PACER

*P*articipant *A*ctivity *C*ontrol for *E*vents and *R*esults

An electronic events management system for the LDWA

User Guide (2nd edition)

December 2016

Minor revisions added June 2018

Contents

PACER ver 2: What's new?

PACER ver 1 was launched in August 2016 and in the following months was extensively tested in the field. As a result of this real-use testing, several changes have been made. This user guide has been updated to reflect these changes, but in summary they are as follows:

- An event configuration can be duplicated allowing it to be used the following year
- An option to time events to the nearest second has been added
- An option to view Retirals has been added
- An entry in the Notes field is now flagged with an asterisk against the entrants name
- The certificates screen flags checkpoints 'missed' by an entrant allowing resolution prior to a certificate is issued
- A new screen layout is available on the "cutdown checkpoint" version of PACER, to enable it to be used more easily on mobile devices
- Some warning messages have been removed, making it easier for participants to scan themselves into checkpoints
- Live and historic event results generated by PACER are available now from a menu option on the LDWA website
- Pre-configured tally cards (otherwise known as Event Entry Cards)and instructions for using them on major events like the 100 have been uploaded to the PACER admin website
- New advice on the practicalities of running a checkpoint in the field has been included in this user guide
- Certificates can be printed now via PDF rather than direct from the browser via HTML, if preferred
- Various bugs and inconsistencies have been rectified

It is not planned to launch a further major upgrade to PACER for the foreseeable future, but if you come across bugs or other apparent defects in the system whilst testing or using it, please email internet@ldwa.org.uk so that they can be assessed and logged.

Background

Why PACER was developed

LDWA Local Groups run as many as 100 challenge events every year. Additionally national LDWA organises an annual "100 mile" challenge event every May. These challenges are a core part of the LDWA programme, and require significant effort on the part of the volunteer organisers to ensure that they pass off smoothly.

One aspect of challenge event management which requires particular care is the organisation and tracking of participants. Over the years, Local Groups have developed a number of different ways of doing this – some rely on pen-and-paper systems, whereas others have built electronic systems for recording participant details and whereabouts.

Some time ago, a decision was taken to develop an electronic "Events Management System" which could be used by all Groups, at their own discretion. The system would simplify the management of events, and allow a better track to be kept of participants.

Early versions of this system were launched and tested at a limited number of selected challenge events around the country. This early system went under the generic name of "Event Management System" (or EMS).

"PACER" is an evolution of EMS, and is now being launched in its second, updated version, nationally, for use by Local Groups throughout the LDWA. It is a web-based system and runs on the LDWA National website.

The reason why LDWA elected to develop its own events management system was because it wanted to allow all Local Groups to use a standard system, and share experience with it. This would permit an effective and relevant development programme to be implemented, and make it easier for Groups to share best practice. It was envisaged that by focusing on a single system, Groups would gain expertise with it, and avoid having repeatedly to learn new systems.

PACER benefits

PACER is designed to enhance the management of events by:

- Enabling participant details to be held centrally, electronically
- Allowing management of these electronically held participant details via a web browser interface
- Facilitating preparation of event entry cards for individual event entrants
- Avoiding the need to prepare paper records, or to collect data in real time on paper
- Smoothing the passage of entrants through checkpoints by electronic scanning of event entry cards
- Permitting "real time" tracking of participants through checkpoints, so that event organisers can tell at any time where participants are and can check the overall status of the event
- Creating a web-portal through which other interested parties (friends, relatives, etc.) can view the progress of participants
- Speeding up the printing of certificates and statistics at the end of the event.

Data protection

PACER works within the LDWA website environment and data contained within it is as protected as any other personal data stored in the website is. All access to the LDWA website used by PACER is via HTTPS connections (i.e. encrypted).

A special module of PACER has been created for use on a spreadsheet at offline checkpoints. This “Offline PACER” is not encrypted but only includes very limited personal information, including name, participant number, limited text based notes and time at which the participant passed through the checkpoint.

Event participants can request “anonymity” but this only extends to results generated by PACER and published on the national LDWA website. The details (notably name) of “Anonymised” participants are visible to anyone logged on to “online” PACER or using the Excel-based offline module.

Technical notes

Network connection

For the full benefits of PACER to be realised, the event HQ and the various checkpoints along the route need to have internet access. This will generally mean having a WiFi connection, or access to the 3G / 4G mobile data network. A 2G (GPRS) or 2.5G (EDGE) mobile network connection will not be sufficient to run all the functionality of PACER.

It is however recognised that at some checkpoints, network access will be unreliable or unavailable. This user guide explains how to deal with this situation. However, the HQ will need to be online – it is not possible to use PACER if the HQ does not have reliable internet access of some description.

Data requirement

Roughly speaking, based on the space used by each PACER screen (with no initial cached files, the worst case scenario) and an estimated number of iterations for a minimum use (i.e. entering times only) shows only about 1.5Mb of use per checkpoint / HQ for the whole event. This is made up as follows:

In practice users will probably end up using quite a bit more as they switch between screens, but probably considerably less than the 1Gb "bundle" included in most mobile broadband packages.

***Note**: if you are achieving network connectivity by using a wifi hotspot created from a mobile phone, care needs to be taken to limit who can access the hotspot and how it can be used. For example, Windows computers are especially prone to doing large software updates when they "think" they are connected to an unmetered wifi connection. This can potentially result in the owner of the mobile phone being that is being used to generate the hotspot incurring a large mobile data bill.*

It is however recommend that if using a limited bandwidth connection the "Results" screen is not over-used as it is quite large (up to nearly 1Mb depending on the size of the event).

The meaning of some of these terms will become clearer later in the document.

Electronic scanning - RFID and barcode

Participant tracking is normally achieved by the use of electronically-scannable "event entry cards" which are carried by all event participants and which contain an encoded ScanID which is unique to each participant.

At each checkpoint and the start and finish, the ScanID is read electronically (or manually) off the card into PACER along with a time-stamp. A handheld device (see later) is used for electronic reading. Because of the way PACER has been pre-configured with participant data, it can automatically cross-refer the scan ID to the participant data (e.g. name) and thus attach the time stamp for the relevant checkpoint to the participant data and store it in the electronic system.

It is perfectly possible (but less convenient) to gain some of the benefits of PACER without electronically scanning event cards. This would be done by simply typing the participant number data directly into PACER manually. The ways in which electronic scanning and manual data entry are done is explained later in this document.

These scannable cards can take one of two forms. They are either plastic "RFID" (for Radio Frequency IDentification) cards, which are plastic smart cards the size of a credit

card with an embedded microchip containing the ScanID. Or they are barcodes which can be printed onto "normal" event entry cards or onto adhesive labels which are fixed onto suitable cards (or indeed onto RFID cards).

RFID cards are read contactlessly using small units which plug into the USB port of a Windows or OSX laptop or Android device (but not Apple iPads or iPhones). Barcodes work in exactly the same way – they are scanned by handheld devices which also plug into a USB port or connect via Bluetooth. Both RFID readers and barcode scanners cost about £15-£30 and RFID cards cost about 20p each (but can be reused indefinitely). Note that there are a variety of different sorts of RFID cards – normally the 125KHz type are used. Barcode scanners are typically what are used in supermarket checkouts; RFID code scanners are used in contactless credit card payment systems, and on London Underground for reading Oyster cards.

PACER can use either RFID cards or barcodes, depending on a Group's preference. Or if barcodes are printed onto labels which are stuck onto RFID cards, then both barcode scanners and RFID card readers can be used on the same event. Whether to use RFID or barcode is a matter of local preference. Barcodes are easier to produce and require less setting up; RFID cards are more robust, quicker to read, and are easier to read if wet. Barcodes can be read with Bluetooth scanners paired to most PC and mobile devices (including iPads and iPhones); to date, no way of connecting RFID card readers to Apple mobile devices has been found.

If electronic scanning is **not** being used, then at the start, finish and intermediate checkpoints, the participant's number (see later) must be manually typed into PACER. This is more error-prone and slower, but will work.

Power supply

Many checkpoints will be in remote locations where, as well as network access, power supplies could be problematic. Event organisers should make sure that they have adequate power to enable scanning to continue for as long as a checkpoint is open – which could be as long as 24 hours.

It is possible to run PACER from an Android tablet (or even an Android phone), provided the device has a USB socket into which the RFID card reader or barcode scanner can be plugged (or with a big enough screen to allow the ScanID to be manually typed in). If the device only has a micro-USB socket, then adaptors from micro to standard USB (to allow the scanner to be plugged in) can be bought cheaply online, e.g. from Amazon. Apple mobile devices cannot be used with scanners (though can be used for manual data entry) as they do not support USB.

Note: *research conducted since the launch of PACER 1 has demonstrated that it is possible to connect barcode scanners to Apple mobile devices using Bluetooth. The way to do this is explained later in this User Guide. This significantly extends the possibilities for using PACER in remote locations where reliable power supplies are not available, or where network access may be more difficult to achieve.*

Such tablets typically have long battery lives and can also be recharged from relatively cheap external battery packs. If using laptops, which may only have battery lives of a few hours, it might be necessary either to use car batteries with an inverter (bought for example from Halfords) to keep them charged, or to establish a system for rotating laptops out so they can be taken offsite for recharging.

PACER status and future development

This user guide refers to version 2 of PACER. It has been tested extensively by Thames Valley, Surrey, London and Calderdale Groups and successfully used in "real" challenge

events. It is robust enough for general use now. However it may be that the system cannot cope with all circumstances in all events, and it may also be that there are desirable functions that have been omitted. Further, despite exhaustive testing, it is possible that bugs in the software could still remain.

For these reasons, LDWA is keen to receive feedback on the system from all Groups that choose to use it. It is however not expected that any further revisions to the software, except if mission-critical errors are encountered, will be in the foreseeable future.

Further, as PACER is still a relatively new tool, event managers may wish to run paper, or other, records in parallel, until they are comfortable with system functionality and with its performance and robustness.

In the first instance, feedback or queries about the system should be sent to: internet@ldwa.org.uk

What this user guide does

This user guide explains how to:

1) Set up an event in PACER
2) Load participant details into PACER
3) Prepare participant event entry cards
4) Configure “offline” checkpoints
5) Manage participants at an “online” checkpoint
6) Manage participants at an “offline” checkpoint
7) Track participants as they walk (admin and public)
8) Produce certificates and other statistics at the end of the event

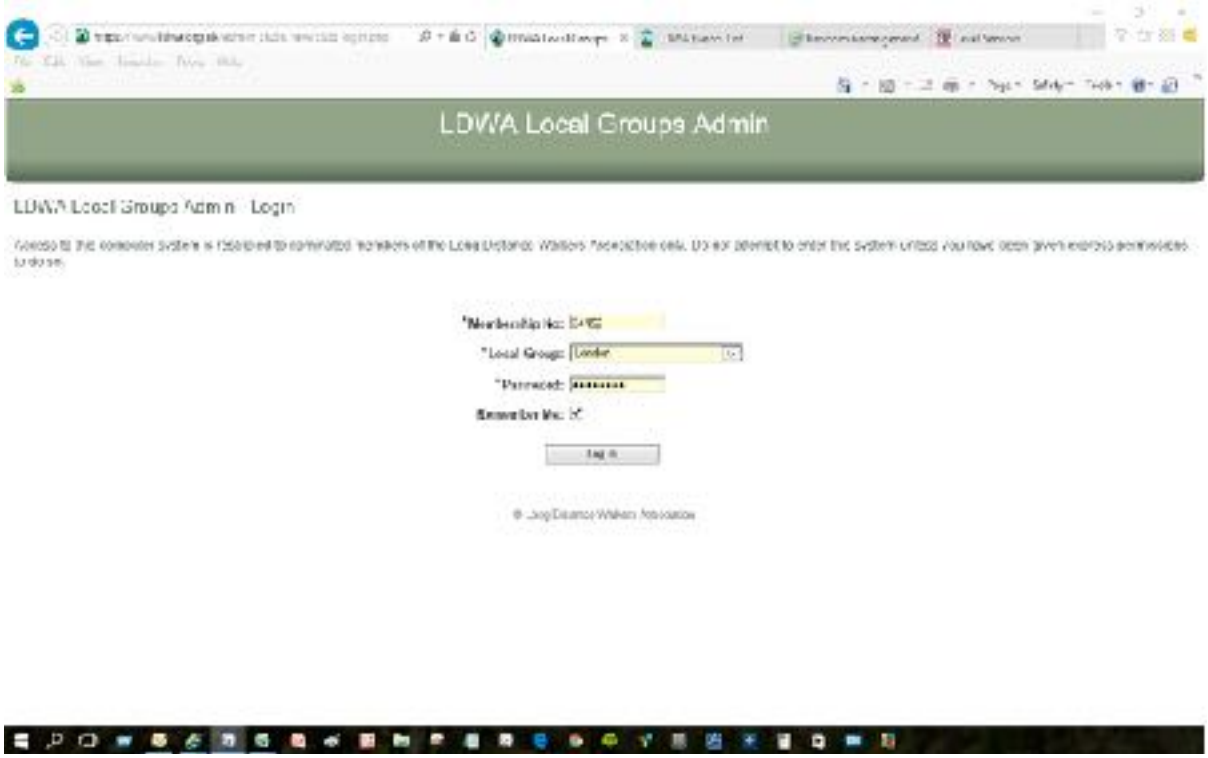
PACER is, however, designed to be simple to set up and use, so it should be possible to start using it straightaway, without spending hours poring over complicated manuals. This user guide covers most of the common things that Groups are likely to do when setting up and running a normal challenge event. But not every feature of the system is explained. However, the system contains contextual help text at all the relevant points, which explains what to do in most conceivable circumstances.

There is no compulsion for Groups to use PACER. It is recognised that many will have invested time and effort in building or acquiring their own systems for managing challenge events and may prefer to continue using them.

1) Setting up an event in "PACER"

Logging in

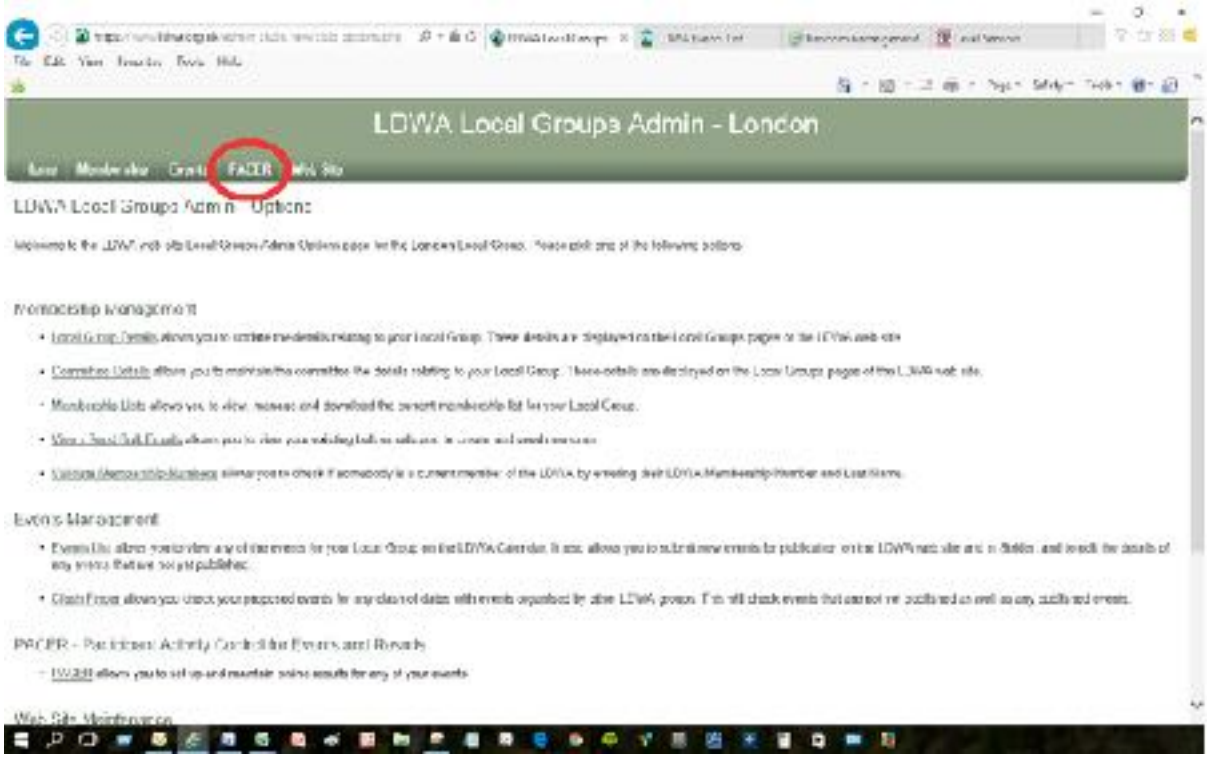
To set up a new event, first log on to the LDWA Local groups admin page at https://www.ldwa.org.uk/group-admin



The screenshot shows a typical login screen. The "*Membership No*" is your normal LDWA membership number, the "*Local Group*" is the Local Group which is holding the event you're organising (select from the drop-down list, which also includes the current and future "100" national events as "pseudo" Local Groups), the "*Password*" is your normal LDWA password.

