



## Coxmate SC (SC and SC-R): Quick Start Manual

### 1. Introduction

**Caution (For SC-R only): FISA regulations do not permit radios to be used by crews during races - They can be in boat but must not be used. However some jurisdictions do not allow them to be carried in boat. Please check with your local regulators if you are carrying the SC-R in boat during a race. Otherwise you risk disqualification.**

We realise you are in a hurry to get out and try your new acquisition, so we've produced this manual to help. The SC is a powerful instrument and some of its power will only become apparent after some practical use, and some reference to the full manual. Each time you record and analyse your rowing data, you will see more opportunities to use the SC to improve your speed.

This is the only hard copy manual included. All the others are on the CD supplied – a sign of the times.

### 2. To Start

After you have unpacked unit, charge it up. If batteries are fully discharged, they may take some time before the 'Charging' message appears. You can now go to either **Setting Up**, or **Getting on the Water** section. For logical reasons we will cover **Setting Up** first.

### 3. Setting Up

This covers setting up real time clock in unit and other user options.

**3.1 Loading Software:** Load CD provided into PC, create a Coxmate folder and copy the **PCCoxMateSC.exe** into this folder. If you want to try software on sample data supplied, then also copy *data* folder and the *video* folder across, into Coxmate folder.

**3.2 Connecting to PC:** Connect the **PC Link Cable** supplied between the SC and the PC serial port. If PC does not have a serial port, then you will have to use a serial to USB adaptor – not supplied.

Turn SC unit **ON**, by holding **Menu On/Off** button down for a few seconds and:

- Press **Menu** and scroll through SC menu to '**Menu 9 Memory**' and press **Ent**. This will bring up '**Memory PC Conn**' on SC display.
- Press **Ent**. SC display will then show '**Waiting for PC**'.

Start the **PCCoxMateSC.exe** application on your PC. The first time you run software it will display a window showing a 'lock key' number and requesting a 'matching unlock license key'. To receive this unlock key, email your 'lock key number' to [software@coxmate.com.au](mailto:software@coxmate.com.au) and an unlock key number will be emailed to you. Don't panic, even if the software is not 'unlocked' it will run, but will only store up to 10 records, and the **delete**, **import** and **export** functions are disabled.

On your PC you will see a number of tabs: **Connect**, **Select**, **Chart**, **Splits** and **Setup SC**. Each of these will take you to the relevant page. Select the **SetupSC** tab. This will take you to the **Setup SC** page:

- Select **COM** port – the one you have connected to the **PC Link Cable**.
- Once communications is established, the SC display will change to '**Connected to PC**' and the PC will display the SC firmware version and serial number on **Connect** or **Setup SC** page. If there is no communications, then go to **Connect** page and click on **Retry Connection**.
- Now go to **Setup SC** page and set up *Date and Time*, *Default Radio Channel* (only used on SC-R model), *Speed Display Units*, *Split Distance for SC* – the SC will display these

