Lynx Camera / RevSport Setup Procedure v3.0

Contents

DAY BEFORE REGATTA

Check the 2 RadioLynx remote starters are fully charged

Turn with **Green On/ off button** - Wait for display to show 000 (approx. 15 secs) the tap on/off button quickly . The display shows percentage charged. If charged percentage less 80% plug unit into charger.

If the units have a charge of 80% or more power the unit OFF again. One Unit will be use by the Starter on the Day, the second Unit can be the backup

The RadioLynx Units should maintain charge for a number of Regattas. However, it is good practice to check, just in case.

Dowload race files from Revolutionize to Laptop

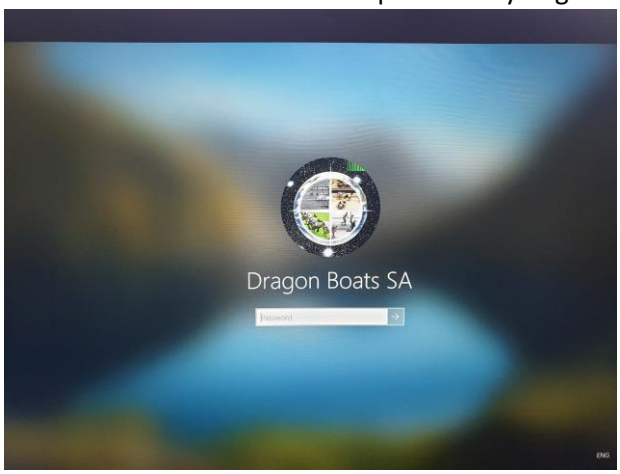
The download can be done day before or day of regatta.

STEP 1 Log into race day laptop LOGIN: lynx

- Create a new folder in DOCUMENTS for the race day:
- In this file create another 2 files called Input and Output.

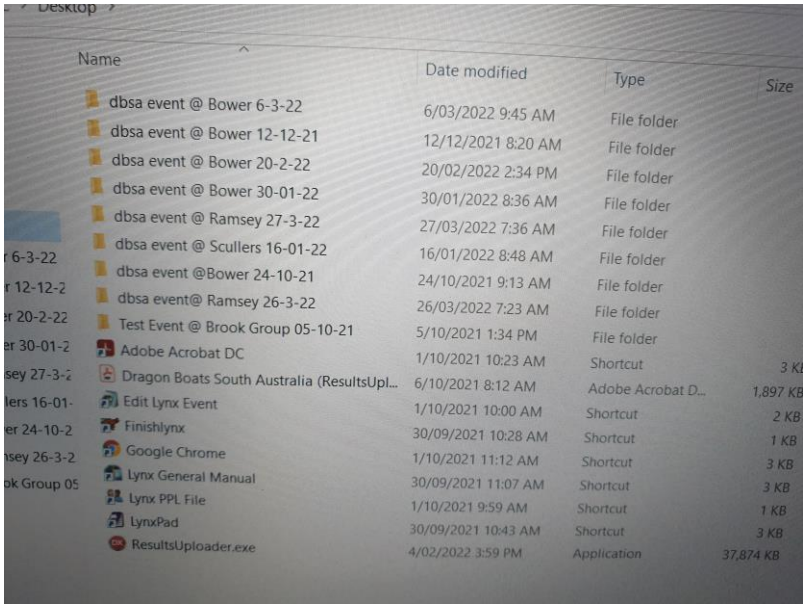
*NOTES:
1. additional information such as the race draw can be kept in the race day file.
2. Files should be event and date specific and should not be deleted.
3. Once the Regatta has finished, you can keep the file as a historic record.

4. You will need to do these steps for every Regatta.

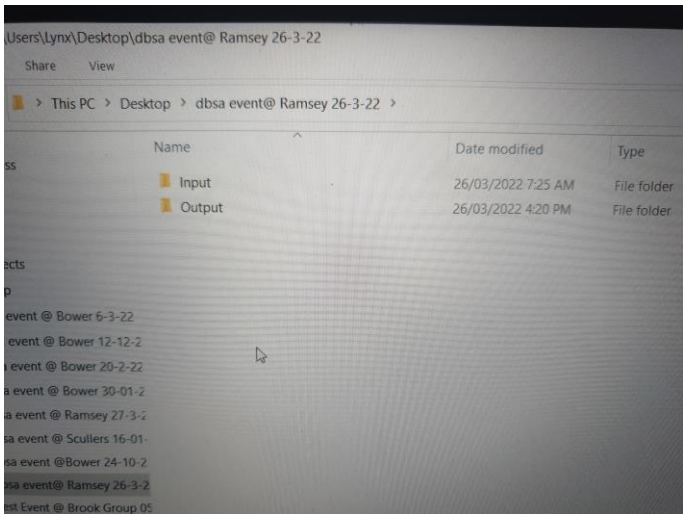


Step 2 Create File in Desktop for the Regatta save with title:

dbsa event @ (name of site for regatta then date as per picture below

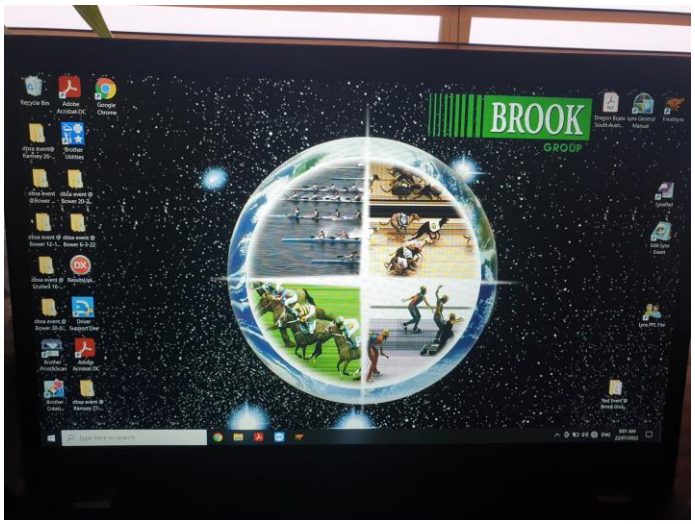


In the folder create two folders label one **Input** and the other **Output.**



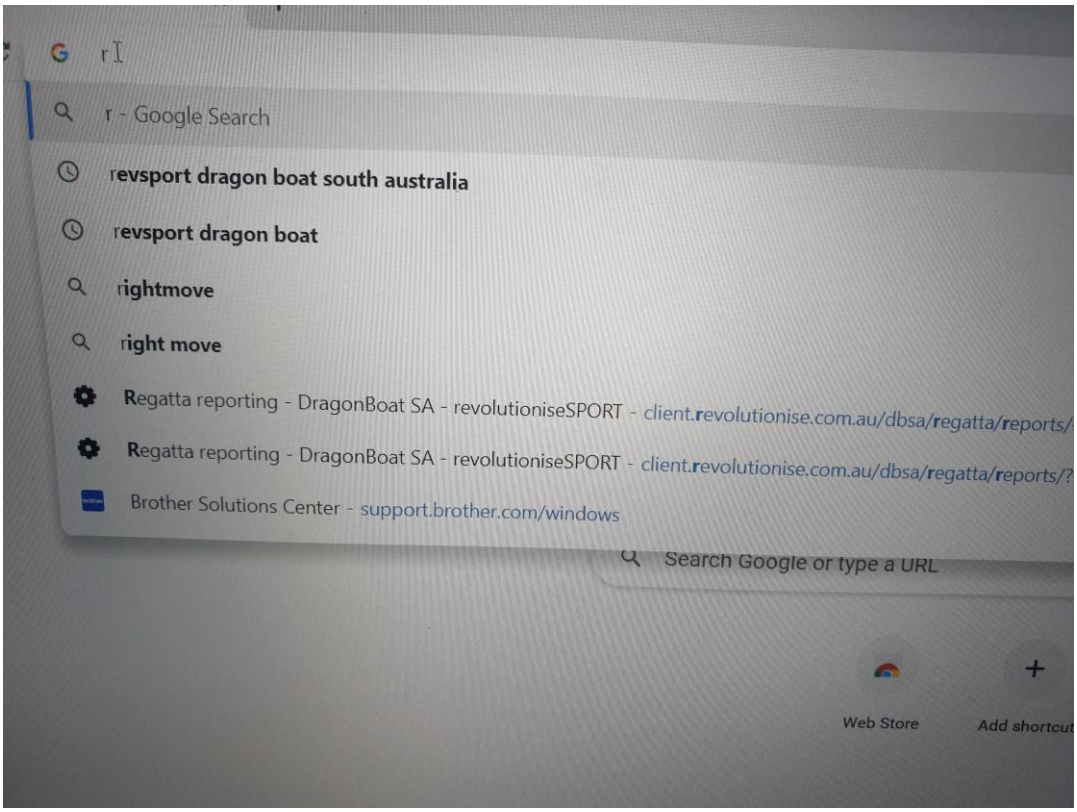
STEP 3 Log Into Revolutionize

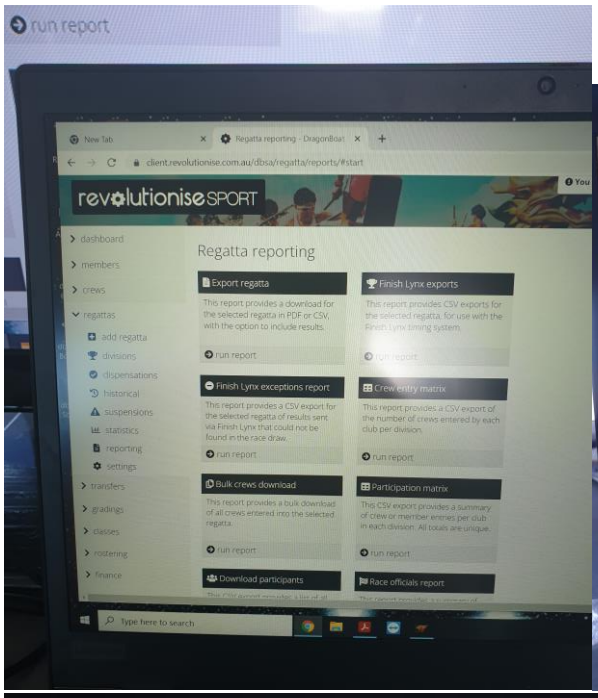
LOGIN:

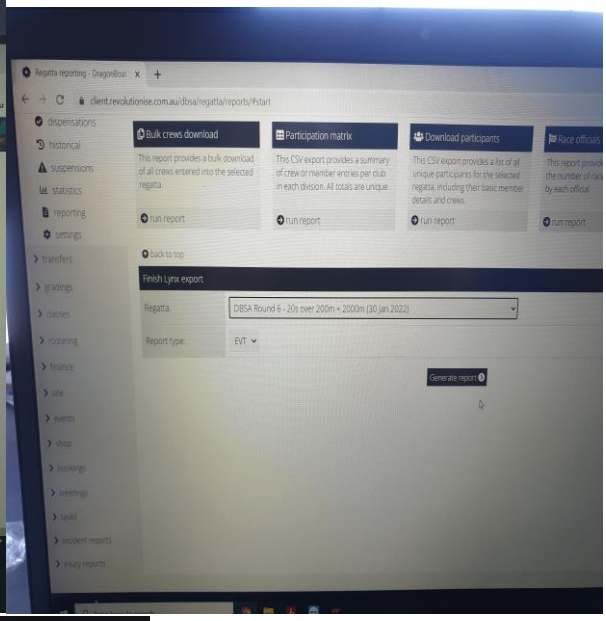


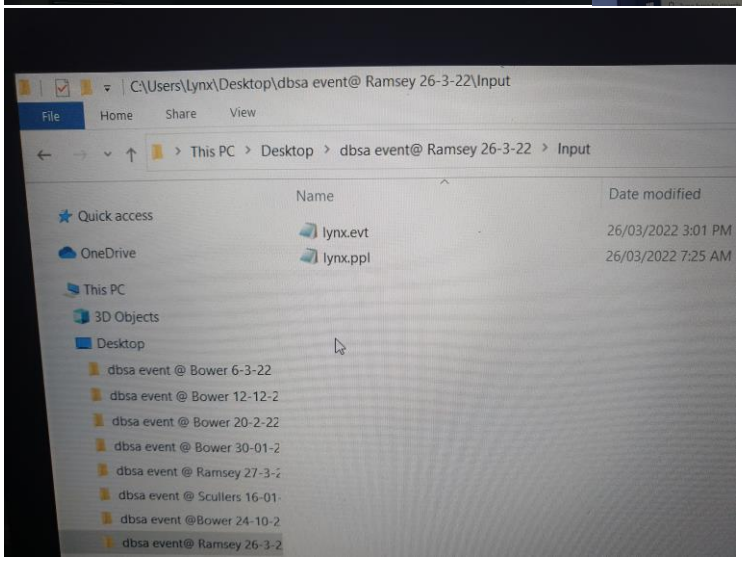
You will need to down load **FinishLynx.ppl** and **FinishLynx.evt files**. Both files need to be saved into the '**Input**' Folder location. There is only 1 file of each for each regatta.

The file name should be **lynx.ppl** and **lynx.evt – do not give them any other name and ensure all letters are lowercase.**


r - Google Search
revsport dragon boat south australia
revsport dragon boat
rightmove
right move
Regatta reporting - DragonBoat SA - revolutioniseSPORT - client.revolutionise.com.au/dbsa/regatta/reports/
Regatta reporting - DragonBoat SA - revolutioniseSPORT - client.revolutionise.com.au/dbsa/regatta/reports/?
Brother Solutions Center - support.brother.com/windows
Search Google or type a URL
Web Store
Add shortcut







The files are now ready for race day.

RACE DAY SETUP

Assemble camera and equipment

There are **2 hard cases** and the **camera stand.**

The cases house the camera, camera lens, camera 'rain cover' (to be used if it looks like rain to protect the camera) cables, cable ties, tape to secure cables and antenna (if required) and laptop. Place laptop in Caravan as it will be the set up after camera is setup and turned on.