Note – for this to work, you have to be granted appropriate admin access to the relevant Group – to arrange this, please email:
internet@ldwa.org.uk

You will then see a screen similar to that below. You may see fewer or more options along the top of the screen, depending on the levels of access you have been granted. Click the option that says “PACER”:



Creating the route(s) and checkpoints

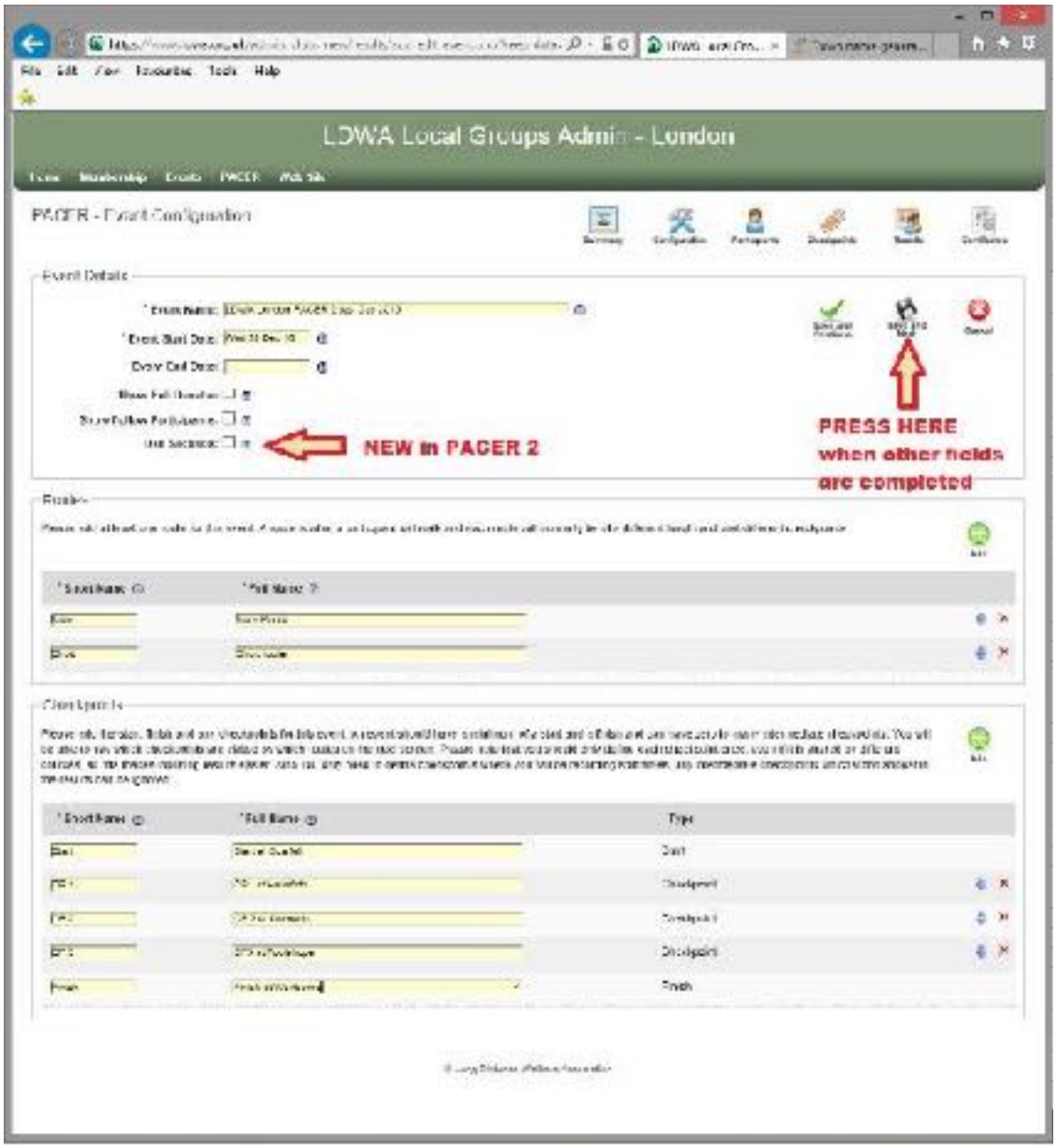
The screen you now see is the main screen for creating and managing events. If you have not added an event in PACER before, the event list will be blank. You will also see from the hyperlinked text (underlined) in the introductory paragraph that this is where you can download further copies of this user guide from, and also where you can download “Offline PACER” (see later) and *the tally card [a.k.a. Event Entry Card] templates (see earlier and highlighted in screenshot)*.

To add a new event, press the green “+” icon (“*Add*”) at the top right.

***NOTE**: In the events list that appears, you will see that each has a red cross at the right hand side*

You can use this to delete an event you no longer want, but to make it harder accidentally to delete an important event (like a historically significant challenge event), PACER2 will not allow you to delete it without first deleting all the participants in it.

Fill in the event configuration screen that appears with the details of your event, using the screenshot below, of a "dummy" event, as your guide.
***NOTE**: PACER 2 has a new field "USE SECONDS" - see later for description of its use)*



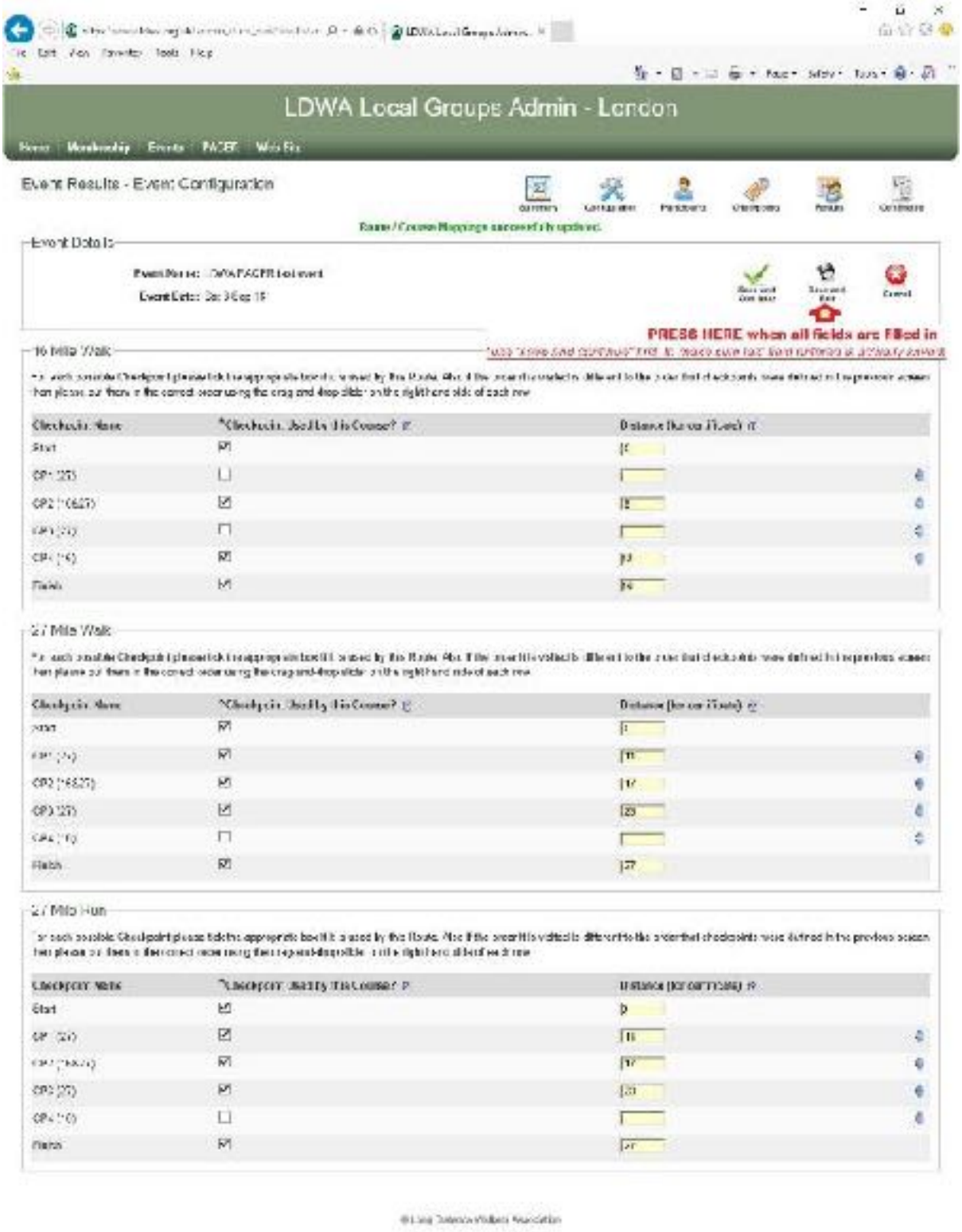
Note:

- On the screen, you will see that some fields are marked with "*". These are mandatory
- You will also see small "?" marks next to each field. If you click on these, you get more information about the field. You can also get more information about some fields by "hovering" your mouse over them
- If your event runs over several days, you MUST enter the event start date and end date. Otherwise your participants' elapsed times in the results screens (see later) will not display correctly. If a multi-day event is entered, some of the screens discussed in "data entry" will be a little different as they will include a "day" field, as well as a "time" field.
- To add more routes and / or more checkpoints, press the green "+" icon to the right of the appropriate section of the screen
- ***NOTE**: A new option "Use Seconds" has been added to PACER 2. Ticking this box will mean that participant results will be captured to the nearest second (the default is to the nearest minute). If this option is selected here, it must also be selected in "offline PACER" (see later). **Use this option with care**. Measuring to the nearest second will mean that all participants can be correctly ranked in order of total elapsed time, but there can almost never be "ties". This may not desirable if groups are walking together and want to be recorded as all finishing together (although times can be manually adjusted if essential). If you start timing your event in seconds, do not switch back to minutes midway, or vice versa, or you are likely to get unpredictable results.*
- If you want the results of your event to be visible on the *PUBLIC* LDWA website (i.e. visible to the whole world), tick the "Show Full Results" box. If you want the results to remain private, don't tick it. See later in this user guide for details of how to view results and track participants on the public internet
- Similarly, tick "Show Follow Participants" if you want participants to be visible on the public internet, so that friends and family (and anyone else) can track them. To keep private, don't tick it.
- ***NOTE**: if setting up test events, it's OK to use these "public" boxes so you can see how they work, but please "un-tick" once you have finished testing, so the public website isn't cluttered up with dummy events*
- Later on in this guide, the protocols in respect of "anonymous" entrants are explained. If either of the two boxes above are ticked, participants that have requested anonymity will simply be shown as "Anon NN" on these public screens (where NN is the participant number, as explained later). Their full details will, however, continue to be visible within PACER.
- If you are uploading entrant data from a CSV file exported from an online entry system (see later) it is ESSENTIAL that the "Short Name" you give to your route(s) is *EXACTLY* the same as the name given to these routes in the online entry system (or else the CSV upload won't work properly). The Full Name of the route can be anything you like
- The red "X"s at the right of the screen will delete the appropriate checkpoint / route and the grey "up and down" arrows can be used to change their order by dragging them to the correct position.
- ***NOTE: A common mistake** when filling this (and the next) screen is to type in a field description and then press "Save and Next" to move to the next step in setting up. This can sometimes mean that the last field you entered isn't "remembered". To avoid this happening, press "Save and Continue" and check that everything is as you want it to be, before pressing "Save and Next" (though you can always go back to the Configuration screen later, to correct any errors that may have been made)*

When you have added all the details and are satisfied that they are right, press the "Save and Next" button in the middle right of the screen. You can go back and edit details later on if you make a mistake.

Assigning the checkpoints to the routes

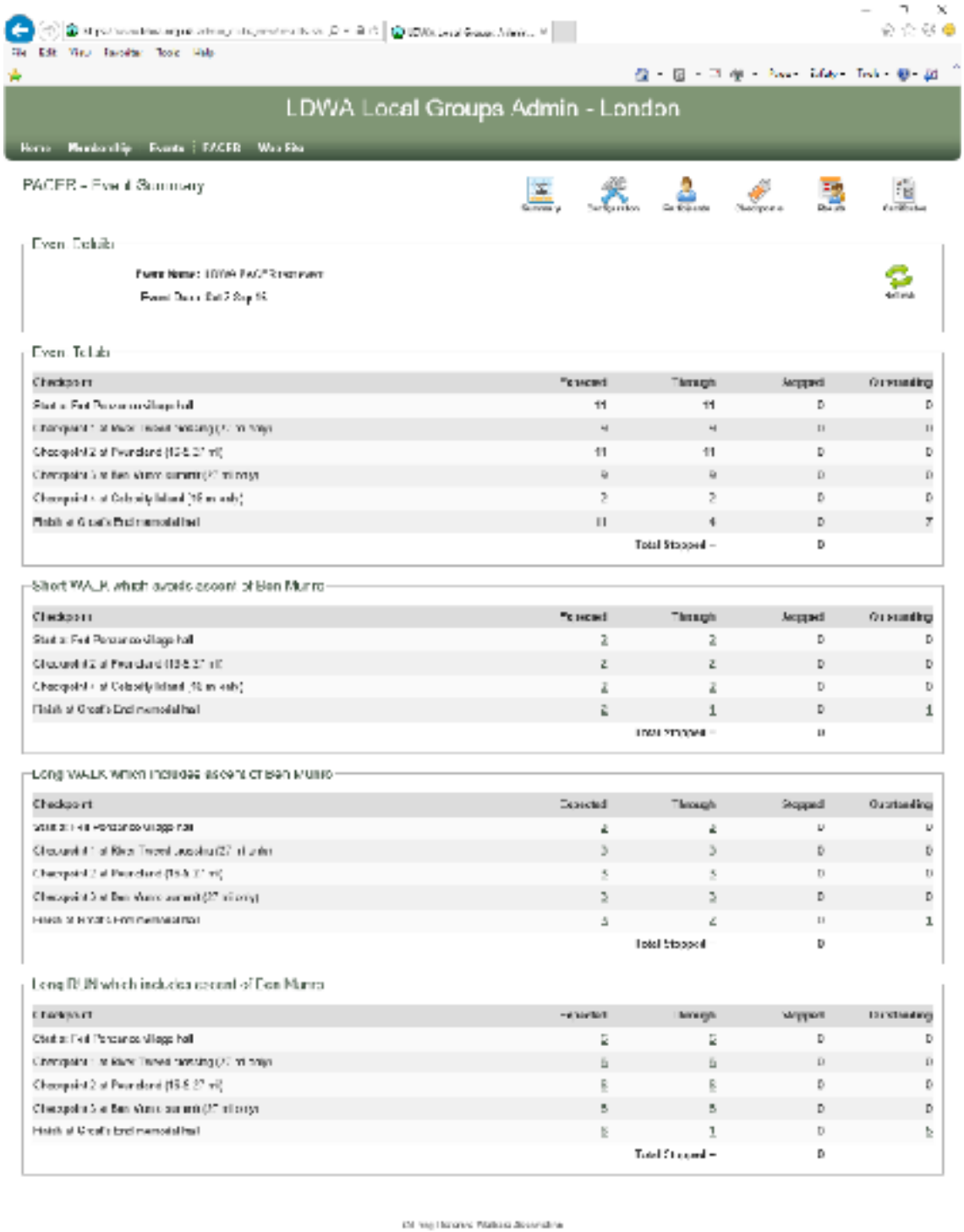
The screen that appears next is where you assign the different checkpoints to the different routes. Filling it is fairly self-explanatory. When you have finished, it should look like the attached screenshot:



Take care to assign the correct checkpoints to the correct route. Some checkpoints may be on all routes, others may only be on one route. The screenshot shows the dummy event which has three routes, with different checkpoints on the longer and shorter ones. Note that it is ESSENTIAL that you press “Save and Continue” or “Save and Exit” after you have assigned checkpoints to routes, or else PACER will not “remember” the assignations

and you are likely to find that each route only has a start and a finish with no checkpoints. (See also **NOTE** the point also made on the previous page about using “Save and Continue” first, to ensure that all fields have been correctly entered and saved).

When you have finished, press the “Save and Exit” button. You will be returned to an “Event Summary” screen which looks like the attached:



Once the event starts to run, the cells which are initially filled with zeroes will start to populate with data (as shown in this screenshot, which was taken later in the event).

Making changes to the event setup

If you want to change anything, click on the “configuration” icon (which looks like a small hammer and spanner) towards the top of the screen

Remember to press “Save and Continue”, “Save and Next” or “Save and Exit” if you change anything. You can return to the Event Summary screen at any time by pressing the icon that looks like a Greek “Sigma” key towards the top of the screen:

Your event is set up now. The next step is to add the participants.

