshold degrees legs turn. Default is set to 30 degrees. So if you make a turn and the deviation is within 30 degrees of the starting zero line, an leg will be recorded
- Select the distance unit.
  - Miles/km's. When set it detects the units from your watch settings
  - Nautical miles. The distance is displayed in nautical miles
- Select the speed unit
  - Miles or km's per hours. When set it detects the units from your watch settings
  - Knots. The speed is displayed in knots
- Wind unit in km/mile/h or m/s
- Set the contrast color. Select:
  - Black on light grey
  - Black on white
  - White on black

Note: On some device like the Descent MK1, you set the compass sensor to true North. This is used for underwater activities. For sailing set the North reference to OFF and in the compass setting MODE should be set to OFF.

5 Adding your license key and select automatic fetching of weather data and set thresholds etc.
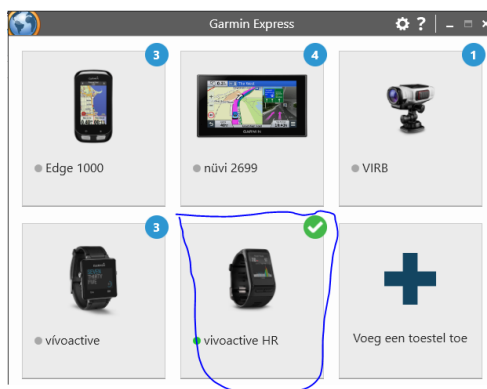
This can be done in two ways:

1. With your computer, via Garmin express
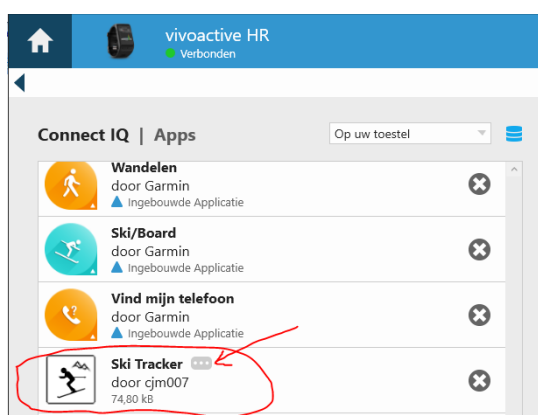2. On your phone, via the Garmin connect app.
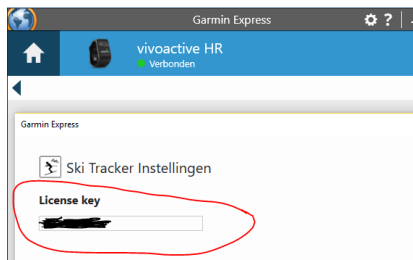
5.1 With the computer

Attach your Garmin watch to your computer. Start the program Garmin express

Click on your watch symbol and then on the button Control App

Look for the Race sail App in the list and click on the dots on the right of the description. (The image shows an example of the Ski tracker)

In the next screen you can enter your license key and save it.

6   On your phone

Start the Garmin Connect App.