Set up Camera first

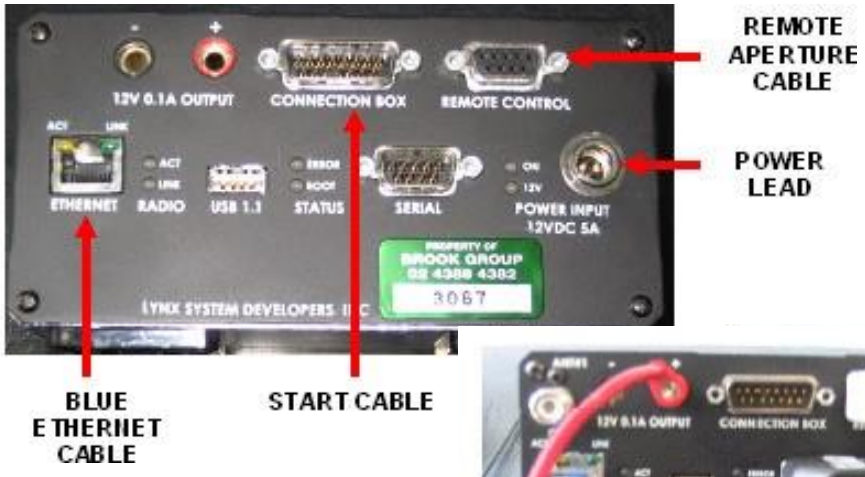
Setup and connect all equipment. Setup Camera Stand

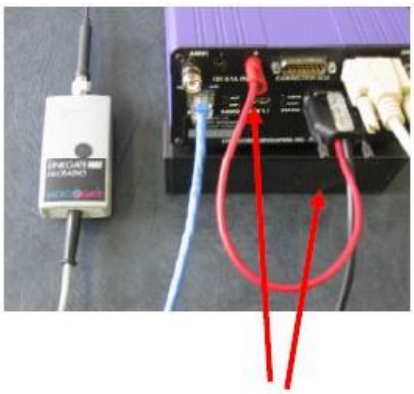
1. Make sure the **'Light Source'** slide on the front of the camera is set to the **'Normal'** position.

2. **Mount the camera and lens**

3. Connect the **remote positioning cable (white cable)** to the back of camera and front as demonstrated in picture.

4. **Connect the camera power supply, ethernet cable and timer lead to the camera.**





RADIOLYNX RECEIVER

Secure the antenna to the camera stand leg or adjacent pole

Connect to Power and turn camera on.

Power Up Camera (Plug camera power cord into the power board near the camera)

Take off Camera Lens Cap and place on top of camera

Wait for the Boot light on the back of the camera to slow flash yellow

(if it does not, or the error light on the back of the camera is on, call for help - possible cabling issue, camera issue , power problems , Lynx configuration error or another Lynx computer is powered on)

- **Align the camera**
- **Close the view finder.**

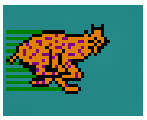
Set up Laptop and Screen

Connect all cables to from camera to laptop. Do not turn laptop on until all connections completed and camera is aligned and ready.

Power up Judge level computer and login – password: **lynx**

(dont open any software until the camera set and ready)

FinishLynx Setup

Double Click the Lynx image  **on the Desktop** The first screen is titled hardware control.

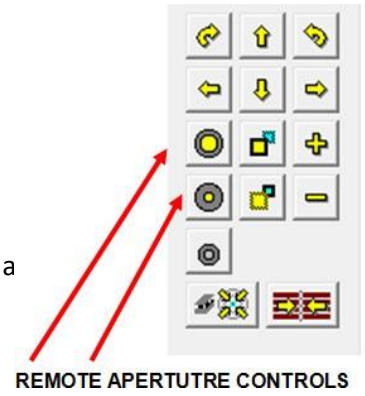
At this point the mouse pointer will become an “hour glass” and a green bar in the bottom right hand corner will show loading camera. This will take approx. 15 seconds.

If this does not appear check all connections including the camera power supply and re perform race day set up.

Once completed start aligning the camera by clicking the align icon. This icon will change colour from red to green and the track scan will march across the screen. If the image is black close the align mirror on the camera.

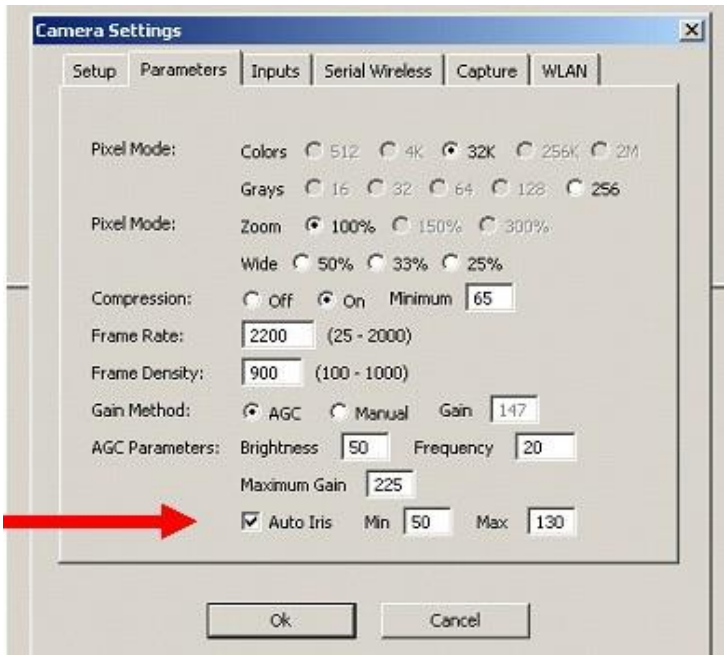
Please note the track image should appear sharp on the screen. If the image is blurred check camera alignment and focus. (Refer trouble shooting for hints.) Use the Image zoom / minimize buttons to check focus.

To manually adjust the aperture, simply press and hold remote control buttons for 4 seconds then release and press and hold again.



Auto Iris Feature:-

To enable Auto Iris, go to camera settings simply tick the Auto Iris box a
The camera will automatically adjust the



It may be necessary to use the image zone icons to assist with the evaluation of an image. These include:-

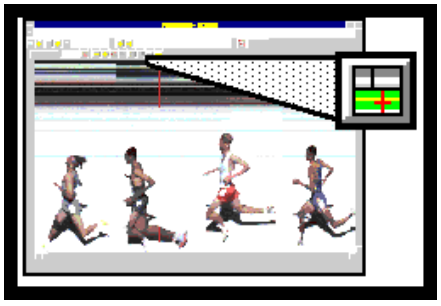
Zooming

To zoom, drag the crosshair to the runner in the middle of the picture. Release the left mouse button and click on the zoom in icon marked with a "+".
This will zoom in 2x on the picture. Clicking the zoom out icon marked with "-" zooms back out.

NOTE: The position of the crosshair determines the center of the image which will be enlarged or reduced. (See "Zooming Intelligence" below.)
It should be noticed that after a while of zooming in, the picture becomes very jagged or pixelated.

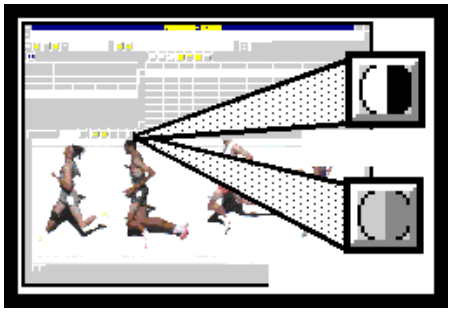
Full Screen Mode

Clicking on the full screen icon will maximize the image zone to fill the window.



Clicking on the reduce screen icon will return the image zone to the default configuration with the results zone also visible.

Contrast Enhancement



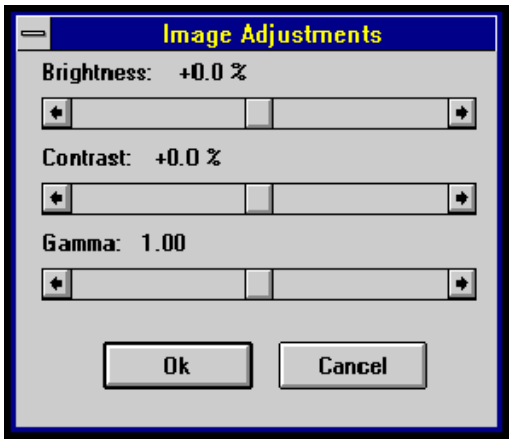
Contrast enhancement allows adjustment of the light level of the image after it has been taken. It cannot salvage terrible pictures, but it can be a big help in distinguishing between parts of an image which are very similar in tone.