2) Loading participant details into PACER

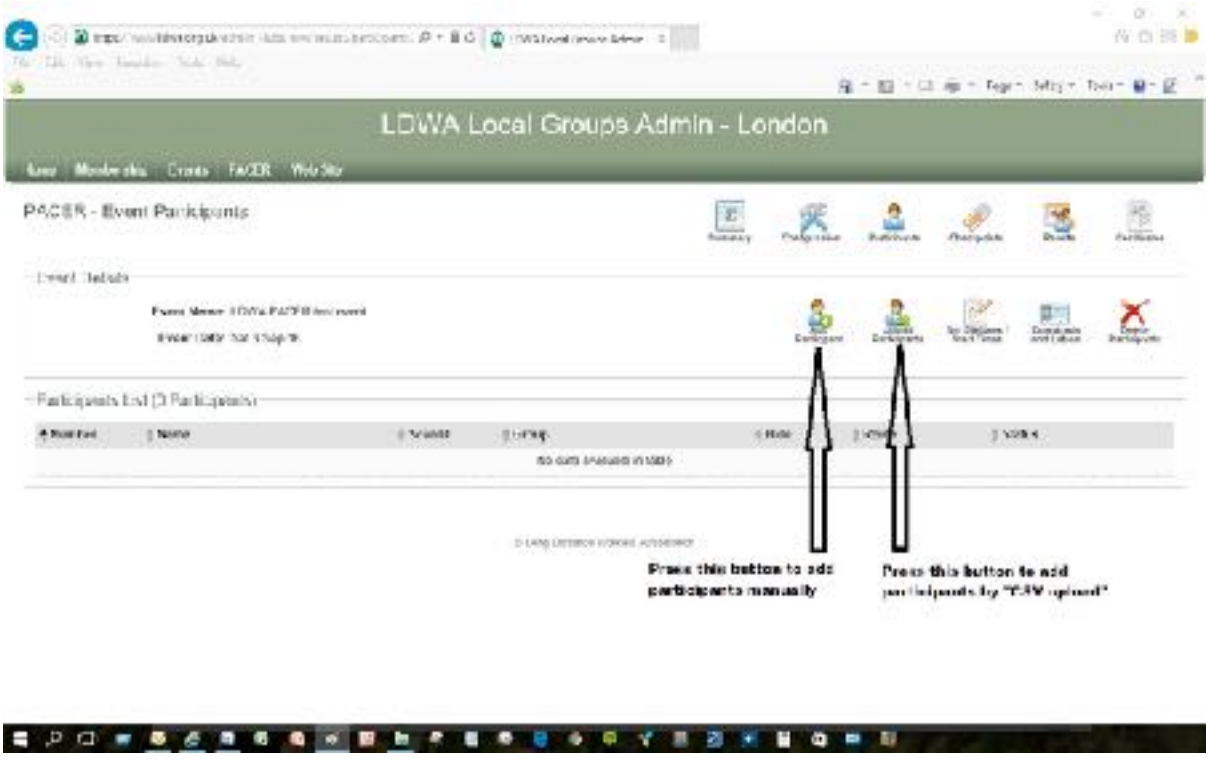
General – choosing "manual" or "CSV" participant loading

There are two ways of loading participants into PACER – manually and by "CSV upload".

***NOTE**: All the participant names shown in the screenshots are totally fictitious and were generated through the http://random-name-generator.info/ website*

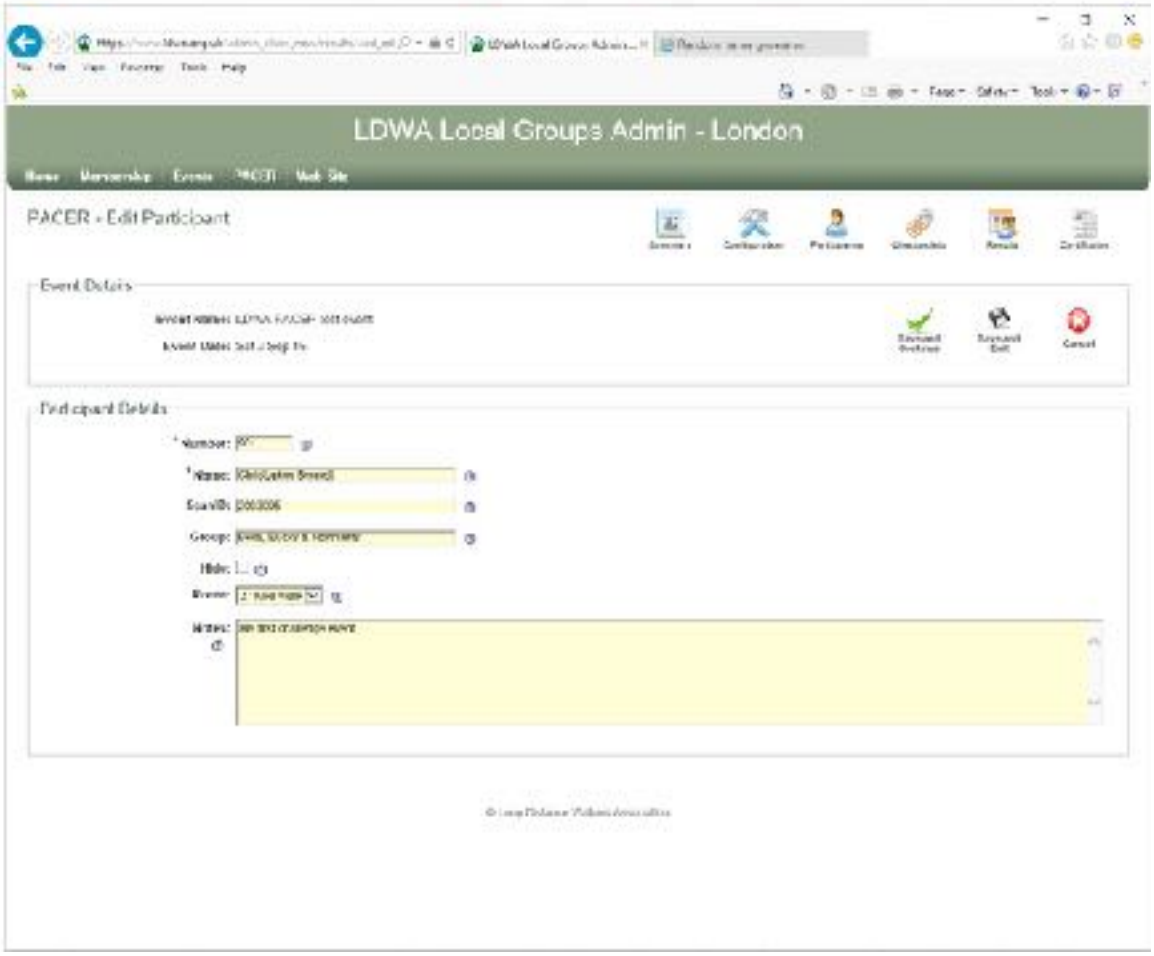
To start loading data by either method, from the Event Summary screen, press the "Participants" button towards the top right:

From the screen that appears, select the appropriate button (see screenshot) either manually to load data or to do it using a CSV file. You will use the "manual" option if your participants enter the event by filling in paper application forms. You will use the "CSV" route if your participants enter via an electronic online entry system. It is possible to use both in one event – e.g. to upload the bulk of your participants via CSV, then add in extra ones manually if they apply via paper forms.



Manual data loading

Fill out the form that appears when you press the "Add Participant" button, using the screenshot below as a guide, and then press "save and exit" after completing each participant. A number of important points about this screen are listed below.



Explanation of Participant Number, ScanID and anonymisation principles (for both manual and CSV entry)

<u>This section applies particularly if you are entering participant data manually, BUT PLEASE READ IT EVEN IF YOU ARE USING THE CSV APPROACH AS IT CONTAINS USEFUL INFORMATION ABOUT GENERAL PRINCIPLES OF PACER</u>:

- The "Number" is a unique value which will be the participant's entry number. It can be any value you like but each entrant MUST have a number and each number must be DIFFERENT
- If you are adding participants manually AND adding participants by the CSV route, then it is wise to start numbering the "manual" participants at a number higher than any number likely to be generated by your electronic online event registration system.
  Normally such systems assign numbers in numeric order according to the order in which people register. So if you are expecting 300 online entrants, they will probably be numbered 1 to 300, so you might start numbering your "manual" entrants at, say, 400. But all online registration systems are different – check what the one you are using actually does.
- The "ScanID" is possibly the most important field to get right. This is the "key" that links the electronic data and time that is scanned at the checkpoints back to

the participant's name and other details held in PACER.
If you are using barcode scanners, the ScanID can be the same as the "Number" because at a later stage in the setup process you will be printing labels to go on the participants' event entry cards and the ScanID number will be automatically converted into a barcode and printed out. If "ScanID" is left blank, no barcode can be printed
If you are using RFID card readers, the ScanID must be the same as number printed on the RFID card that is going to become that participant's event-entry card (see screenshot below for how to identify the RFID card number; there is also more on this later). It will be DIFFERENT to the "Number" and it is permanently programmed into the card when you get it and cannot be changed. It is usually a semi-random 7 or 8 digit number.
If you are using both barcode scanners and RFID card readers, the number should be the RFID card number as above
If you are not using scanners it is possible to leave this blank because when PACER is being used to add data entry times, screens have been provided which allow you to type in the "Number" (rather than ScanID) if scanners are not available. The "Number" data will be used in the same way as the ScanID data, to link the time to the participant data.

- The reason why a ScanID is needed is because RFID cards are pre-programmed with a 7 or 8-digit number that cannot be changed. So that number needs to be attached to the participant using that card. Bar codes can be printed with any number you like, which is why if ONLY using barcodes, the ScanID could be the same as the "Number".
- Type the number into the ScanID field, either by duplicating the "Number" field (if using barcode readers), or by copying the number printed on the relevant RFID card. You can also use a scanner to read RFID card numbers into this field automatically. If you do this, you are likely to see that the scanned number initially contains a number of "leading zeroes" before the seven or eight digit RFID scanID. These will be stripped out when "save and continue" or "save and exit" are clicked (**Note:** Some RFID scanIDs may be less than seven digits – this is OK).

An entry in the 'Notes' field will be flagged with an asterisk against the entrant's name on all screens on which entrants names are listed (Results, Participants, Retirals).

Anonymising entrants

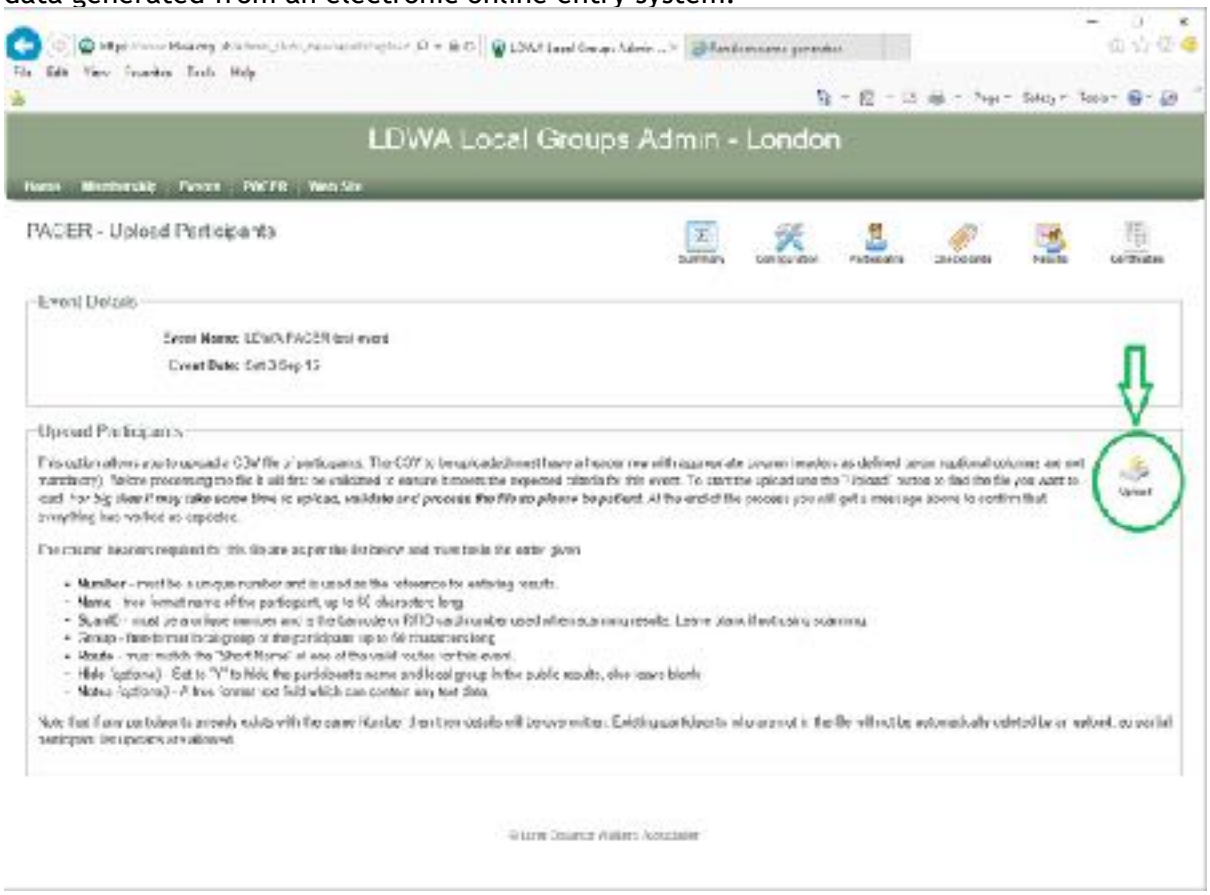
Ticking the "Hide" box will mean that the participant's name and group are anonymised on the public web-site (if the appropriate boxes were ticked to make results public when the event was set up in the previous section). The participant will simply be re-named "Anon NN" (where "NN" is their number) in the results screen. They will not be concealed from anyone using PACER admin screens. Further, in the results screens which are displayed on the public website, it may be possible to guess the participant's name as the results could appear in alphabetical order of un-anonymised surname.

CSV participant data loading

This section applies if you are entering data using the CSV method

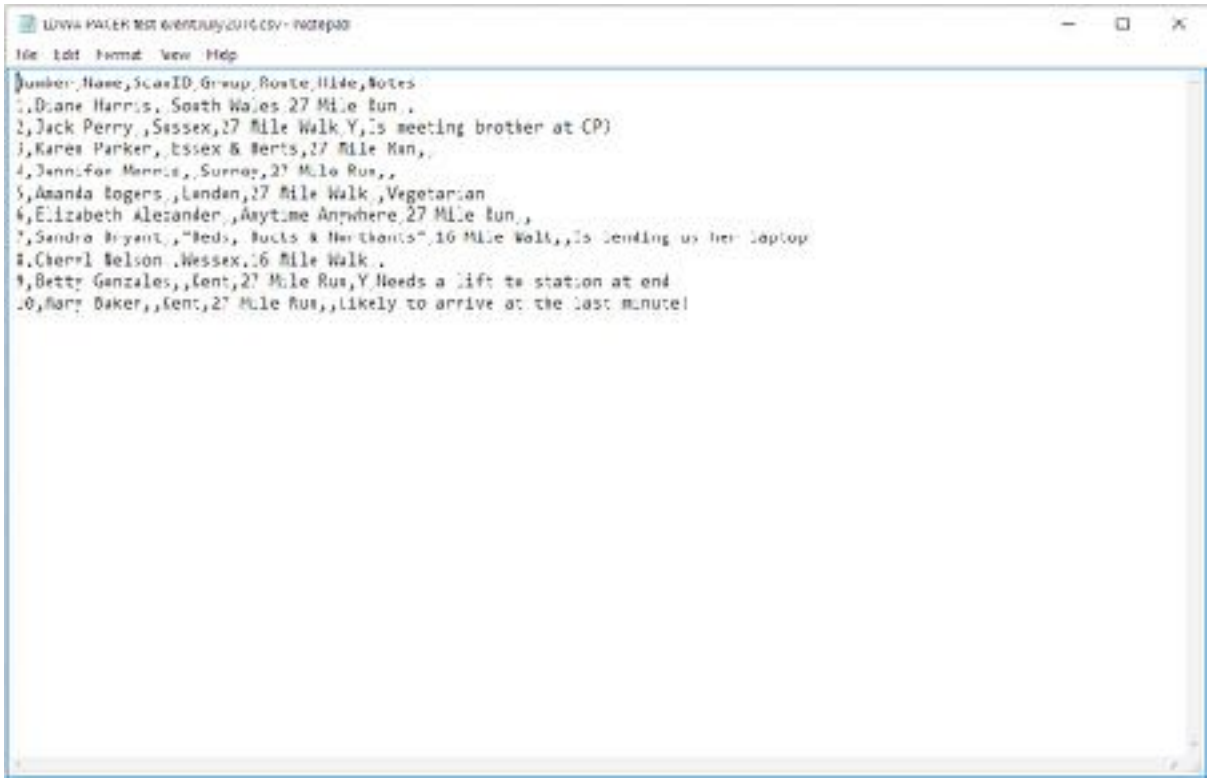
NOTE: This looks complicated but it is not! With care, it is possible to transfer several hundred participants out of an online entry system and into PACER in just a few minutes.

When you press the "Upload Participants" icon on the Event participants screen, a new screen appears which gives you the full instructions for uploading a CSV file of participant data generated from an electronic online entry system.