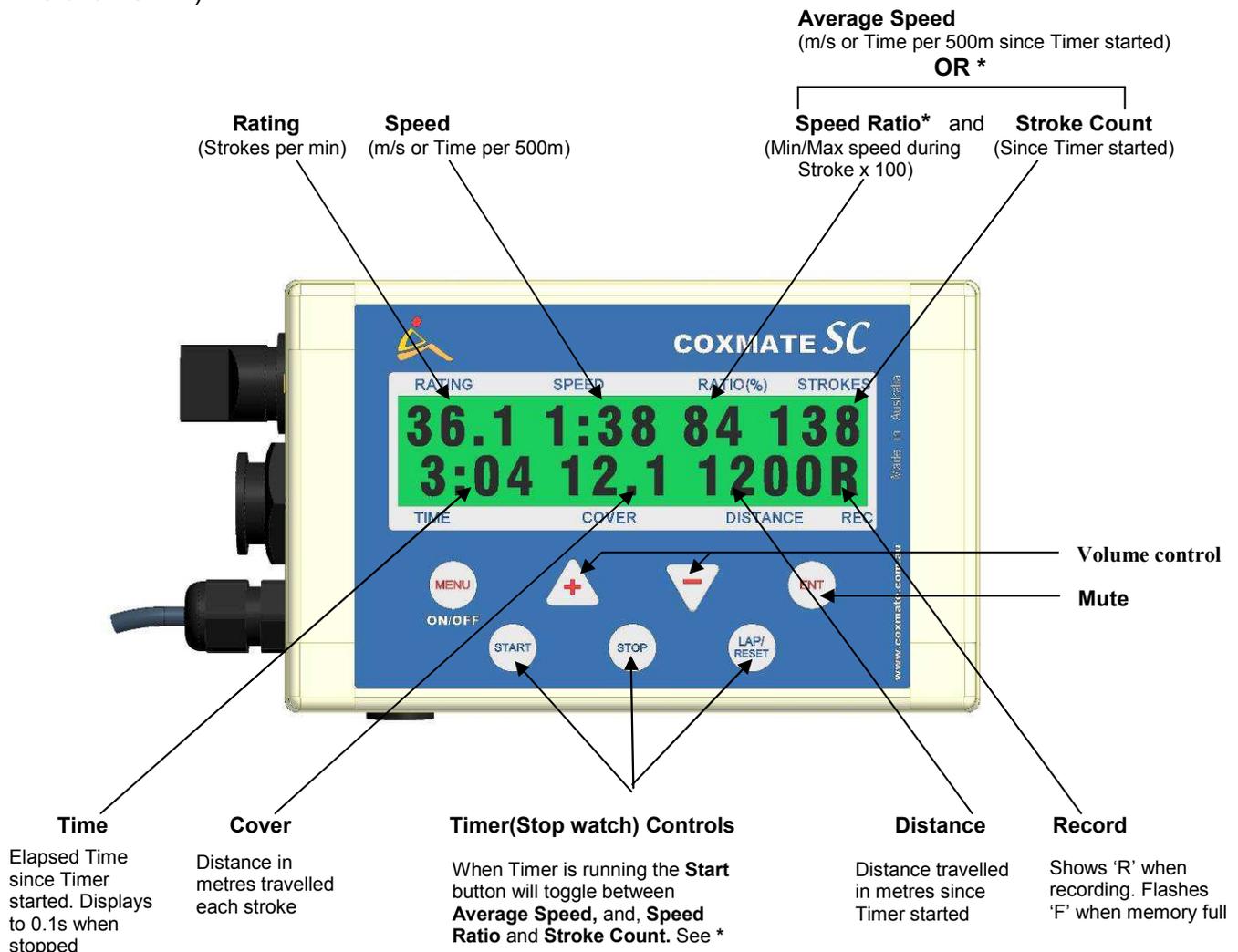
splits in boat, and *SC Status Display* – either *speed Ratio* and *Strokes* count, or *Average Speed* to be the default display on right hand half of top line of SC. You can enter your *Club Name* – it will appear on any printouts you might produce.

#### 4. In the Boat

Fit the speed sensor as per instructions supplied with it. There is a special mounting plate provided for fitting the SC to the boat, but for your first outing you can hold it in your lap. Connect the 4 pin rubber speaker/stroke sensor harness connector and the small bayonet connector from the **SC-XP** Speed Sensor cable to the SC. Turn unit **On**. After a few seconds it will display **'Ready'**. Press **Start** button once and move seat with magnet across seat sensor. Stroke rating should appear. Ask someone to blow on the impeller – to make it spin. You should see a speed reading and the distance will increase.

If no stroke pulse is received for 12 seconds, timer will stop, the SC will flash **Stop**. Pressing the **Start** button again will restart the timer.

Now you are ready to row. The following picture shows what is normally displayed, and what the buttons do. The SC defaults to the **Status** display. From this page you can perform most of the SC functions; ( the picture is of an **SC-R**):



\* The **Speed Ratio** is a measure of how much the boat is being slowed down during the recovery. Generally the higher the reading, the greater the efficiency. If Average Speed is displayed an 'A' will precede the value eg **A1:55** or **A5.65**, depending whether time per 500m or m/s have been selected.

When a **Split** period has been completed – this **Split** distance is set with PC, the word **'SPLIT'** will flash in place of **Cover**, and the **Average Speed**, **Average Rating** **Average Ratio**, **Time**, and **Stroke Count**, for the **Split** distance will be displayed. This display will stay for 10 seconds, or until the **Start** button is pressed.

It is important to understand each time the Timer is started after it has been Reset, then a new 'Record' will be created. This 'Record' is time and date stamped at this time. The Time and Date become the identifier for the 'Record'.