It takes a little practice to achieve the desired results, but the good part is that "undoing" the enhancement is as easy as clicking on the un enhance icon, or selecting the Un enhance option from the Image pull-down dialog.

Image Adjustments

In some situations, contrast enhancement might not be the correct action to take to enhance the brightness of an image. For example, it may be desirable to apply a small brightness function to all images. This is particularly useful in events where the background of the image is very similar in color to the objects passing through, as is most common in horse racing. Fine adjustments to the Brightness, Contrast and the Gamma values of an image can be made by selecting Adjustments... from the Image pull down menu.

You can also right click on the side "E" bar and select adjustments.



By using either the sliders, or the arrows at the ends of the slider boxes, the values for the Brightness, Contrast and Gamma value of the image can be changed. The result of making any changes in this dialog can be seen instantly in the image - and it is considerably easier to discover for yourself the effects of altering these values than it is to explain.

For best results use “GAMMA”

Feel free to experiment, because even if the image is saved, the changes can still be undone by returning the sliders to the central position when the file is reopened. For this reason, the operator should not be nervous about experimenting with setting different values in this dialog.

Saving your work.

To save a race to the hard disk click file / save as. Under the Lynx directory select Photos and then the appropriate month.
If event file is used the file name will be generated otherwise enter unique file name. Click save.

Results Filters.

It may be necessary to adjust the FinishLynx time to suite a manual time. To do so highlight “start” then left click on the Camera information icon.

Start Settings Box appears. Enter time adjustment in the offset, to either add or minus time.

Printing results.

After entering all results, these may be printed by clicking on the print icon above the results screen. This will reveal the print screen, enter OK.

Printing image.

To print an image, the area to be printed should be highlighted by dragging a box around the area using the right mouse button. A line may be placed on prints by clicking with the left mouse button near the nose. (the line is the actual position where the image was evaluated.)

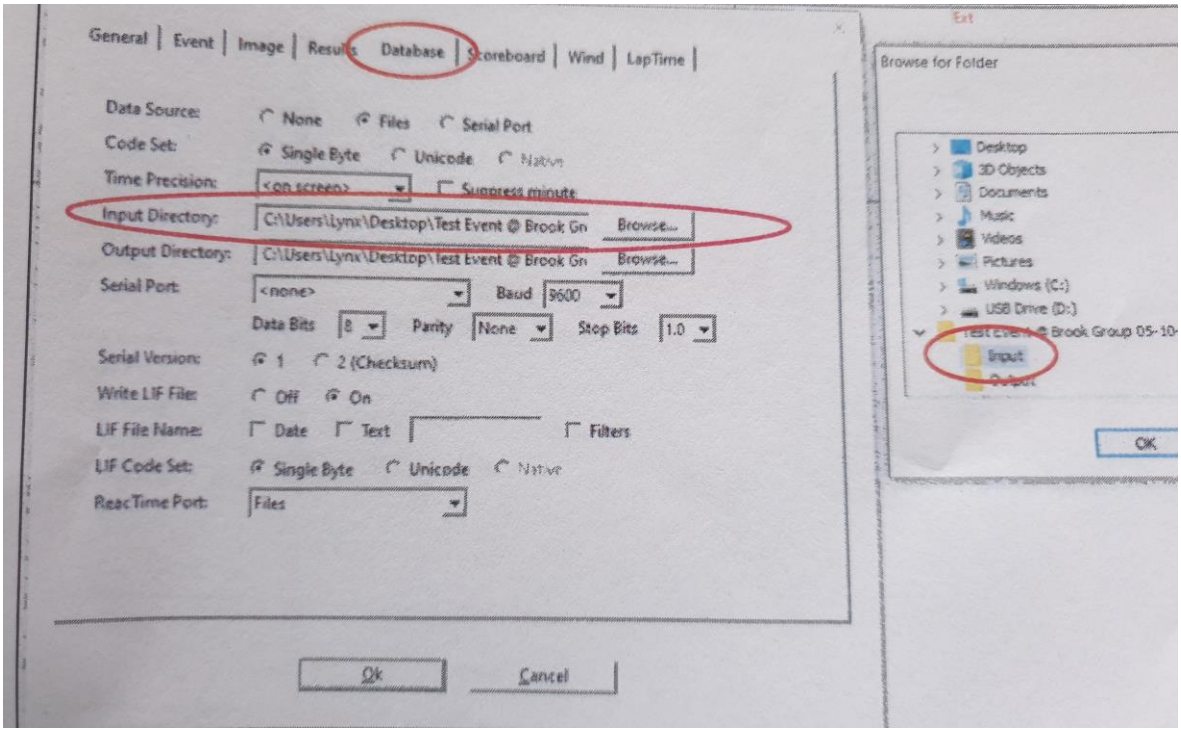
Reduce / cropping an image.

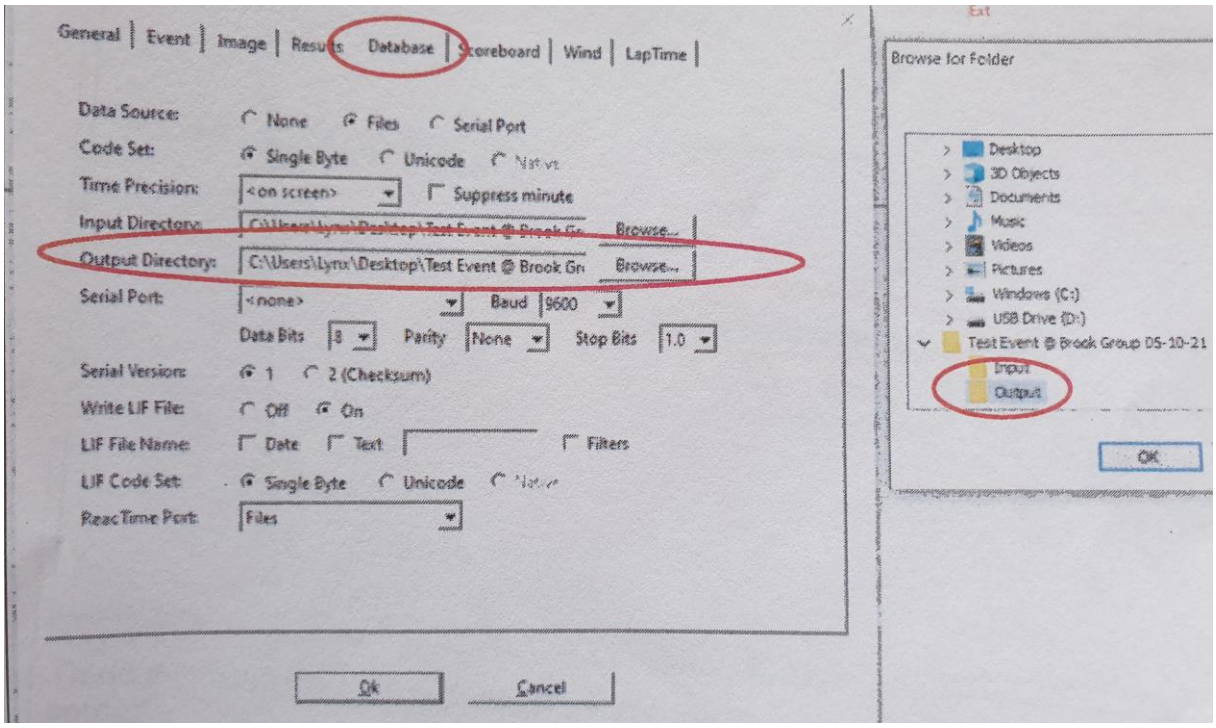
This removes unwanted image to reduce file size and therefore disk usage. Reduce the image size using the (-) icon until the entire image appears on screen. To crop select the portion of the image with no runners in, and define this area by dragging a box using the right mouse button. Click the “crop” icon with left mouse button.
Repeat this until all of the unwanted space is removed. The Auto Crop icon may also be used if desired.