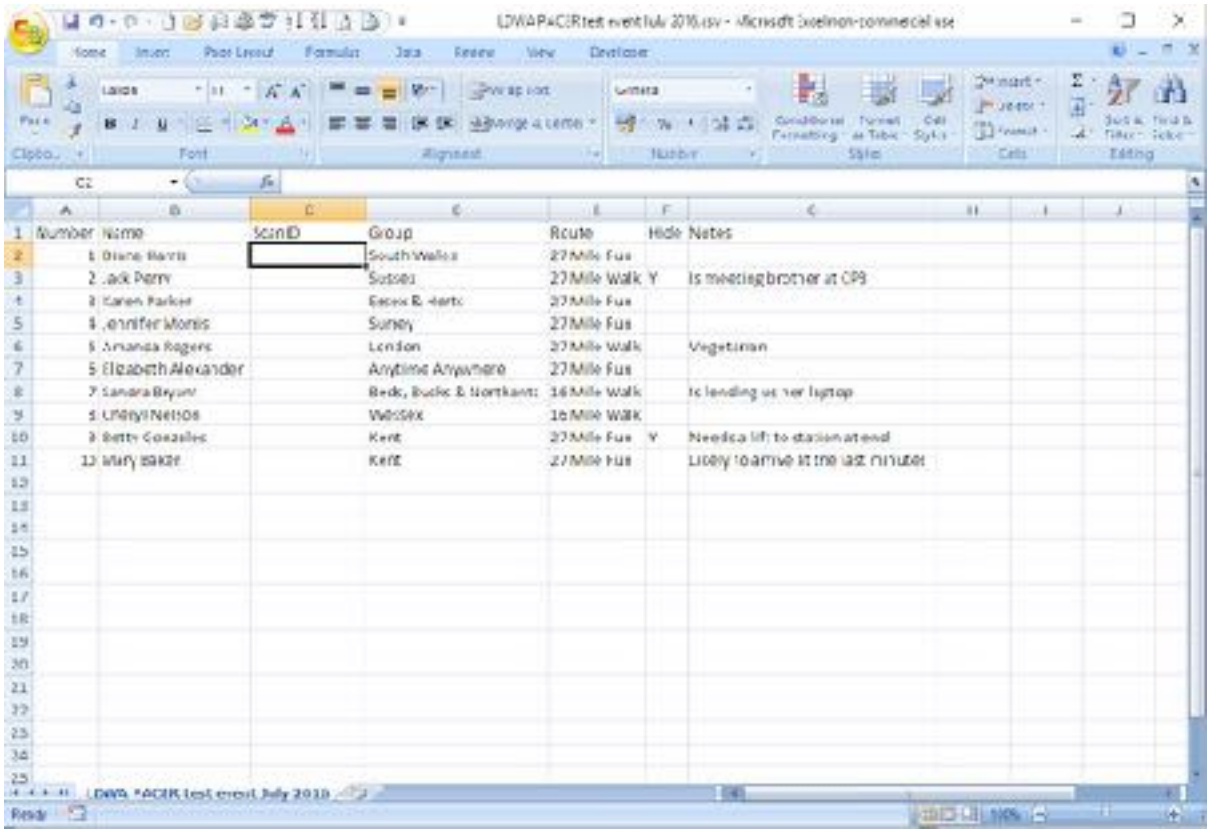


Using CSV uploads saves considerable time and reduces the scope for error. BUT it is ESSENTIAL that the CSV file is configured exactly correctly for it to be uploaded properly into PACER. The following points may be helpful:

- Generally, it's best to do the CSV upload once online entries have closed, so you only need to do it once. Any late entries can be added manually using the approach described in the previous section.
- "CSV" stands for "Comma Separated Variable". A CSV file is a file of text where individual elements of data, for example an entrant's name and Group, are (unsurprisingly) separated by commas. They can be opened and viewed in a variety of programs. The screenshot below shows a typical CSV file opened in "Notepad", for example:



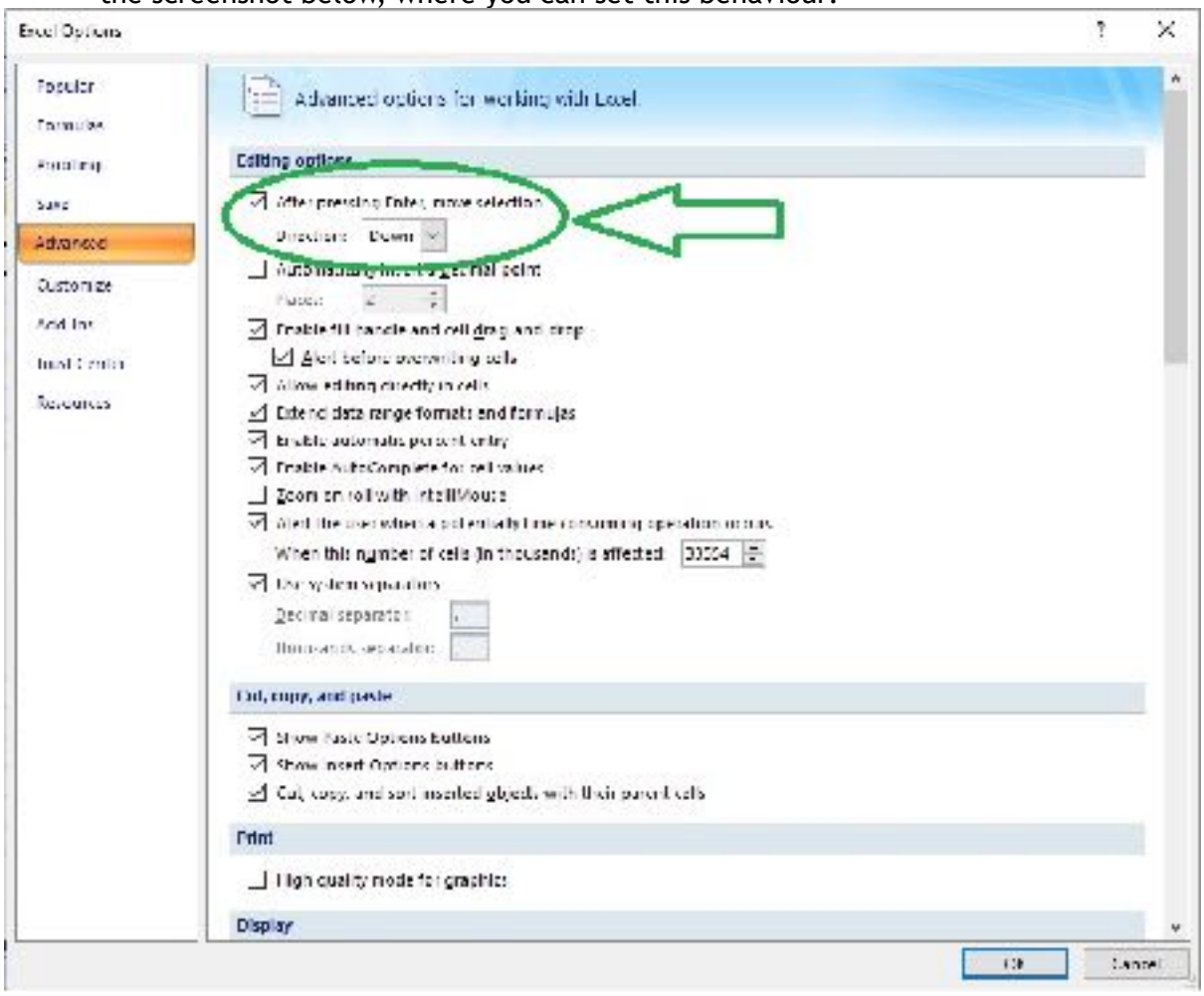
- This screenshot also illustrates how the PACER CSV generation system deals with data elements which already have commas in them (e.g. Bucks, Beds & Northants). It does this by putting inverted commas round the complete element, which prevents the comma between Bucks and Beds from being treated as a field-separator.
- The easiest way of viewing and managing CSV files is however via Excel. The next screenshot (next page) shows the same CSV file opened this way:



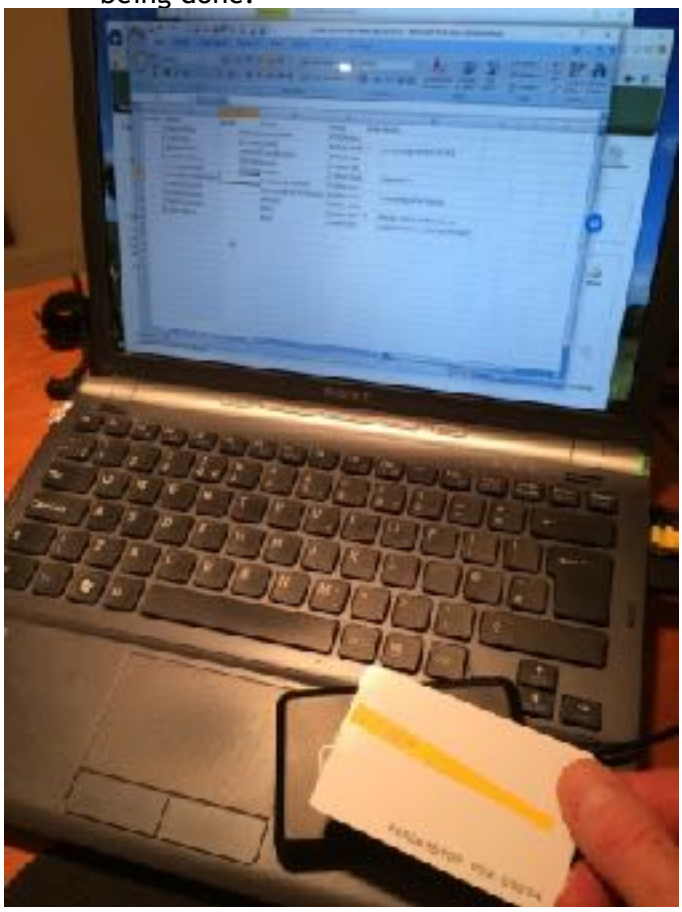
- Different online entry systems will have different ways of generating CSV files. If it isn't immediately obvious how to do this, you may need to contact the administrator of the system you are using
- Your CSV file MUST include the following information downloaded for each participant: **name**, **number** (see previous section for explanation of what "number" means), **group** and **route.** If you allow anonymous entries, the "**hide**" information must also be downloaded. Similarly if there are notes about special requirements, etc., and you want them to be accessible via PACER, then you must download those also.
- Once you have downloaded your CSV file, you will need to manipulate it a bit to get it ready for upload. To do this, open it in Excel, and first of all insert an EXTRA (blank) column and entitle it **ScanID**
- Then, if necessary, change the titles of the columns, and the order they appear in the spreadsheet, so the titles and the order are EXACTLY as shown in the Excel screenshot, above. If you don't do this, the upload won't work correctly. I.e. they should be (from left to right):
  Number - must be a unique number and is used as the reference for entering results.
  Name - free format name of the participant, up to 60 characters long.
  ScanID - must be a unique number and is the barcode or RFID card number used when scanning results. Leave blank if not using scanning.
  Group - free format local group of the participant, up to 60 characters long.
  Route - must EXACTLY match the "Short Name" of one of the valid routes for this event.
  Hide - Set to "Y" to hide the participant's name and local group in the public results, else leave blank
  Notes - A free format text field which can contain any text data.
  ALL the columns must be there, even if they have no data in them.
- The next step is to fill in the ScanID column. Exactly as in the manual entry, if you are using barcodes, the ScanID number can just be copied directly from the "Number" column. I.e. both columns can contain the same numbers. If you are

using RFID cards, then the number of the RFID card that is to be assigned to that person must be entered into the appropriate cell.

- There are two ways of entering the RFID card number. One is simply to read it off the card and type it in manually. If your RFID cards happen to be sequentially numbered, it may also be possible to just enter the first couple of numbers then use the Excel “drag and fill down” function to complete the rest. But quite often your RFID cards will not have sequential numbers, so exercise caution if trying this approach.
- The second way of getting the RFID card numbers in is actually to use an RFID card reader to do it. If you have an event with hundreds of entrants, this is far quicker and less likely to result in error.
- If you want to use the scanner to read the RFID codes in, however, it is **ESSENTIAL** THAT Excel is configured so that on pressing “enter”, the cursor will move to the next cell down. Otherwise each card you scan will just over-write the previous one. The way you do this varies depending on the version of Excel you are using but you should be able to navigate to an “advanced options” screen that looks like the screenshot below, where you can set this behaviour:

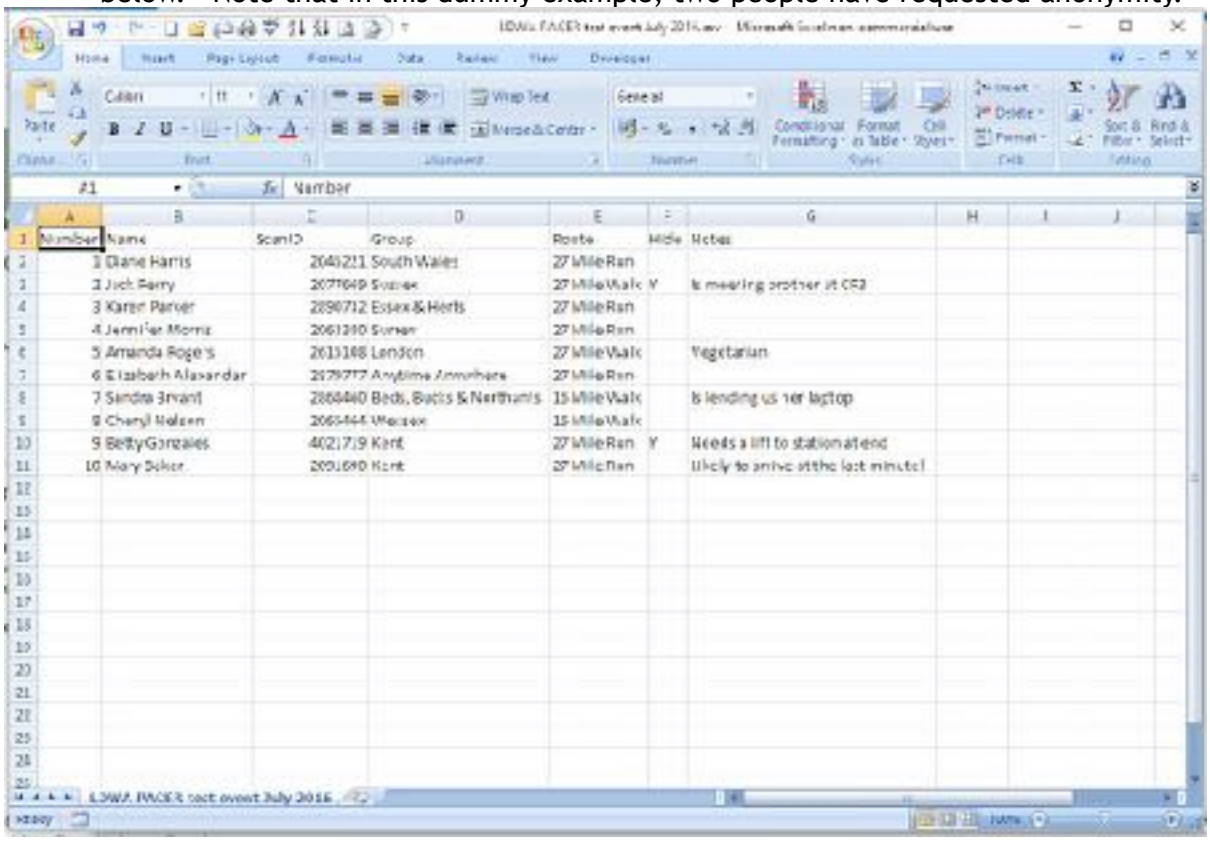


- Then, simply place the cursor in the first field of the “ScanID” column and, using the RFID card reader plugged into your laptop’s USB socket, scan the cards one by one so each is assigned to a unique participant. The screenshot below shows this being done:



- Note that it is possible inadvertently to scan a card twice and because the “move down after enter” has been set in Excel, you can accidentally assign the same card to two people. If this happens, just delete the duplicate and scan the next card there, then carry on as before.
- Note also that it can be useful to write the participant number and name on a scrap of “post it” paper and stick it temporarily to the card before it is scanned. This will be replaced by a proper label later on, but it does help prevent confusion at this stage. The screenshot above shows a card with such a temporary label (in yellow)

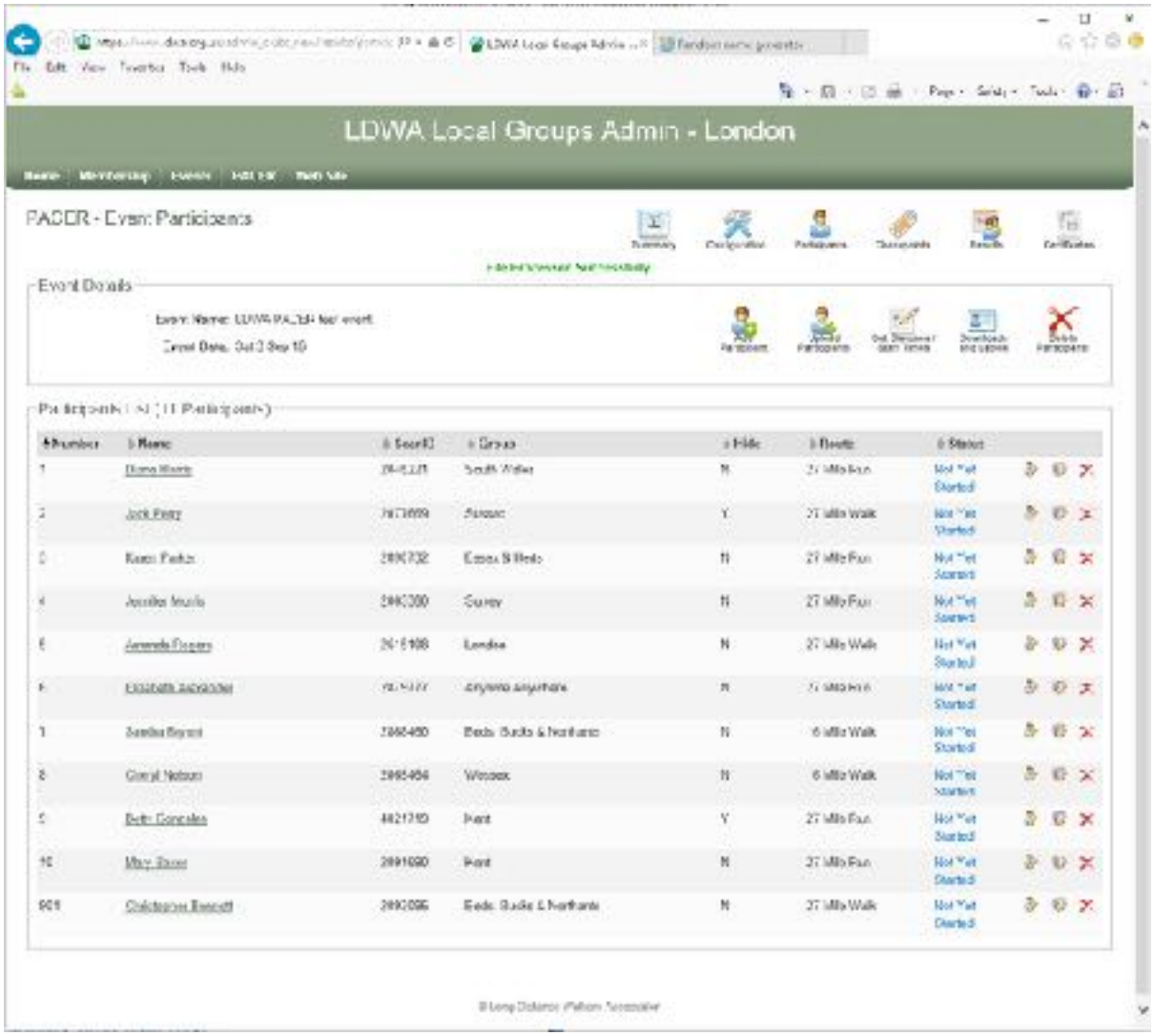
- When all the data has been filled in, the CSV file should look like the screenshot below. Note that in this dummy example, two people have requested anonymity.