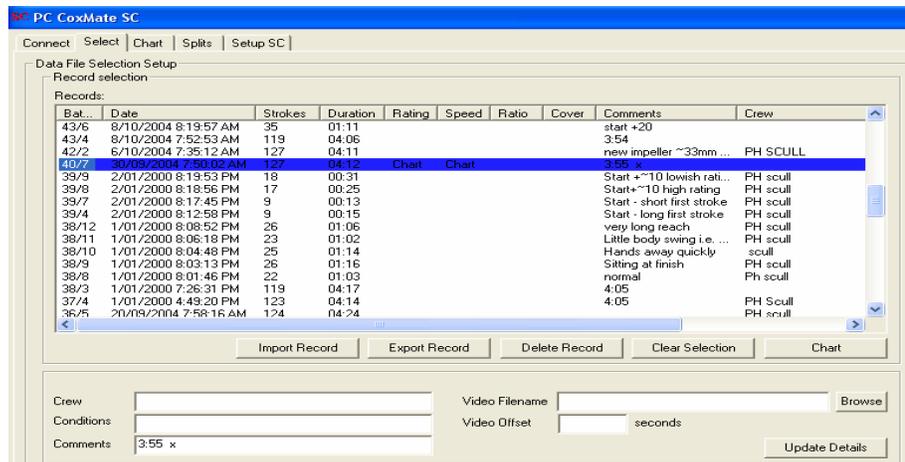
### 5. The Menu System:

There are many other features offered by the SC. You probably won't use these to start with, but here is a brief outline of these other Menu functions:

1. **Battery** - Displays battery % and allows battery to be deliberately discharged
2. **Backlight** - Backlight ON/OFF and display contrast adjust
3. **Volume** - Volume adjust – Can also be done from 4.Status screen
4. **Status** ..... **DEFAULT SCREEN** You can not exit this screen when timer is running
5. **Radio Set Up** – Radio ON/OFF, default channel select and volume control. This is used on both the internal radio for the **SC-R** and the external radio on the **SC**.
6. **Recall** - Enables rating and time intervals recorded to be recalled on the SC – no PC required
7. **Metronome** – Generates audible pulse at chosen rate
8. **Calibrate** – Calibration of Speed Sensor
9. **Memory(Connection to PC)** – Memory % used, Memory Clear, and connection to PC

### 6. The Analysis

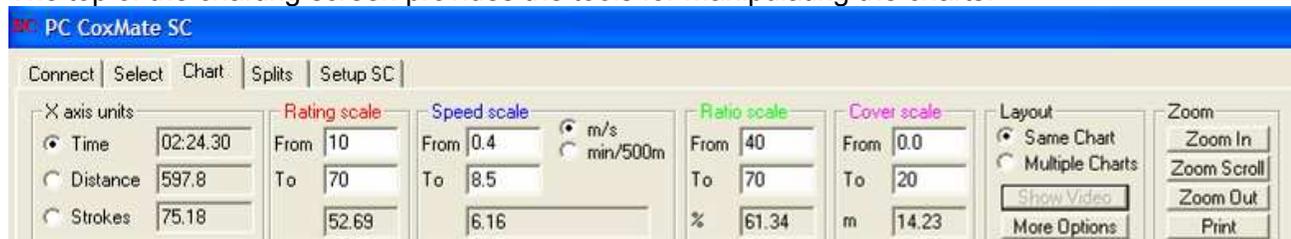
You are back from your row, eager to look at your data? Connect to PC as per section 3.2 Connecting to PC. Now select the **Connect** tab. If communications has been established you will see a list of records. Select **Transfer batch to PC**. This will take up to 3 minutes, depending how much data there is. It is recommended you do not use PC for other purposes during this transfer. When it has finished transfer, you can elect whether to clear SC memory or not. Now select the **Select** tab. This will list all the records in the PC – including any other ones which may already be there. Click on one of your records; It will be highlighted in blue. You can now annotate the record by typing relevant information into the **Crew**, **Conditions** or **Comments** fields.



To choose which variables to chart, click on the blue line under the appropriate heading – **Rating, Speed, Ratio, Cover**. The text in the blue line will switch between 'Chart', '2x' and blank. The '2x' function is included so that comparisons between different parts of the same record can be made. You can select several records for comparison– too many will cause confusion.

Once records/variables have been selected, then click on **[Chart]**.