FinishLynx - Set up Database Input and Output Files

Select **FILE** then **Options** then **Database Tab.**

- **In the Database Tab, locate Input Directory click browse and locate the Input file saved for the race event in the Desktop folder on the laptop.**
- **Once located, click ok and the path should appear in the box.**
- **It should read c:USERS\Desktop\name of the regatta file\ the path will be different Every regatta.**
- **You now need to source the Output Directory.**
- **In the Output Directory click browse and locate the Input file. Once located, click OK and the path should appear in the box. It should read:**
- **It should read c:USERS\Desktop\name of the regatta file\ the path will be different Every regatta.**
- **Once this step is complete, click OK and the Options menu will disappear.**
- **Finish Lynx will now look for inputs and outputs based on you r selected files. Finish Lynx will automatically find the paths and locate the .evt and .ppl files.**




General
Event
Image
Results
Database
Scoreboard
Wind
LapTime
Data Source:
None
Files
Serial Port
Code Set:
Single Byte
Unicode
Time Precision:
<on screen>
Suppress minute
Input Directory:
Browse...
Output Directory:
C:\Users\Lynx\Desktop\Test Event @ Brook Gr
Browse...
Serial Port:
<none>
Baud
9600
Data Bits
8
Parity
None
Stop Bits
1.0
Serial Version:
1
2 (Checksum)
Write LIF File:
Off
On
LIF File Name:
Date
Text
Filters
LIF Code Set:
Single Byte
Unicode
ReacTime Port:
Files
Ok
Cancel
Browse for Folder
Desktop
3D Objects
Documents
Music
Videos
Pictures
Windows (C:)
USB Drive (D:)
Test Event @ Brook Group 05-10-21
Input
Output
OK

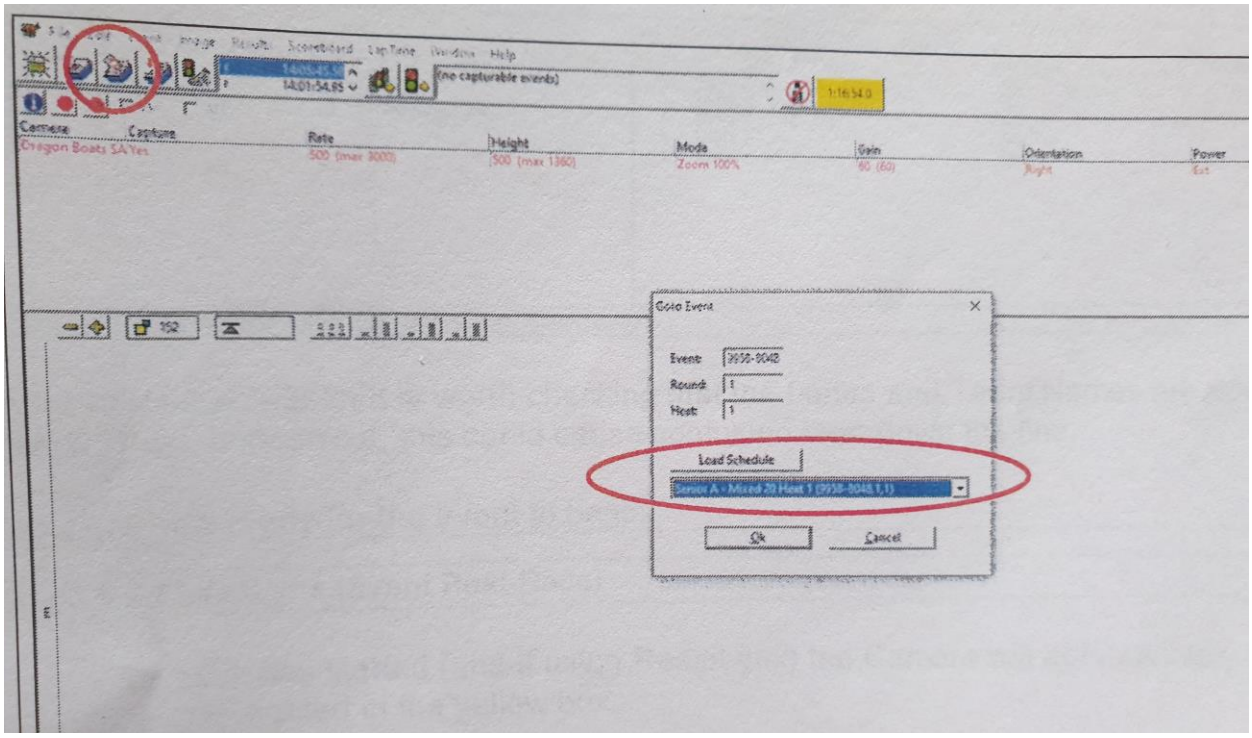
FinishLynx Setup Go to event Setup

Files are now ready to load into FinishLynx for the Regatta.

Load test EVT File (that has been downloaded from RevSport) (top left of the screen).

To do this, select the red question mark with the files (as circled) in the top left-hand corner of your screen.

Once selected, the Goto Event box will appear. Click on 'Load Schedule'



To ensure that the file path locations have worked correctly, the events should automatically be listed in the dropdown bar below in numerical / race order.

Click on the downwards arrow and select the first event / race.

The files should be named and should appear in number order, for example:

Senior A – Mixed 20 Heat 1 (9958-8048,1,**1**)

Senior B – Women 20 Heat 1 (9958-8049,1,**2**)

The last digit should be in numerical order starting from 1 and finishing at the final race. This number is known as the race number.

Click OK and the Goto Event Box should vanish.

If nothing appears, retry all steps up to this point.

The event name should appear on the top left hand corner of the screen as the current event with both **a** (armed) and **c** (camera selected) in the event window

From the hardware control screen Menu Bar select FILE In the drop down box select OPTIONS

Under General, type in the venue name in the competition name box. From the hardware

control screen "start selections" Either

1. Create a new event and arm it to receive the next start (selection 1)

or

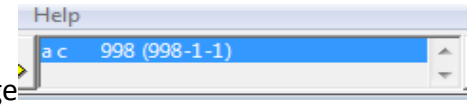
2. Load the next / previous event in the schedule (selection 2,3 or 4) To use this option you must have an event and schedule file. (refer creating an event and schedule file in this manual)

This is achieved by clicking on the appropriate icon.

If selecting option 1 an Untitled race will appear on the screen.
In the Information Zone under the EVENT box Type the date and race No. 27/5/97 R2 and enter.

This information will now appear on all printed reports and images.

Note you must have "a" and "c" proceeding the titled race in the menu bar and also you will have two coloured boxes next to the Information icon.

"a" and the Yellow box stands for timer is armed to receive the next start "c" and the Green box stands for system is ready to capture an image 

If you are using auto capture click on "finish" in the "information zone"
Set capture time (in seconds) at less than the track record and capturing duration at say 4 seconds for greyhounds and 10 seconds for thoroughbreds.