Number	Name	ScanID	Group	Route	Mide	Notes
1	Diane Harris	2040211	South Wales	27MileRan		
2	Jack Perry	2077649	Sussex	27MileWalk	Y	is wearing brother #CP2
3	Karen Parker	2890712	Essex & Herts	27MileRan		
4	Jennifer Morris	2061360	Surrey	27MileRan		
5	Amanda Rogers	2613188	London	27MileWalk		Vegetarian
6	Elizabeth Alexander	2679777	Anytime Anywhere	27MileRan		
7	Sandra Bryant	2868440	Beds, Bucks & Northants	15MileWalk		is lending us her laptop
8	Cheryl Nelson	2869444	Wessex	15MileWalk		
9	BettyGonzales	4021719	Kent	27MileRan	Y	Needs a lift to station attend
10	Mary Baker	2691690	Kent	27MileRan		Likely to arrive at the last minute!

- Now save the CSV file, ignoring the various warning messages, but making sure that you save it as a CSV, not as an Excel spreadsheet.

- Next, just press the “Upload” button from the “Upload Participants” screen in PACER, navigate to the CSV file you just saved, and upload it. Depending on how many participants you are uploading, you should very soon see a screen that looks like the screenshot below:



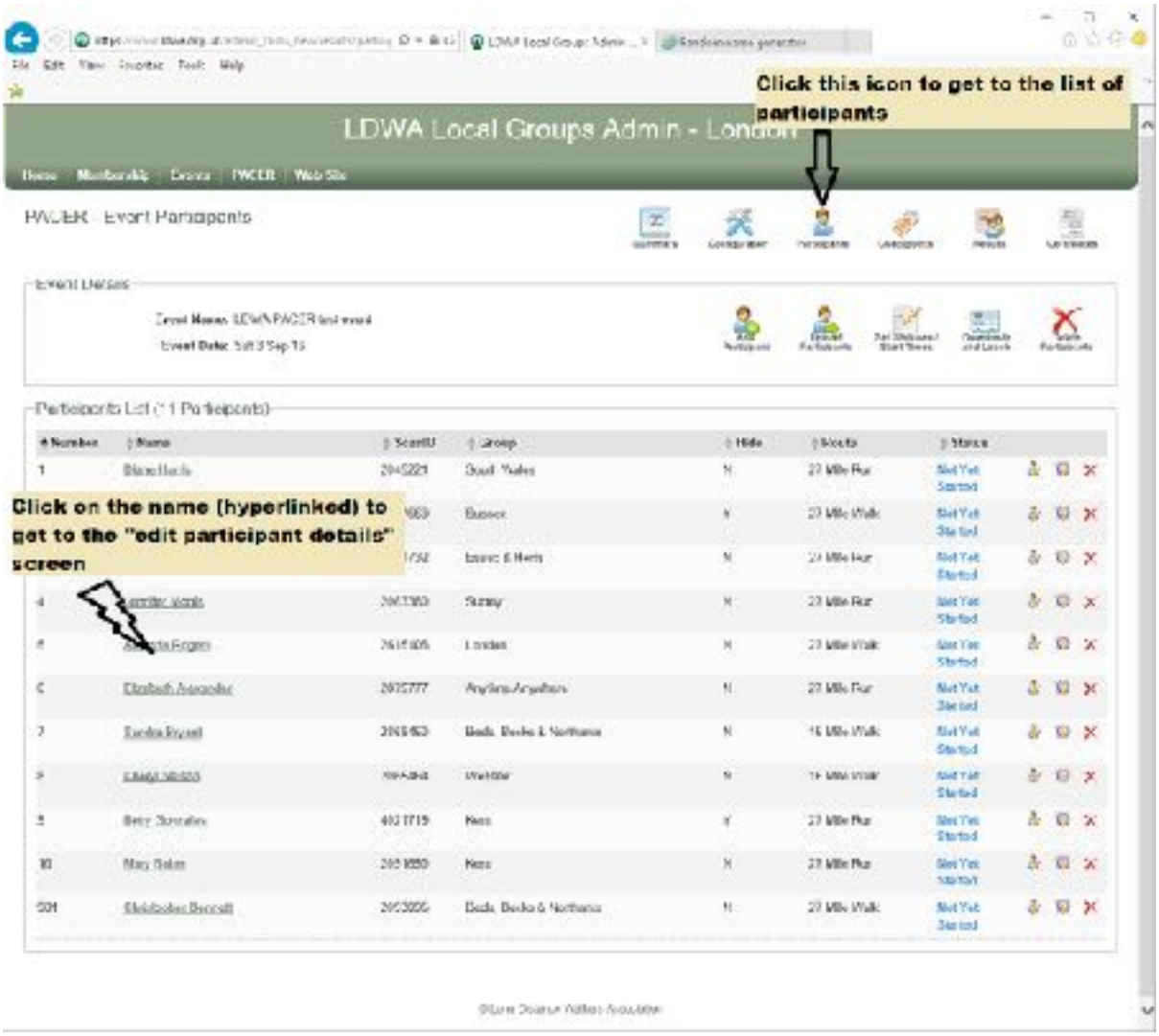
- You will see that the ten participants from the CSV upload appear on this screen, plus the one (at the bottom) that was manually entered earlier. They are by default sorted in increasing numerical order. You can change the sort order by clicking on the grey “up/down” arrows at the top of each column.
- Note that if you do another CSV upload and include participant(s) with the same number as already exist in PACER, the original will be OVER-WRITTEN (and you won’t get an error message) with the new entry. If you upload a second CSV which only contains new participants with new numbers, they will simply be added to the entrants already in PACER – those that are already there will not be affected.

Adding extra participants or modifying those that are already there

As noted at the beginning of this section, it is best to do this process once online entries have closed. If you get late entries, or you need to amend an entrant’s details, you can do it from within PACER.

To ADD a new participant manually, follow the process in the previous section

To MODIFY a participant's details from within PACER, click on the "Participants" icon which is towards the top right of ALL PACER screens, as shown in the screenshot. Then just click on the name of the participant you want to edit, and fill in the details on the next screen that appears, and press "Save and Exit"



By this stage, the event is fully populated with route details and participants, and you are almost ready to start running the event itself. The last thing to do is to prepare the participants' event entry cards.

An asterisk against an entrants names indicated an entry in the 'Notes' field. Click the name to view.

3) Preparing participant event entry cards

General – what are "event entry cards"?

A key part of the PACER system is the ability to scan participants through the start, finish and intermediate checkpoints so as to gather timings as they walk. This allows "real time" statistics about participants' whereabouts to be gathered, and also facilitates production of certificates and publication of results at the end.

To enable scanning, all participants must carry an event entry card. The card can be either an RFID card, in which case it is scanned by the USB RFID card reader described in the previous section. Or it can be a barcode, in which case it is scanned using the USB barcode reader also described in the previous section. It can also be an RFID card with a barcode affixed to it, so it can be interpreted by both RFID readers and barcode scanners.

Additionally, the event entry card also contains the participant number (and name) written clearly in text, so it can be manually entered into PACER at the checkpoints if scanners are not available.

Notes about labels for event entry card labels

PACER is designed to enable standard-sized labels to be printed from within the PACER system itself. These PACER-printed labels always include the participant's name, number and freeform text such as an emergency help number. It may also optionally include a barcode.

Note that this user guide describes how event entry cards can be produced from within the PACER system itself. It is of course possible to print labels / cards outside PACER. This may be the preferred approach if arrangements have already been put in place with local commercial printers, etc., to produce more complicated cards including logos and "clickpoint" facilities (see below). If using barcodes, these externally printed event entry cards can be used as they are, but if RFID cards are being used they will need to be the right size, and affixed to the CORRECT RFID cards separately. If printing externally to PACER, you can use the "participant export" function to produce a CSV file of all the necessary information for your commercial printer to use.

***Note** that a complete set of pre-configured event entry cards (a.k.a. tally cards) for use at Challenge events has been developed by the 100s Co-ordinator and is available for download from the PACER event list screen (see highlight on screenshot in previous chapter).*

These barcodes can be successfully scanned into "PACER" (as can those generated by PACER itself, as described below). It is strongly recommended that either PACER-generated barcodes or the 100s co-ordinator ones are used. If using barcodes generated by other means, you should check carefully that they are "scannable" when printed, as user experience has shown that some barcodes cannot be reliably read. Also, aim to print your barcodes with a high resolution print setting, so the bars are clear, and aim for them to be between 4 and 5 cm long.

PACER-generated labels can be printed onto A4 sheets of self-adhesive labels, 21 per sheet, with each label being 63.5 x 38.1mm (Avery code J8160). These labels can be stuck onto RFID cards, or onto larger pre-prepared cards which may include event logos and possibly the facility to visit unmanned orienteering-style "clickpoints" along the way.

In the highly unlikely circumstance that you are expecting rain on your challenge event, you may want to print your labels onto self-adhesive waterproof paper. Such materials are available on-line. Don't be overly concerned about getting pre-defined press-out labels – if push comes to shove, you can just print onto plain paper, cut out with scissors,

and stick them onto the cards (using glue or wide clear sticky tape if they are not self adhesive).

***Note**: if using sticky tape, take care not to get creases into the tape or they may render the barcodes illegible. Also, you may find that non-shiny tape is easier to scan with barcode readers, as you can't get confusing reflections into the scanner. If you want to re-use RFID cards which have had barcodes etc stuck onto them with sellotape, the best way seems to be to soak them in methylated spirit for at least 48 hours then peel them off.*

These instructions describe how to print participant labels with barcodes, and how to stick them onto the appropriate RFID card. This is a "belt and braces" approach as it allows both barcode scanners and RFID readers to be used in the same event, as they can both read the participant data off the card, they just do it in different ways. However, if you don't want barcodes, the instructions within PACER are self explanatory and will tell you what to do.

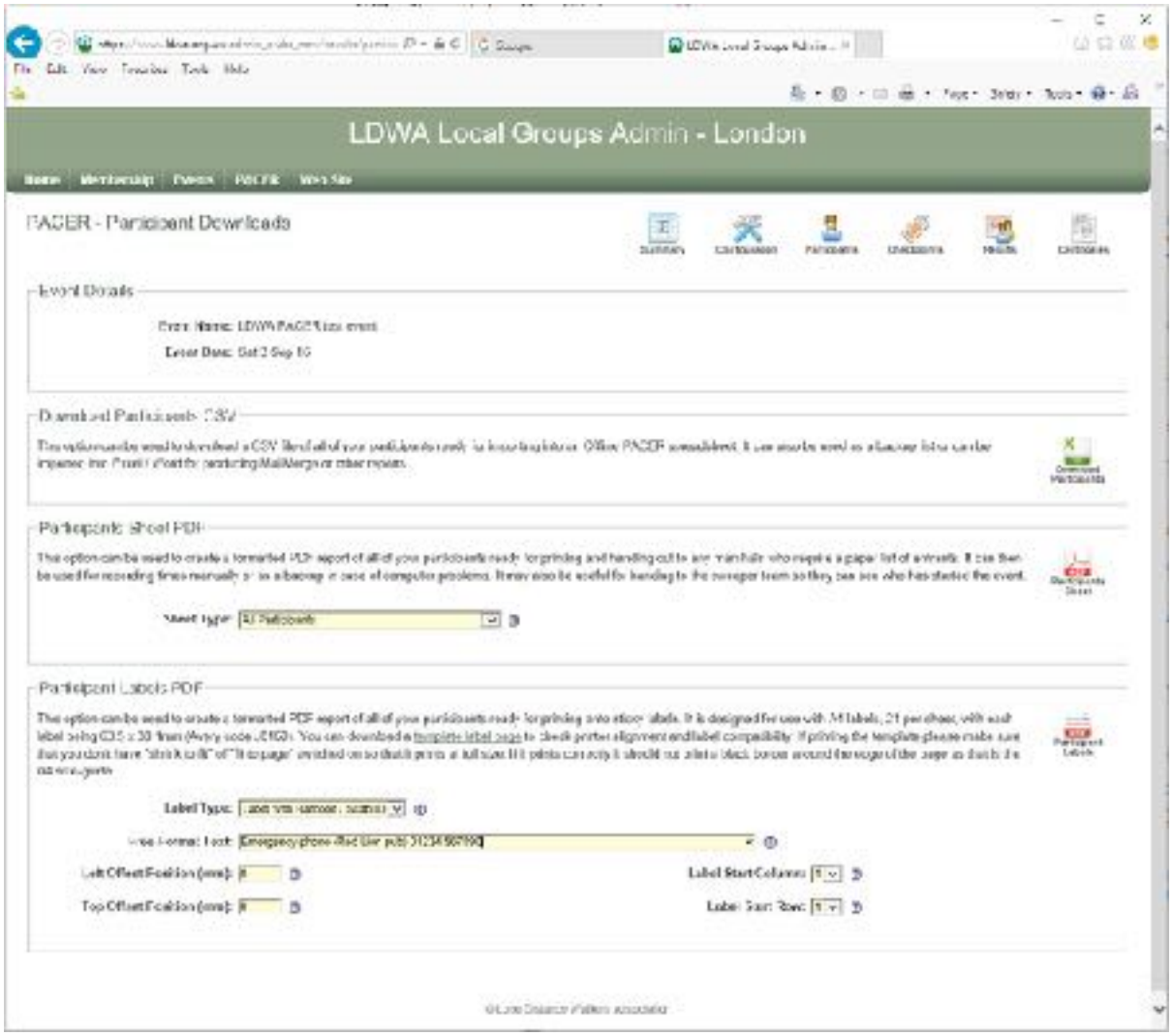
Preparing event entry cards

So, to begin preparing event entry cards, first click on the "participants" icon which can be found towards the top right of every PACER screen

From the next screen that appears, press the "Downloads and Labels" icon which appears towards the centre-right of the screen.

Navigate to the bottom of the screen, to the section entitled "Participant Labels PDF". The text description on the web page explains what to do next. Just select the appropriate label type (with / without barcodes) and type in any free-format text, like for example the event HQ phone number. Leave the "offset positions" at zero and ONLY change them if, when you print your labels, you find that the text "misses" the pre-defined press-out sticky label on the sheet. You can use the "start column / row" boxes to use up part-completed label sheets.