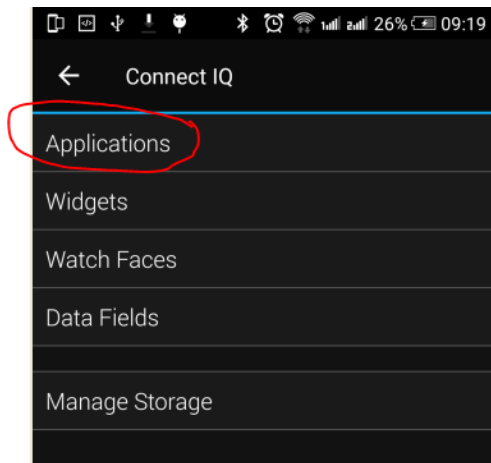Click on the menu symbol and go to "Garmin devices".
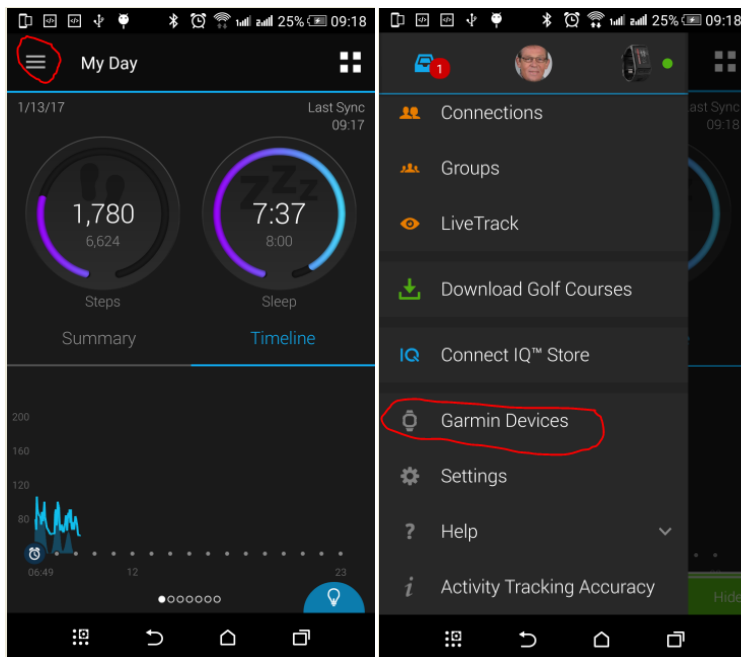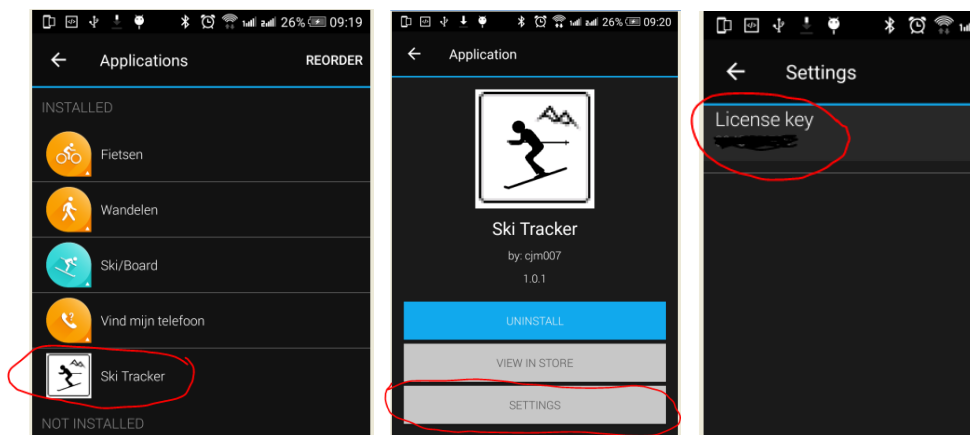

Select your Garmin watch
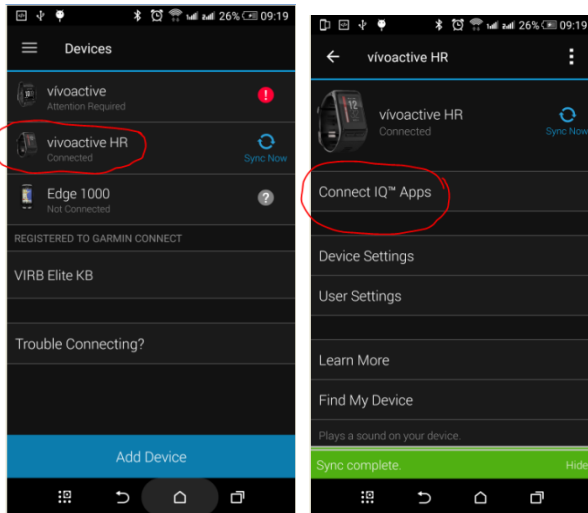
and click on "Connect IQ apps"

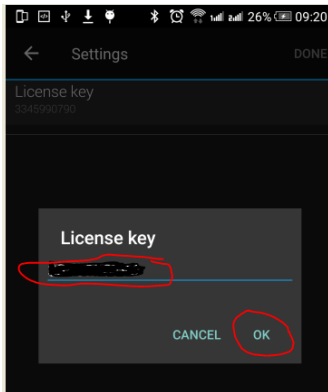Then click on "Applications".