You are now ready for an event.

FinishLynx – Event Pre-Race

Once you have selected and hit the OK button on the Goto Event. FinishLynx should automatically pull through the information for the first races pictured below.

Pic of first race

IMPORTANT: Check that the lanes and Team Names are correct against your race draw. If incorrect, this can cause confusion later down the line.

You are now ready for the first race to start. Do a pre race check of:

- **RadioLynx Radio starter**
- **manual start and**
- **picture capture next.**

PRE RACE CHECK: Check RadioLynx Wireless Start and Picture Capture

The "Start Selection" icon bar gives many options

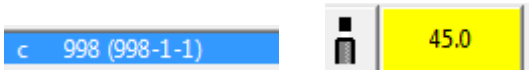
1. **Create a new event and arm it to receive the next start.**
2. **Load the previous event from the schedule and arm it to receive the next start.**
3. **Choose an event in the schedule and arm it to receive the next start.**
4. **Load the next event in the schedule and arm it to receive the next start.**
5. **Create a manual start.**

Turn on 1 x RadioLynx Transmitters

Push the **GREEN On/Off button** for 2 seconds. The display should toggle through some settings and then read **000** when ready. **Check all 3 transmitters display "000".**

Start test event

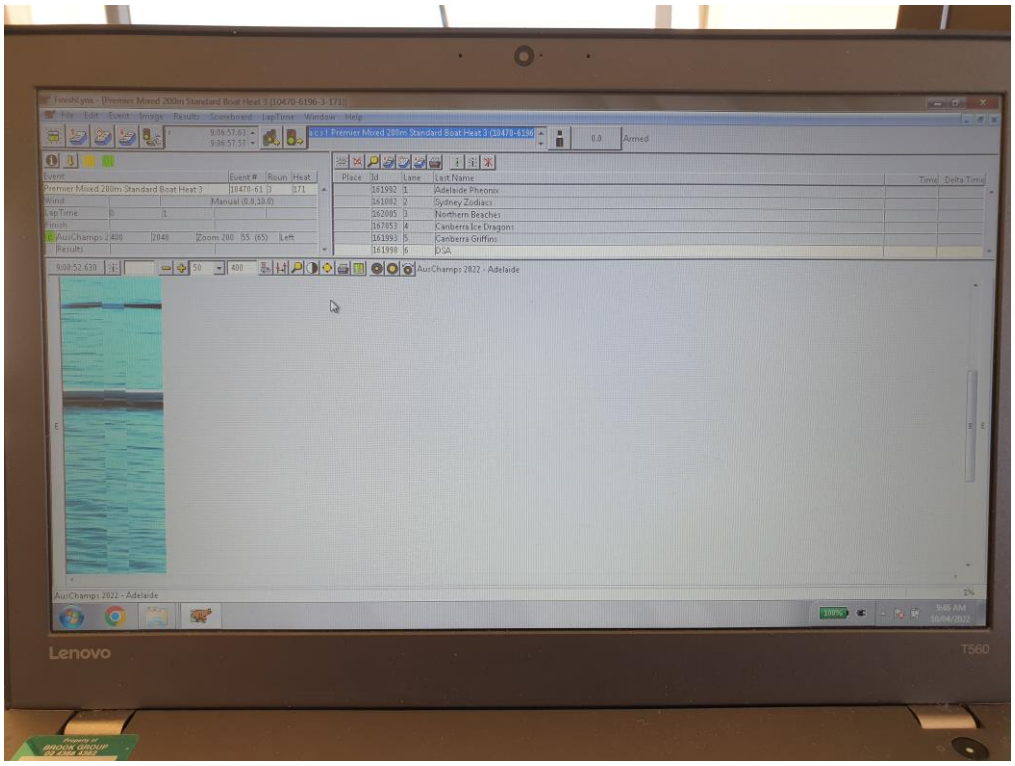
Press **signal button (top left on a RadioLynx transmitter)** A beep should sound and the **"a" will disappear** from the entry in the event window. **The "c" will remain** and the **event time counter (yellow) should increment**



Test Capture Button

Hold red button on the end of the Capture device down for 5 seconds

The bottom half of the screen should display a moving image of the finish line whilst the button is held down and will stop when the button is released.



Manual Race Start.

If using a manual timer button, press at the start of the race to manually activate the timer, press 5.
If unit is connected to auto timing system the timer will start automatically.
In the event of a “false start” click “arm current event to receive the next start” icon.

1. **Create a new event and arm it to receive the next start.**
2. **Load the previous event from the schedule and arm it to receive the next start.**
3. **Choose an event in the schedule and arm it to receive the next start.**
4. **Load the next event in the schedule and arm it to receive the next start.**
5. **Create a manual start.**

Race Capture and Race Finish Evaluation

Once the race has started, and if using RadioLynx, the Camera will automatically provide a time stamp as highlighted in the yellow box.

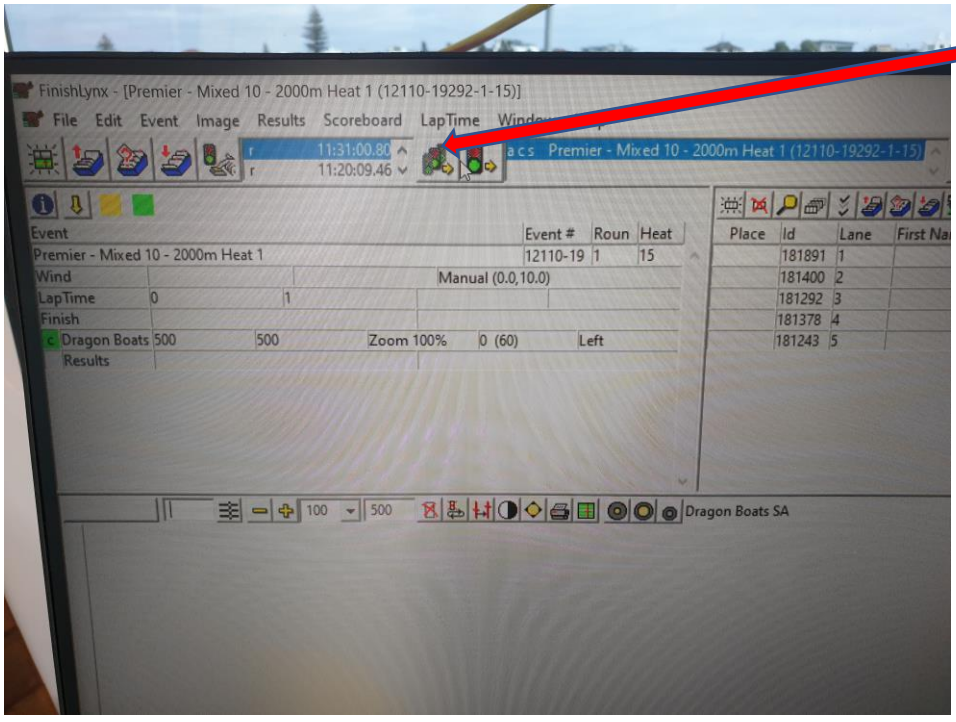
Capturing a Finish image – Using Capture Button.

Capture the event using the Capture Button and analyse the picture and assign a Boat, Identifying by Lane.

As the field approaches the wining line (approx. 3-6 lengths) depress and hold down the capture button until all the field has passed the finish line.
Note capture button may be released and re-depressed if there is a large break in the field. Times and margins will not be affected by the break.

Capturing a Finish image – Manual Method if Capture Button does not work.