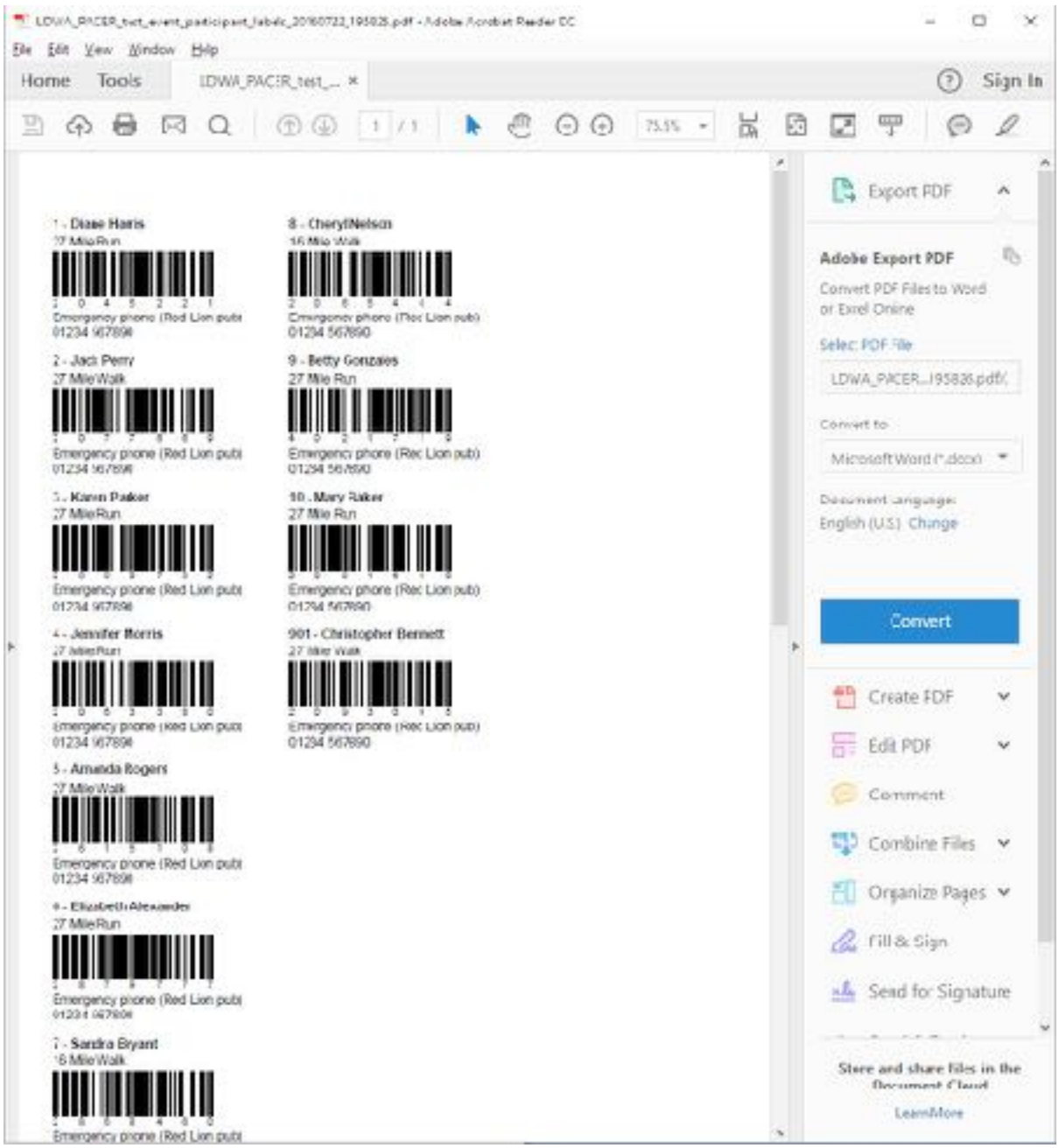
Even though there is no “save” icon on this screen, these details will be in fact be saved whenever you print a set of labels so the next time you come into the screen the label fields will have their previous values remembered.



Next, press the “Participant Labels” icon towards the bottom right of the screen

When you press this icon, you will get a message similar to the one shown in the screenshot below. Press “open”

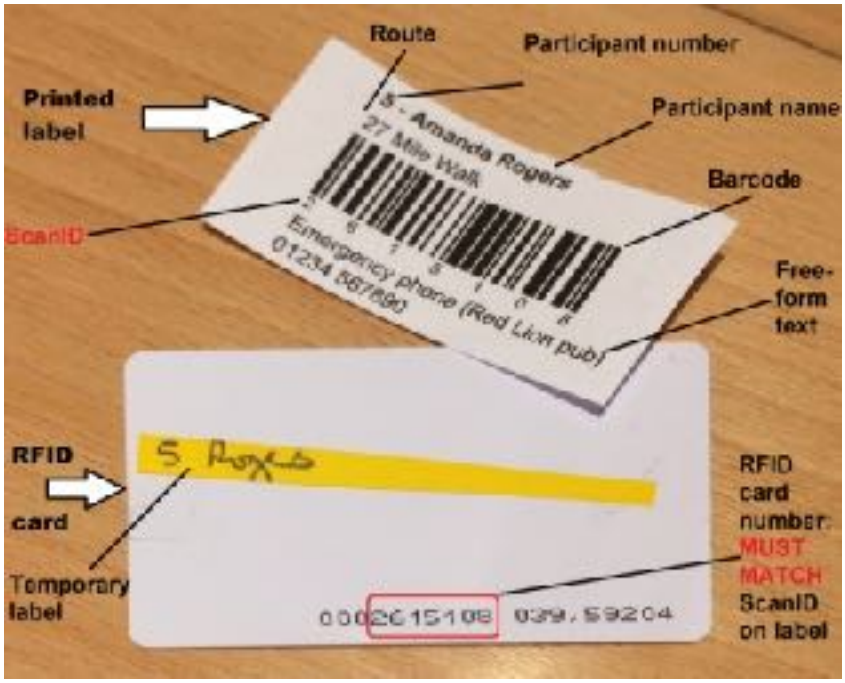
What happens next depends on how you have configured your computer to read Adobe Acrobat .pdf files. Normally, you will see a screen something like the attached.



Print this screen by whatever route you normally print pdf documents, making sure you don't have any "shrink to fit" (or similar) options selected
***NOTE**: If using barcodes, select the highest resolution print setting you can, to ensure clean and clear barcodes.*
The photo below shows the labels which were printed for this trial event being cut out from a sheet of plain paper. If you are using sheets of pre-defined press-out sticky labels of course you won't need to do any cutting.

The final step is to attach the labels to the event entry card. In this example, they are being fixed onto RFID cards, though if you are not using RFID but are including more elaborate logos and possibly "clickpoints" then you may be attaching them to larger sheets of waterproof card.

If using RFID cards, it is ESSENTIAL that the correct label is stuck onto the matching card. The cards were assigned to participants in the previous section, so the “ScanID” is linked to the participant name and number. You will see the ScanID printed below the barcode on the label, and the RFID card number printed somewhere on the card, so it is relatively easy to match the labels to the cards. If you used the “post-it note” temporary label mentioned in the earlier section, it is even easier. The photo below shows how to do this matching:



Then just stick the relevant labels onto the relevant cards. If using pre-defined press-out sticky labels, this will only take a few minutes. If using the scissors-and-glue approach, it may take a little longer. When you have finished, you should have a set of cards which resemble those in the photo below.

Note that even if a participant requested anonymity, their name is printed on the card. PACER ONLY anonymises names in those results which are electronically published on the public LDWA website – NOT on the event entry cards and NOT within the PACER system itself.

NOTE: *As a final check, at this stage it is prudent to check that the cards can all actually be read by the barcode readers and / or the RFID readers that you will be using at your event. This is because experience has shown that sometimes for reasons that aren't very obvious, the barcode cannot be read (remember all those frustrating experiences at the supermarket in the self-scan aisle when the scanner simply won't register your cornflakes). Also, RFID cards occasionally fail – again, just think of the occasions when your Oyster card won't allow you out of the Underground station. To do this test, just connect you scanner(s) to your laptop and scan them one at a time into Excel. If you find a "defective" card, either replace it and print a new label for a new card, or make a note on the card in indelible pen, so that Marshals will know that they will have to enter the participant's number manually, rather than by scanning.*

At this stage, you are ready to start your event, UNLESS you have any "offline" checkpoints, in which case there is one further step to take before you can start.

4) Configuring "offline" checkpoints

Network access and description of "Offline PACER"

In the UK, network connectivity outside the major towns and cities can be patchy and unreliable. If you are running a checkpoint on a remote hilltop or in a deep valley, you may not have a good 3G / 4G mobile data network connection and you almost certainly won't have access to the network via WiFi.

To get round this problem, PACER has developed a simple Excel spreadsheet module which is designed to be used in stand-alone mode on laptops at those checkpoints where data access is not available. Note this is not suitable for use at the HQ, which must have network access.

This system is called "Offline PACER". It reads the ScanID (or number) on participants' event entry cards, automatically translates this into their name, number and scan time, and saves this data with a date stamp into the spreadsheet. The spreadsheet can export a CSV file of data which can be sent back to HQ (or in fact anywhere with good network access) at a convenient point, where it can be uploaded into PACER. The process for doing this is explained in a later section.

Populating Offline PACER with participant data

Before offline PACER can be used, it must be pre-populated with data, so that it can match ScanIDs with participant names, etc., as they pass through the checkpoint.

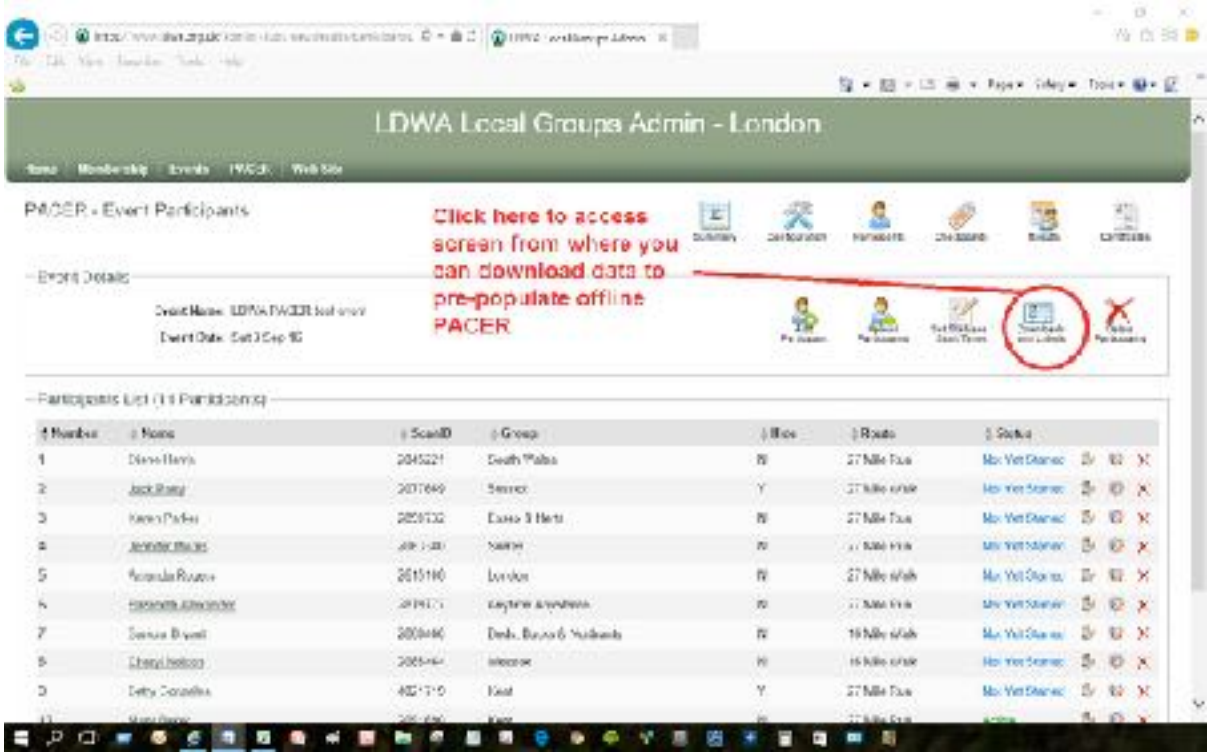
This pre-population is straightforward. The first step is to download a copy of Offline PACER onto the device which will be used at the offline checkpoint (or onto another laptop from where it can be transferred using a USB memory stick, etc.)

***Note**: Offline PACER is designed to be used on a Windows or OSX laptop. It will not work using "Mobile Excel" on Android or Apple mobile devices because it uses macros, which are not supported by the mobile apps. On Apple mobile devices, it is only possible to enter data by manual typing or Bluetooth (see later) as USB scanners are not supported.*

Before you can pre-populate the offline PACER spreadsheet, you need to download a copy. Do this by returning to the (online) PACER – Event List screen (do this by clicking "PACER" in the green bar at the top left of all screens) and clicking the link entitled "Offline PACER spreadsheet" (see screenshot).

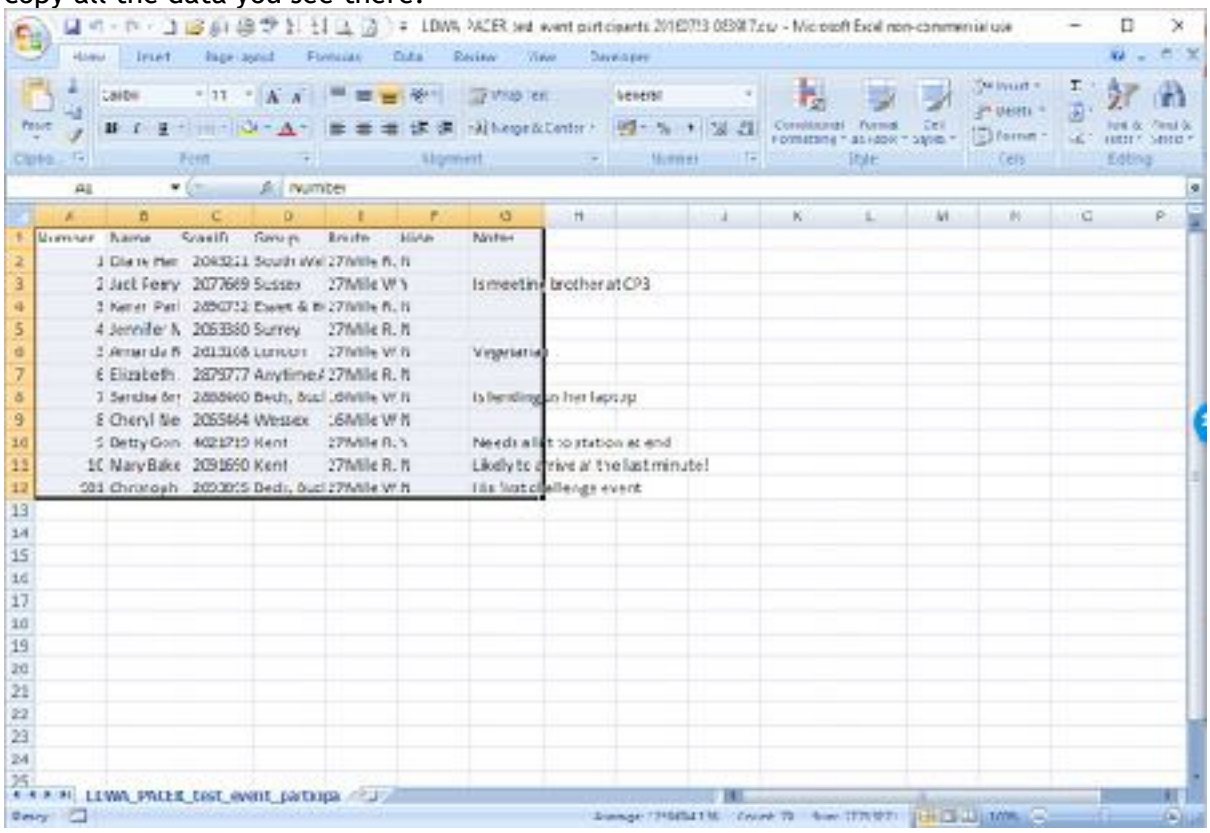
Once it has downloaded, select "File Save As" and give the file a name which will help you identify which checkpoint it refers to. Make sure you keep the type as "Macro-Enabled Worksheet (*.xlsm)". In the dummy event in this trial, Checkpoint 2 (at Poundland) is offline – see the screenshot. Make sure you remember where you have saved it.