The top of the charting screen provides the tools for manipulating the charts:



The Chart will display the selected variables on a single chart. Each variable has a different colour:

- **Rating** -Strokes per minute.
- **Speed** -Metres per second or time per 500 metres.
- **Ratio** -Ratio of minimum to maximum velocity during each stroke, expressed as a percentage.
- **Cover** -The distance covered on each stroke in metres.

Where the same variable appears more than once on the same chart, the lines will be dotted/dashed to differentiate them.

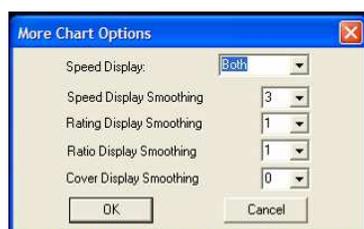
The X axis will default to time. When a variable is first charted, the entire *record* will be displayed. The box on the top left enables X axis to be changed to either distance or stroke count. As the cursor is moved around the chart, the actual X value is displayed.

The next four boxes, **Rating Scale**, **Speed Scale**, **Ratio Scale**, and **Cover Scale** enable the Y axes scales to be adjusted. Also at the bottom of each box is the value of the cursor position. If you want to read a precise value of a point on the chart, then the cursor should be moved to this position and its value read from the appropriate box. The speed box has the option of speed being displayed in m/s or time per 500m.

The next box is '**Layout**'. This provides the option of '**Same Chart**' or '**Multiple Chart**'. '**Same Chart**' draws all 'records' on the one chart. '**Multiple Chart**' draws each record on a separate chart.

There are two other options under '**Layout**', **Show Video** and **More Options**.

If the **More Options** box is clicked the following drop down display will appear:



'**Speed Display**' enables either, '**instant**', '**average**' or '**both**' to be charted. The '**instant**' shows the speed every approx 25mS. This will show the velocity profile through the stroke. The '**average**' is the average speed for the stroke and '**Both**' displays both '**instant**' and '**average**' speeds.

The other four options are for the smoothing of the graphed variables.

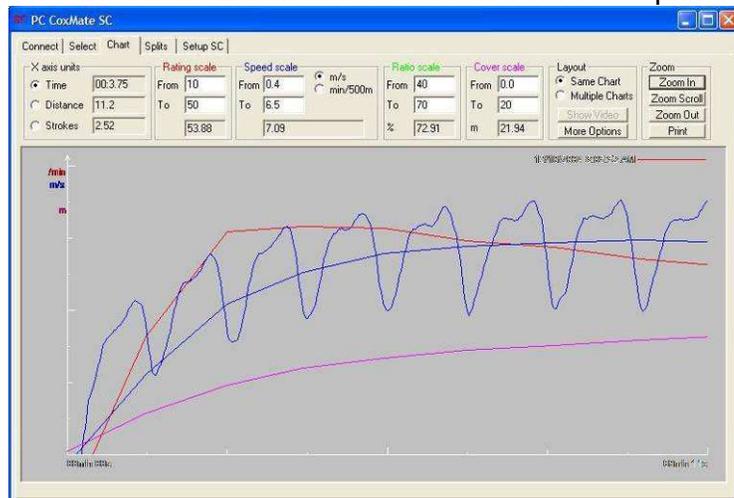
If a record is selected '**2x**' then it is treated as two separate records, and can be displayed on two separate charts. This enables different parts of the same record

eg the start and finish of a race to be compared graphically.

The '**Zoom**' function is for zooming in or out of chart on X axis. There are three functions: Magnifying display- '**Zoom In**', going back to displaying full record- '**Zoom Out**', or, for scrolling left (backwards) or right (forwards) through the record- '**Zoom Scroll**'.

To '**Zoom In**' click on this button, then move cursor over desired area with left button held down. To '**Zoom Scroll**' click left button on chart, drag it to the left or right and release button.

Underneath the **Zoom** functions is the **Print**. This print function prints out the current chart being displayed.



The adjacent graph shows the first 7 strokes of a start. The blue lines show both instantaneous speed and average speed (averaged over a stroke). The instantaneous speed shows how the boat speeds up and slows down through the stroke.

The red line is the rating, and the purple line is the cover – distance travelled for each stroke. As expected the rating is high for the first few strokes, and drops off once the boat is up to speed. At the same time the cover increases as the rating decreases.

There is much to learn about the SC. You will have learned from your first experience on what to do, or not do next time. Whilst the software is intuitive, reading the full SC analysis Software manual will help you get up to speed faster.