If the Capture Button does not work to capture the finish images use the:



Manual Camera Image Capture Icon to be used if Capture Button not working. Press and hold down until all

As the field approaches the wining line (approx. 3-6 lengths) depress and hold down the capture icon on the screen until all the field has passed the finish line.

Generate a result list

Place the mouse cursor on the camera image approx 100cm from the left of the screen and left click the mouse. **A red dotted line should appear**.

Type in the **number 3** followed by then **ENTER** key.

In the top right portion of the screen (results box) should read

Place Lane Affiliation Time Delta Time

1 3

Place	Id	Lane	Affiliation	Time	Delta Time
1		3		5.08	5.08

Place the mouse cursor on the camera image approx 50cm from the left of the screen and left click the mouse. **A red dotted line should appear**.

Type in the **number 5** followed by then **ENTER** key.

Inthe top right portion of the screen (results box) should read

Place	Id	Lane	Affiliation	Time	Delta Time
1		5		4.36	4.36
2		3		5.08	0.72

Evaluate the Finish image.

To evaluate the captured Finish image appearing on the screen, firstly position the hash line on the results zone and centre the cross hair. Depress and hold the left mouse button and drag the mouse to either the left or right (depending on the direction the image appears from) to reveal the field. Moving the mouse up or down will also centre the image on the screen. At the first boat position the hash line on the nose and release the left mouse button. Fine adjustments may be made using the arrow keys of the keyboard.

Enter the boat number and press enter. (ensure num. lock is on.) Continue this process for the remainder of the field. Note enter runners in correct finish order. In the event of 2 or more close finishers the computer will prompt “another result has a time which is close to this one” enter OK.

For a dead heat position the hash line as above and enter the first boat number and press enter. Without moving the hash line, using the mouse double click the left mouse button in the result ID box, and enter the second boat number and press enter. In the results screen they will show the same placing number.

AFTER THE LAST RACE

Once all evaluation has been completed and details saved you can exit the system by clicking the top x on your screen.

- This will return you to the main menu.
- Click on the start button (bottom left)
- Click on shut down
- Click on shut down computer.
- Click on yes.
- Turn camera off.
- Disconnect all leads to the camera and pack away.

If equipment is to be stored, repack all components into the travel case, ensuring all items on the check lists are present.

Please Note: *Do not turn off the power to the U.P.S. or the U.P.S. itself.*

Opening a File

The first step to opening an existing image is to locate the Menu Bar. This extends across the top of the entire screen.

Each of the words across the top of the screen will become a pull down menu of options relating to the topic word that shows on the Menu Bar. Move the mouse over any of the words on the menu bar and click the mouse button.

The menu for that group of options will appear. Click anywhere outside the menu to make it go away.

If you click on File in the menu bar you will see this menu:

To open an existing image, you should click on the word Open or use the keystroke combination Ctrl +O.

Most often used menu items are:-

FILE / OPEN :-	Opens previously saved races.
FILE / SAVE :-	Saves race information to a file or saves changes to a modified result.
IMAGE / ADJUSTMENT :-	Allows adjustments to captured pictures after photo has been taken i.e. brightness, contrast etc. In most cases the GAMMA should only be adjusted.
IMAGE / EXPORT BITMAP :-	Writes a JPEG file to disk of the Selected area for export to a third party graphics program or printer.
IMAGE / OVERLAY ;-	Places selected overlays on screen. I.e. (photo for win etc.)

Trouble Shooting

NO “a” OR “ALL START SENSORS FAILED TO ARM”

Check all connections at the camera and the computer.

In the hardware control screen information zone highlight camera then click on the “i” information icon to reveal the camera settings.

Gun sensor should be set on ( ) norm. open
() norm. closed

Check switches and connections on all start boxes (not just the box you are currently using)

NO “c”
In the hardware control screen check capture says “yes” (this toggles between yes and no)

Capture button is not connected to computer

Capture button icon is not turned off (located next to timer on the hardware control screen)

CAMERA FOCUS

If the track image or captured image does not appear sharp on the screen even though the image through the lens viewer is focused

Remove the lens and check that the through the lens mirror is sitting properly and not loose. (if not re seat and advise)

Manually focus lens by having a second person adjust the focus on the lens while the image on the screen is viewed until the image is sharp.

If no camera image appears **CHECK**

(a) lens cap has been removed

(b) view window switch is **OPEN**

(c) the lights at the back of the camera. The boot light should be green and the error light should be off.

(d) that the Regatta Control level Lynx Computer is powered off

Shutdown the camera and the Lynx computer.

Restart the camera.

Wait for the yellow light to flash slowly, the reboot the computer and restart Lynx and repeat the test

1.32 Click GREEN dot to stop camera

1.33 Check Camera is in focus and focus if necessary (at the camera)

Note that the image seen in the viewer is upside down

Turn the viewer switch (top of camera behind the lens) to **CLOSED**

Look through the **view finder** (left side of camera behind the lens)

You should see to **finish line marker clearly (on the wall across the course0**

IF NOT

(a) adjust the camera up and down to get the marker (flag pole at Ramsey) in the viewer

(b) check the F adjustment is set to F22

(c) Rotate the front section of the lens until the marker (flag pole at Ramsey) is in focus

Ramsey Course: If the lane 4 Large Cube is on the course check that the camera sees it between finish buoys 3 and 4 and that it has a **clear image**.

Turn the viewer switch (top of camera behind the lens) to **OPEN**

POWER FAILURE PROCEDURE

Each system incorporates an uninterrupted power supply unit. This unit will provide temporary power during power failures.

The only equipment to be connected to the uninterrupted power supply unit is the FinishLynx camera, computer, computer screen and the scan converter.

The printer and back up equipment are not to be connected to the uninterrupted power supply unit.

Please note that the photo finish uninterrupted power supply unit is **not** to be turned off between race meetings.

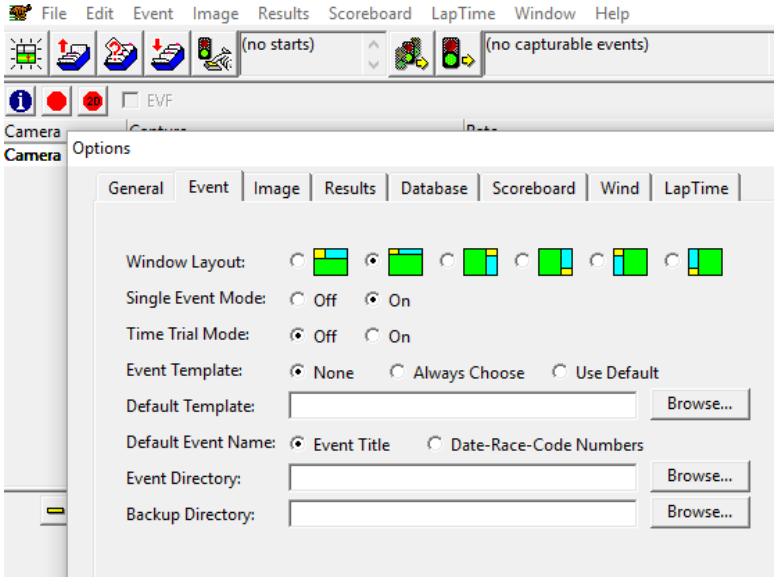
A fully charged uninterrupted power supply unit in good condition should produce 15 to 20 minutes of power for the system.

IN THE EVENT OF A POWER FAILURE WITHIN 5 MINUTES OF A PROGRAMMED RACE START THE FOLLOWING PROCEDURE IS TO BE ADOPTED.