Next, from the same PACER – Event List screen, select your event by clicking on the name, then click on “Participants”. Then click on the “Downloads and Labels” icon towards the centre right of the screen:



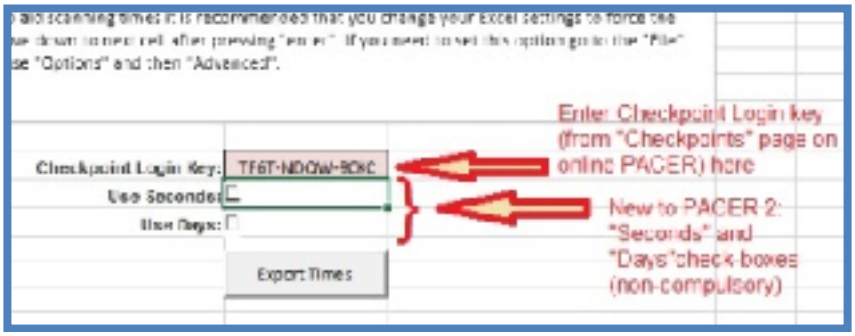
In the screen that appears, just press the “download Participants” icon towards the right of the screen:

You will then be given the option to “Open”, “Save” or “Save as” the file that is downloaded. Choose “Save As” then save the file (which will have a name like “LDWA_PACER_test_event_participants_20160723_083917.csv”) somewhere where you can easily find it again. Now, open the CSV file (e.g. from File Explorer) and highlight and copy all the data you see there:



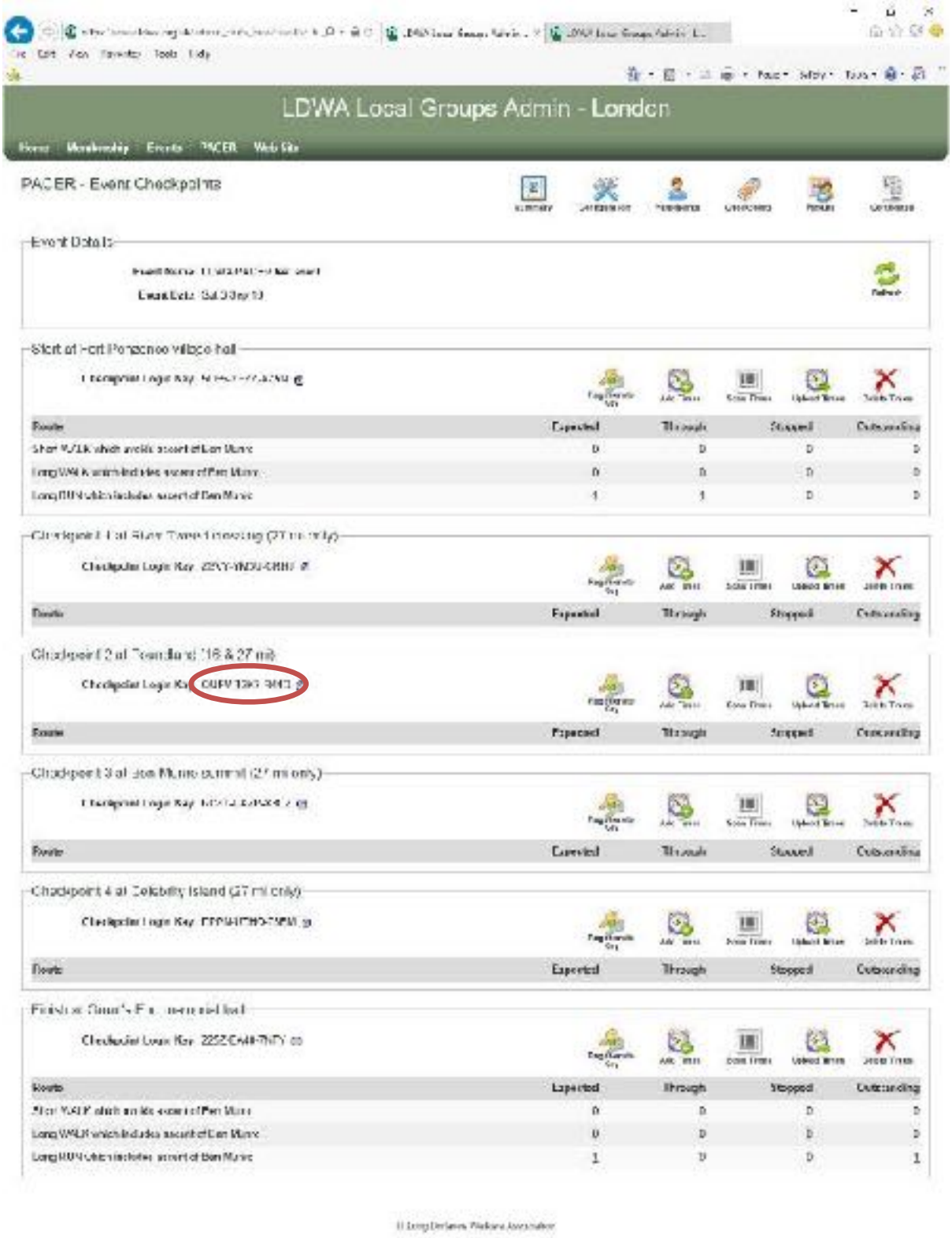
Now, open the “Offline PACER” spreadsheet that you downloaded earlier. The first tab (screen) that you see gives detailed instructions about how to use this offline module. Take a few minutes to read this.

The first, critical, step on this tab is to enter the appropriate “Checkpoint Login Key” into the field shown in the screenshot below. This feature is a “lock” which prevents data from an offline checkpoint, using the offline PACER module, from being accidentally uploaded into the wrong checkpoint in online PACER.



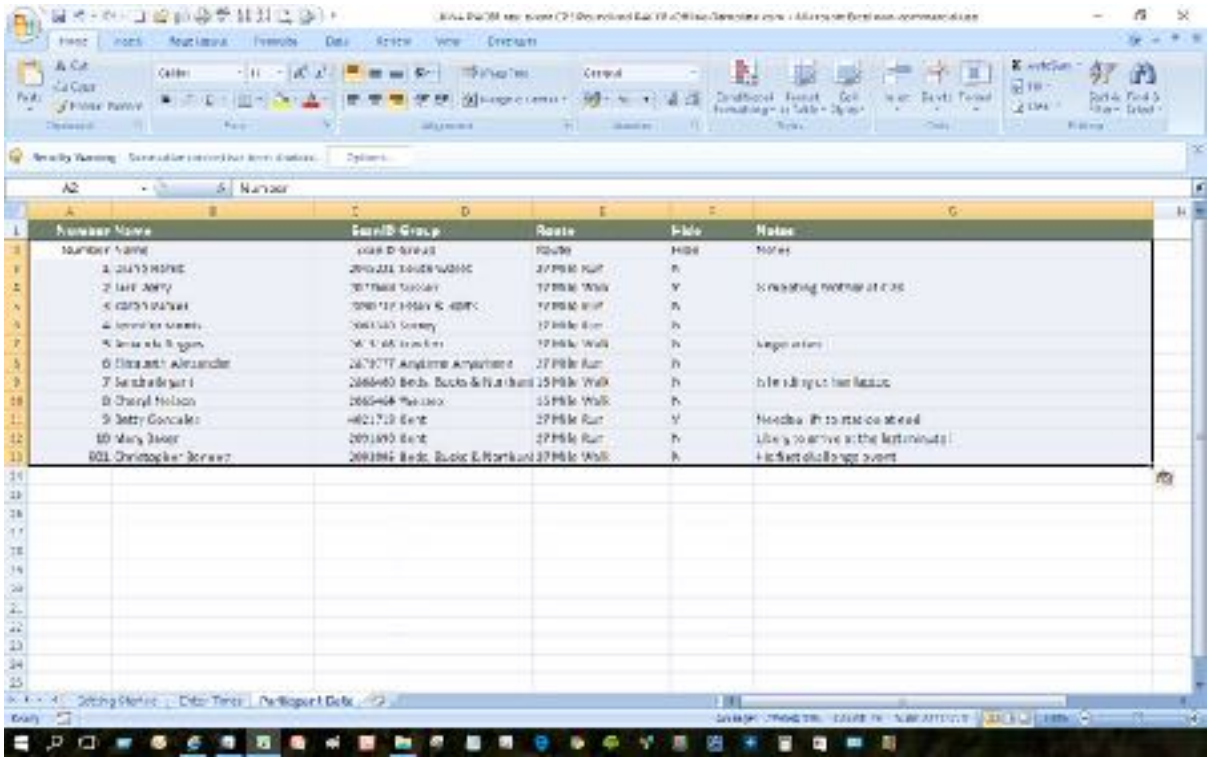
To find the appropriate key, using the “full” version of PACER (i.e. the one in which you have used to set up the event and upload the participants), navigate to “Checkpoints” (i.e. PACER -> PACER – Event List -> (click on your event) -> Checkpoints).

You will see a screen which looks like the attached. Notice that each checkpoint, including the start and finish, has a 12 digit alphanumeric “Checkpoint Login Key”. Make a note of the one which refers to the checkpoint which you intend to run through offline PACER, and enter it into the first tab of offline PACER as shown above.



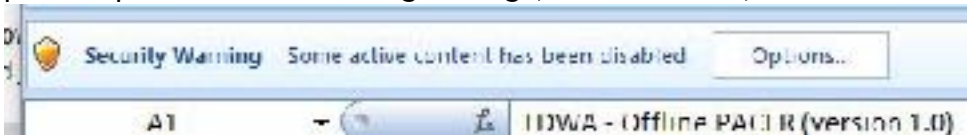
***NOTE**: As well as entering the checkpoint key, at this stage you may wish to check the “Use Seconds” box, and similarly the “Use Days” box if your event requires either or both. (NB these are **new** features in PACER 2). If left blank, the event default is time by minute and don’t use dates.*

Once the checkpoint key has been entered, click on the third tab ("Participant Data") and paste in the data you just copied from the CSV file (with Cell A2 at the top left of the paste area). The screen should look something like this:



You will see that row 2 has the same text in it as row 1. This is confirmation that the CSV file properly meets the Offline PACER specification. If the two rows are the same, delete row 2 and save the offline PACER spreadsheet (.xlsm) file.

IMPORTANT NOTE: Offline PACER contains Macros. Sometimes, by default, Excel "disables active content". In order for the system to work, macros must be enabled. To do this press "Options" on the warning message, then "Enable", then "OK"



If you have several offline checkpoints, it is recommended that you download several copies of offline PACER and give each a different name, related to the offline checkpoint it will be used at. Then repeat the process above to enter the relevant checkpoint key and to pre-populate it with participant data.

Your event is fully set up now, and you are ready to begin.

5) Managing participants at an "online" checkpoint

General: start, finish, checkpoints, "cut down" PACER and NEW "Big Buttons" PACER

This section of the guide refers to the process for collecting and recording the times at which participants pass through checkpoints. The process is the same for recording participants at the start and finish as it is at checkpoints, EXCEPT if the event has a mass start and you want, say, 500 participants all to start at the same time. To effect a mass start, see the "Bulk set" section below. Also the way in which participant status ("not yet started", "active", "finished", "retired", "disqualified", etc.) behaves is slightly different at the start, finish, and intermediate checkpoints. Where this is the case, it is noted in the text.

Marshals who are running checkpoints use a slightly different, "cut down", version of PACER, which has limited functionality and is specific to their checkpoint. This is to help minimise the risk of wrong data being accidentally entered at a checkpoint and confusing the whole event.

NOTE: NEW "BIG BUTTONS" MOBILE FUNCTIONALITY FOR PACER 2
A major new innovation for PACER 2 is the introduction of an alternative "Big Buttons" mode for using "Cut Down" PACER at checkpoints. This makes use of PACER on a smartphone or tablet at a checkpoint much more practical. There are full instructions for using this mode at the end of this Chapter (i.e. in about 10 pages' time).

The first step when running an event is to distribute the Event Entry Cards at the start of the event. When participants arrive, make sure that every participant is given the correct card – to assist with this you might arrange the cards beforehand, in either alphabetical or participant number order. If your event allows entrants to turn up on the day and be registered there and then, you will need to enter them into PACER using the "add participant" system outlined earlier, remembering to assign a unique participant number that has not been used before. Also you will need to prepare event entry cards for them, which will mean having access to a printer (for barcodes and labels) and spare RFID cards, if being used.

If you're running a big event, there will be a lot going on at the start so it is strongly recommended that you rehearse use of systems and have a "dry run" before you start. It will also be helpful to have at least two people running PACER at the start, with access to at least two network-connected PCs / laptops and printers.

***NOTE**: You may in particular want to rehearse the process for "on the day" (OTD) entries as experience shows that this can be a major headache and one of the most stress-inducing parts of starting an event. You may want to prepare some blank event entry cards in advance and enter them with "pseudonyms" when setting up PACER. Then when you get an OTD entrant, you just need to change the pseudonym on PACER, and write the correct participant name on the card in indelible pen.*

***NOTE**: This user guide has sufficient detail about the practicalities of how to run PACER at the Start and at the checkpoints to get you started. However, if you would like more extensive notes about the preparation, equipment and training needed to use PACER in a real event, both Surrey and Thames Valley Groups have extensive experience in this area. Please contact internet@ldwa.org.uk if you would like to learn more.*

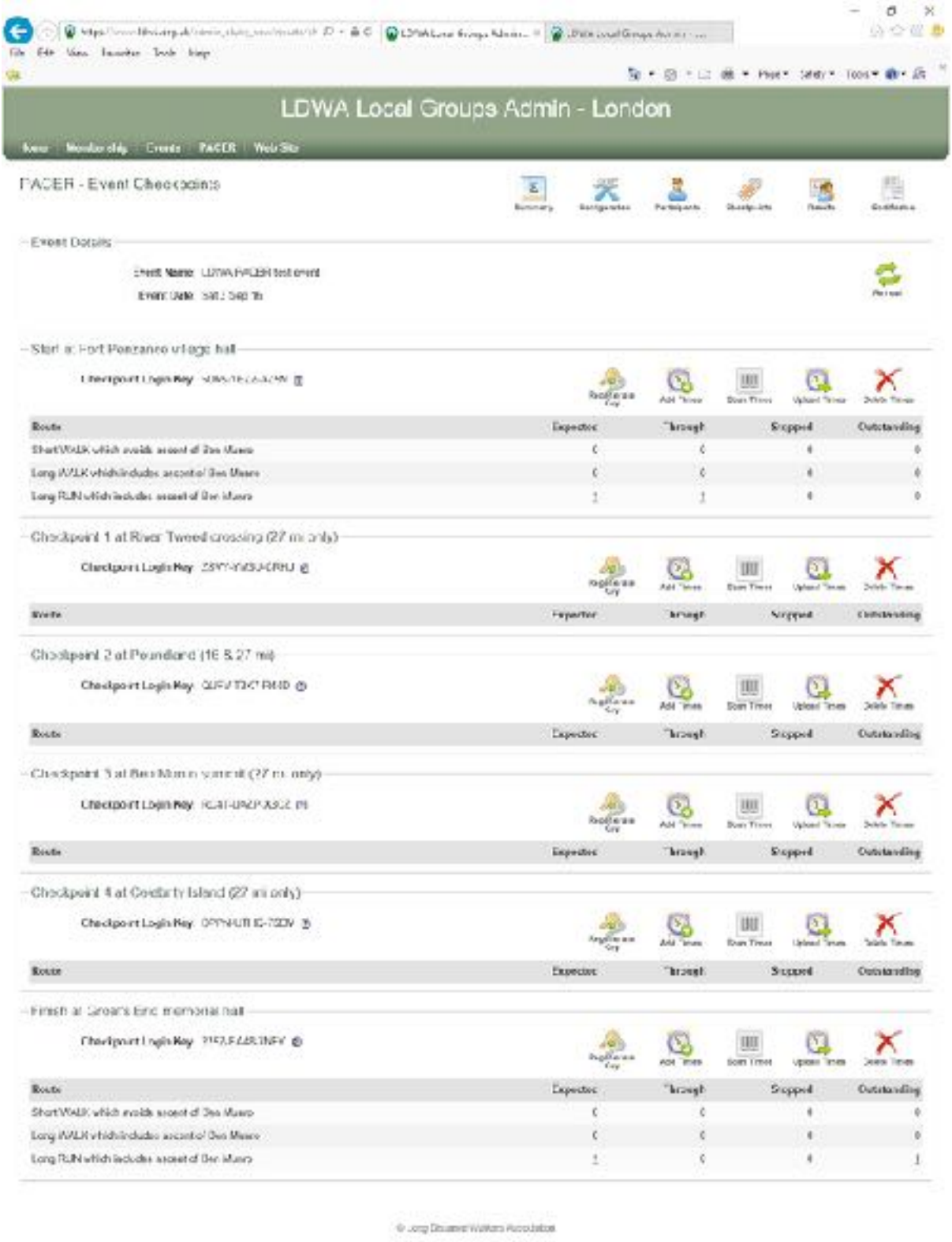
"Cut down" PACER for checkpoints – login keys

***NOTE**: The login URL for the cut-down version of PACER is:*
https://www.ldwa.org.uk/checkpoint-admin.
There are full instructions on how to use this below.

To use the "cut down" version at checkpoints, you need to identify the relevant checkpoint login keys. The process for doing this is exactly the same as described in the "Offline PACER" setup section, but is reproduced here for ease of reference.

So, before starting at a checkpoint, using the "full" version of PACER (i.e. the one in which you have just used to set up the event and upload the participants), navigate to "Checkpoints" (i.e. PACER -> PACER – Event List -> (click on your event) -> Checkpoints).

You will see a screen which looks as shown on the next page. Notice that each checkpoint, including the start and finish, has a 12 digit alphanumeric "Checkpoint Login Key". Make a note of these, as they will be required to access the "cut down" PACER at each checkpoint.



Note that participants can be scanned through checkpoints using EITHER the “Full” version of PACER, OR the “cut-down” checkpoint specific version. In other words, ANY checkpoint CAN use “full” PACER, it’s just that by doing so, the risk of corrupting the database though incorrect data entry (e.g. a checkpoint accidentally entering data as the wrong checkpoint) increases. It is likely, though, that the Start and Finish of the event will use the “full” version, as they are probably also the event HQ. However, they can also run the “cut down” version – which might be useful, for example, if the Start and / or

Finish are NOT the HQ. Note also that people using the cut-down "checkpoint" version of PACER don't need to be pre-authorised (by internet@ldwa.org.uk) to log into the Local groups Admin System (they just need the Checkpoint Key) whereas to use the full version they do.

How to access the network and login to PACER at a remote checkpoint

To log on to PACER at a checkpoint, first access the internet. If in a town or village, wifi may be available (BT wifi hotspots are quite useful for this). Alternatively, create a wifi hotspot from a mobile phone, or use a mobile wifi device. Mobile wifi devices are available from all the mobile phone data operators and convert a 3G / 4G mobile data signal into a wifi network (these tend to be more reliable than mobile phone hotspots).

If a 3G / 4G mobile signal is not available (noting that PACER will not work with 2G or EDGE) then you will probably need to use offline PACER. Alternatively, for a major flagship event you may want to consider using satellite broadband. The Inmarsat iSat hub is probably most suitable. It will create a wifi hotspot from a satellite signal in a similar way to a mobile wifi device working from a terrestrial 3G/4G network. It costs about £150 to rent for 50MB (which if used carefully should be enough to run a checkpoint). Note that to use one of these you need to have a power supply as the battery won't last for ever, and you need a clear view of the southern horizon, so it won't work in forests or deep valleys. Iridium satellite systems don't have to point at the horizon but they are painfully slow and almost certainly unsuitable for PACER.

Once network connectivity has been established at the checkpoint, login at the following URL:
https://www.ldwa.org.uk/checkpoint-admin

Select the local group that is running the event and type in the appropriate Login Key. The screenshot shows the login process for CP3 at Ben Munro on the London test event:

You will now be presented with a very simple screen, which looks like the attached:

You can try clicking the various icons along the top to explore the functionality. You will see that the "Participants" icon lists ALL the participants, even if they are not on a route that visits this checkpoint. The software will send you a warning message if someone tries to check in to a checkpoint that their route doesn't visit.