In the list with applications, click the Race sail Tracker App (here the Ski Tracker is shown as an example)

and the button "Settings".

Click on the License key and fill in the key.

Save your entry and you are done (click on OK and then on OK or Done in the right upper corner.

7   Trouble shooting

This app requires some period of familiarization to understand functions and operating modes. The best would be to learn it by thoroughly testing.

When you encounter problems with the app. Connect your watch with your computer. After a while you here a short sound. This means the watch is connected. Open your file explorer (mostly it will open up after connection is successful) and look for you Garmin directory.

Open the map GARMIN->APPS->LOGS, and add a file called CIQ_LOG.txt to this directory. Disconnect your watch an start the App again. When it crashes, the error is written in this file. Connect your watch to the PC again, go to the log-directory and mail the file CIQ_LOG.txt to kees@007software.eu
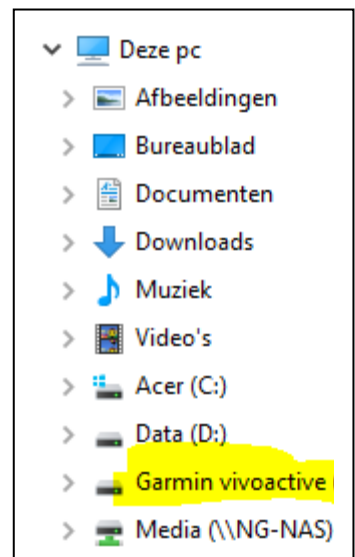

8   Notes

- The app can be used for the following languages English, Danish, Dutch, French, Polish, Portuguese, Italian, Spanish and German. If you want a new translation in your language, send me a mail!
- Please report any mistranslations to kees@007software.eu. (I'm Dutch :))
- If you encounter any problems, please put the file "CIQ_LOG.txt" in the "GARMIN-APPS-LOGS" directory of your watch. Run the app again and send the file to my email address.
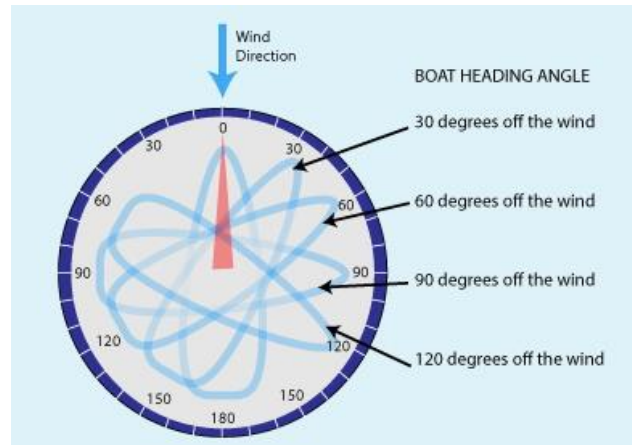
Velocity Made Good VMG:
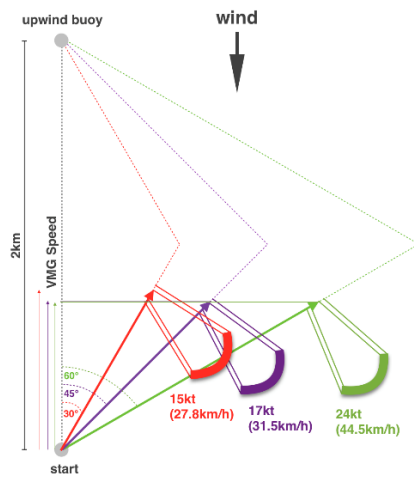
Degrees Off the Wind DOW:

9 Software disclaimer

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