- Power down all components of the system.
- Do not turn off the uninterrupted power supply unit.
- When 5 minutes from race time follow the procedure as detailed above.
- The judge / operator is to bring up the next race and ready for capture.
- Turn off the monitor (this unit has a large power drain)
- Capture the race as usual.
- After you have captured the race hit ” ctrl s “ (on the keyboard) and then “ enter” to save the race.
- Turn on the monitor to view the captured image, evaluate as normal (if enough power is left to run)
- In the event of not enough power to run the screen wait for the power to restore, restart the system and load the saved race and evaluate as normal.

Standard settings for DBSA

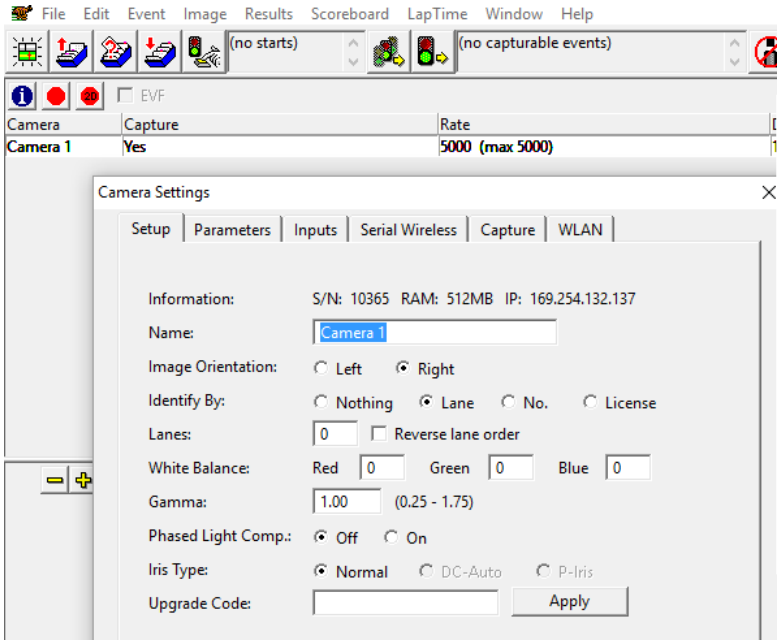
Set up for Standard Races



File/ Options:

Under Event Tab

- **Single Event Mode ON**
- **Time Trial Mode OFF**

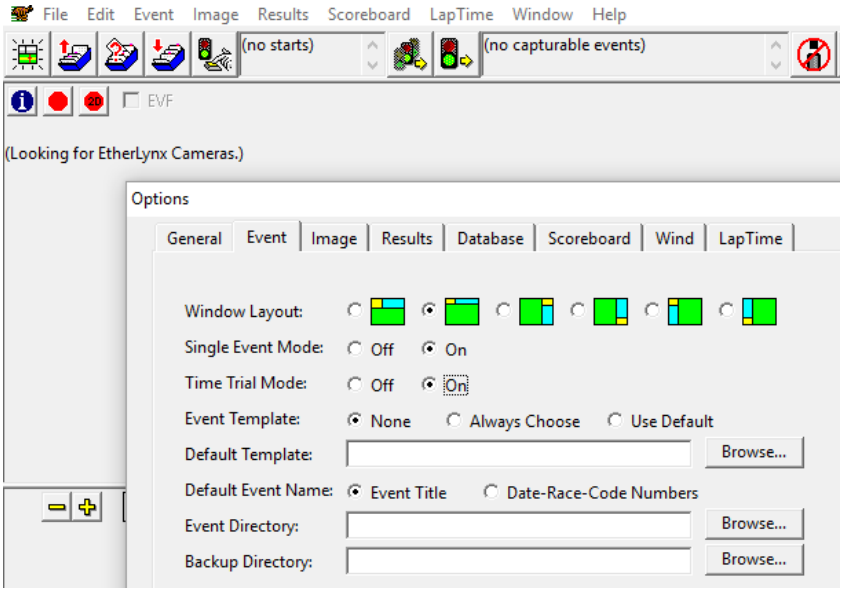


Camera settings:

Under Event Tab

- **Identify by Lane**
- **Lanes 0**

2km Racing



File/ Options:-

Under Event

- **Single Event Mode ON**
- **Time Trial Mode ON**

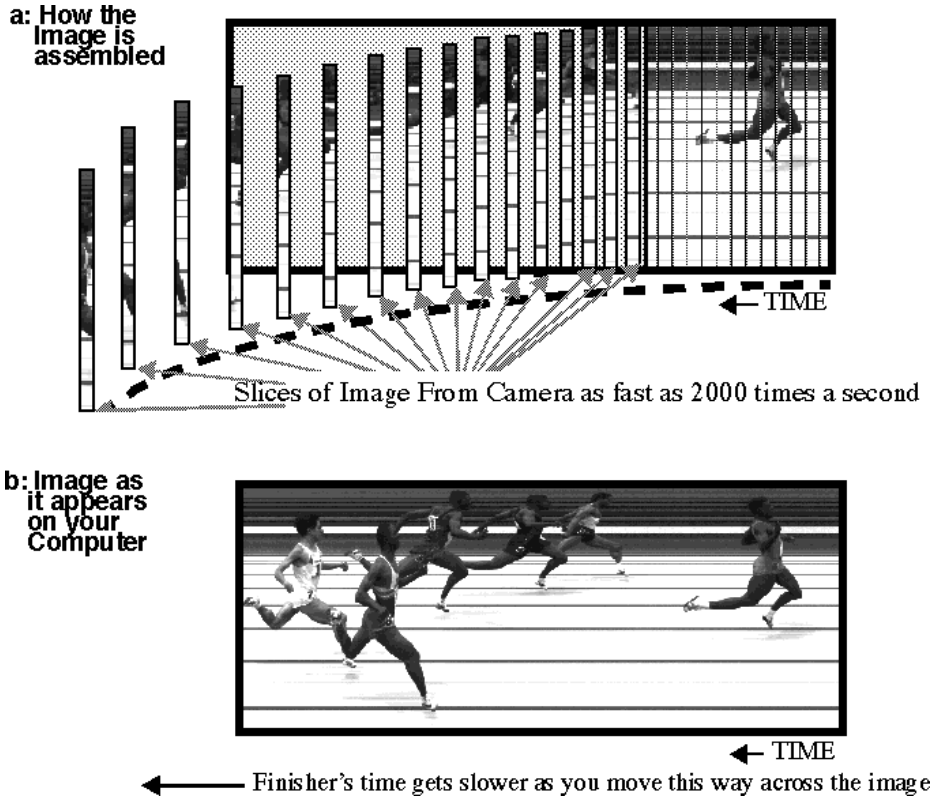
How Finish Lynx Camera Works

True line-scan photo-finish systems (video-based systems are not included in this category) are based on cameras that take lines of image rather than the usual
2-dimensional frame picture taken by a 35mm camera or instamatic.

The "line of image" that is recorded is a picture of the finish line and nothing else.

It is, if you like, the furthest it is possible to get away from a "panorama" view. These images of the finish line can be taken thousands of times a second and displayed on the screen side by side. A FinishLynx picture is actually comprised of thousands of incredibly thin individual images of the finish line - and the activity that was taking place at that split second - placed one next to another.

FIGURE 1. Simulation of How a FinishLynx Image is Assembled



The master copy of this document is stored on xxxxx

A copy will be stored on the DBSA Regatta Laptop on the Desktop and as;

Printed Pdf Copies will be stored in the Storage Cases with the Camera and in the desk draw in the DBSA Caravan.

References:

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