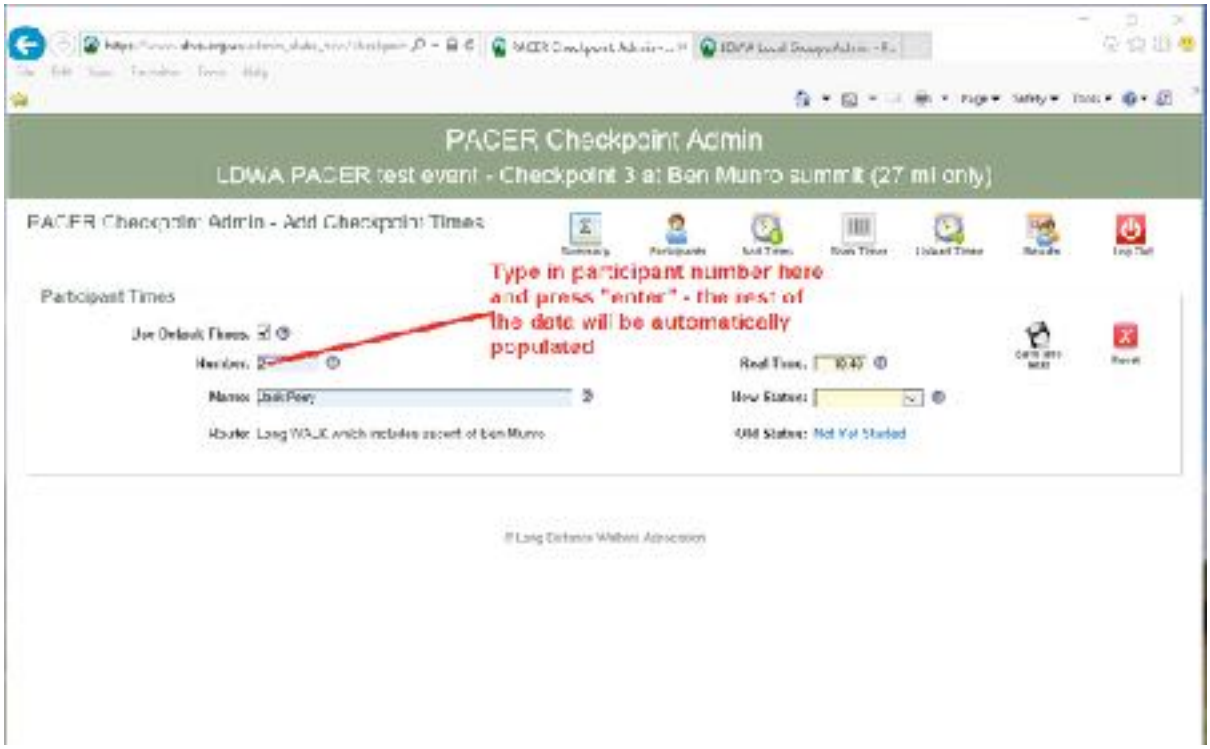
Entering participant times into PACER at a remote checkpoint (general)

There are three ways of getting participant times into the checkpoint: ***Add*** times; ***Scan*** times; and ***Upload*** times. Note that if you are using "full" PACER to scan participants, then you can get to the same three data entry options from the Event – Checkpoints screen and just scrolling down until you find the checkpoint you want.

Entering times by typing

This requires the use of the **first** option - "***Add Times***".

Note that if your event was configured as a multi-day event, a " Day" field will appear in the "add times" screen and will need selecting to Sat, Sun or Mon (or other as appropriate) when entering the Add Times screen.



You use this if you are entering data by hand, rather than by scanner. So, when a participant arrives at your checkpoint, ask for their Event Entry Card and read the Number off it (i.e. the PARTICIPANT number at the top left, NOT the seven digit ScanID number). Type this number into the blue "Number" field and press enter. If you make a mistake, press "reset". If a participant that should not be at this checkpoint tries to check in, you will get a warning message and can choose whether to allow them to continue or not. Note that if you don't have the participant number available for any reason then you can also type in their name (or part of their name) instead.

The "Use Default Times" option means the checkpoint will be working in "online" mode, so the central LDWA web server adds the time and you don't need to worry if the clock on your laptop is wrong. If the box is not ticked, you will have to enter the time manually yourself (this is not recommended and would normally only be used if "catching up" with entries entered onto a paper list first).

You will see that the system will automatically add the participant's name and time into the relevant boxes.

If this is the Start "checkpoint", when the participant is added, the status will automatically change from "Not Yet Started" to "Active". If it is the Finish "Checkpoint", the status will change from "Active" to "Finished".

If a participant decides to retire, or is disqualified for any reason, just select the correct status from the "new status" box at the right hand side and then choose "effective from" in the next box that appears.

Press "save and next" once you are happy with the data. A fresh screen will appear, ready for the next entrant's number to be typed in.

It is recommended that two people should work together at each checkpoint to ensure data is collected correctly. A **greeter** reads a participant's event entry card and an **inputter** enters the walk number and hits enter. At this stage the participant's name should be checked with the participant. If it is the correct number and name then click

the Save button and the time is recorded and saved for this participant; a confirmation displays that the participant has been recorded and the number and name field are reset for the next entry.

Note that where a participant has passed through the checkpoint but their time is unknown, a dash should be entered in the time field. In this way the participant is recorded as having been through the checkpoint but with no time associated with them.

If you try and enter the same participant twice, in PACER2 you will NO LONGER get a warning message – the original time will NOT be over-written – you will have to go in and manually change it (just over-type the correct time in the yellow box at the right and press "save and next").

The "Add Times" option can be useful if the local group hasn't invested in scanners. It also allows checkpoints to be run on iPads which do not support USB scanners.

Note if you try and use a scanner by mistake in the "Add times" screen, or if you type in the ScanID rather than the Number, you will get an error message. This is because the scanner reads the ScanID (which is seven or eight digits), not the participant number (which is three or fewer digits). The data entry fields are colour coded blue (in the add times screen) and yellow (in the scan times screen) which will help prevent this happening.

Entering times electronically with scanners

This requires the use of the **second** option - "***Scan Times***".

This is used if you are expecting a lot of participants in short succession and if the Local Group has invested in scanners. It is quicker, less error prone, and easier to use with cold fingers at an outdoor checkpoint in winter. It cannot however be used with iPads (though may be possible with Android tablets and phones) EXCEPT is Bluetooth scanners are used (see later). Either USB or Bluetooth barcode scanners or USB RFID card readers can be used – the process is exactly the same.

Note that PACER 2 has been developed and launched now and aims to make the use of the "Scan Times" screen easier to use in real-life, outdoor checkpoint situations. This further development has been loosely named the "Cold Fingers / Big Buttons" function and is detailed at the end of this chapter.

To use the scanning option, navigate to the "scan times screen" and make sure the cursor is blinking in the yellow box towards the top left. This is important or the card data will not be read properly. Then, when a participant arrives, simply either present their event entry card to the USB RFID card reader, or scan it with the barcode scanner. The ScanID will be read into the yellow field, and then the system will translate the ScanID and return the participant's details, with a time-stamp, in the list lower down the screen. As with entering manually, the ScanID will change the status to "Active" at the Start "checkpoint" and to "Finished" at the end.

Where two people are manning a checkpoint it is recommended that the greeter performs the scanning of the event entry card and the inputter makes any status changes.

Note that if the scanning process has worked you should receive two beeps, one from the scanner and a second one from the PC itself. It is important to listen out for this second beep from the PC to confirm that the time has been successfully recorded on the

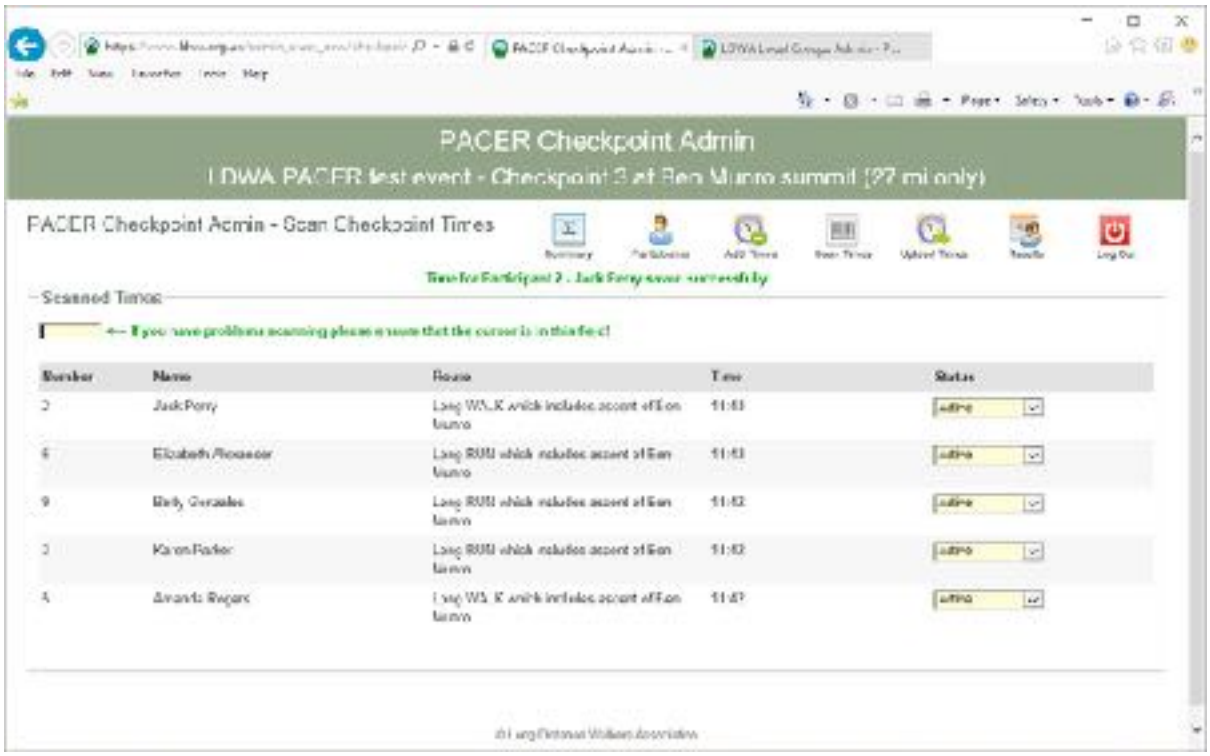
database. (Tip – Make sure that sounds are enabled on the PC and that the volume is set to maximum.)

The photos below show the event entry cards being read into PACER with an RFID card reader and scanned with a barcode scanner

(RFID reader)

(Barcode scanner)

After several participants have been scanned, you will see a screen that looks like this:



***NOTE**: in PACER 1, if you scanned a card twice, you got a warning message. This feature has been changed in PACER 2 because dismissing the warning message could considerably slow down the scanning process if participants were allowed to scan their own RFID cards (in real-life situations, often cards get scanned several times "to make sure" and each time this happened, the system would lock and prevent more cards from being scanned until the warning message was dismissed). In PACER 2, if a card is scanned repeatedly, only the time of the first scan is recorded, and no warning appears on subsequent scans. However, if a participant scans, goes away then comes back a few minutes later, after other participants have scanned in the intervening period whilst he or she was away, the warning message will be displayed and will have to be manually dismissed. This is not an issue if using barcode scanners as, unlike RFID readers, they cannot be used by the participants themselves, so the marshal can always retain control over the screen and make sure that everyone is properly scanned.*

If the "participant re-scans after someone else scans in the interval" situation occurs, a warning message will appear. If you press "OK", the second scan time will replace the first. If you press "cancel", the original time will be preserved. If you press "OK", you will see that the participant's name appears twice on the list – only the latest time will however be stored by PACER.

If a participant decides to retire at a checkpoint using scanners then the easiest way to record this is to scan the card in so that they name appears in the list of scanned participants and then just manually change their status from Active to Retired. If you retire a participant, PACER 2 now requires you also to identify where the participant has retired.

Note also, if you navigate away from the "Scan" screen then return to it, the list of previously scanned participants will have disappeared. Don't worry – the data has been captured by PACER. You can check that the data has been captured properly by navigating to the "Results" list:

, and selecting the “all routes” option from the “Route” dropdown box, then pressing “refresh” at the right hand side.

If you accidentally type the participant number into the yellow box (rather than scanning the ScanID), you will get an error message. This is because the system is expecting a seven digit ScanID not a much shorter participant number. It is however possible to manually type the ScanID into this field (just press “enter” once complete) though it is difficult to imagine circumstances when you might need to do this.

Logic – sequence checking

Note that when using both the “add times” and the “scan times” options, it is possible to contrive circumstances where participants try to check in inappropriately. For example, before the checkpoint is officially open, or after it is closed. Or they may try to check in without having visited an earlier checkpoint on their route. Or they may arrive suspiciously soon or late after checking in at the previous checkpoint. PACER will not flag these circumstances. So checkpoint marshals must not over-rely on the system, and should exercise judgement when deciding whether or not to check a participant in, and whether or not to change their status, e.g. to “disqualified”.

Entering times from “Offline PACER”

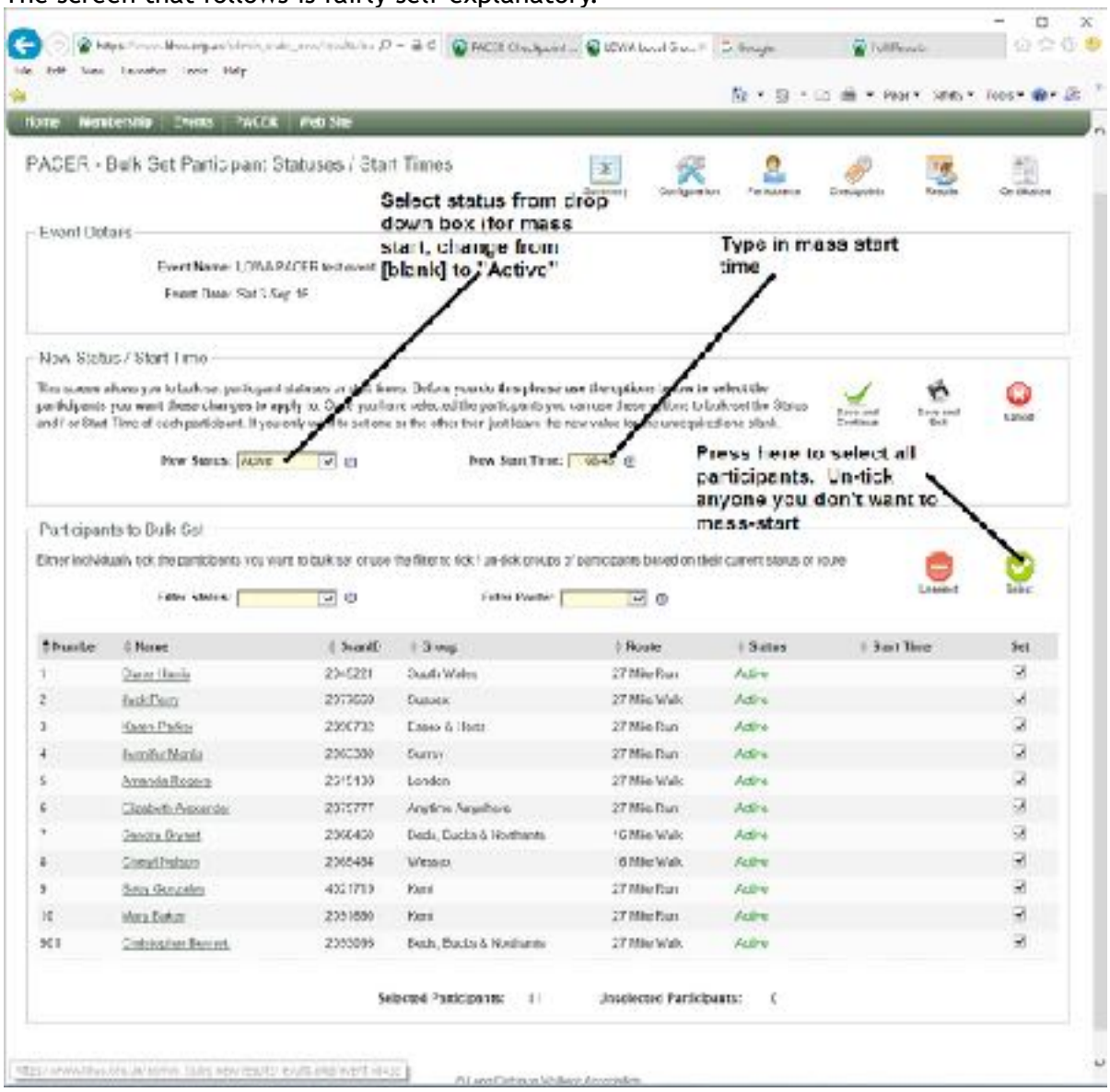
This requires the use of the **third** option - “***Upload Times***”.

This is used to bulk upload participant times into a checkpoint by using a CSV file. It is used
where you might want to upload times if they have been received from a checkpoint which is offline and has generated them from “Offline PACER”. This is explained in the next section.

Setting up a “mass start”

Sometimes, you may want to effect a mass start to your event. Rather than having to hastily scan through all participants as they start, or to laboriously manually type them all in afterwards, PACER will allow mass-setting of start times. To do this, from the “Full” PACER version, navigate to the set statuses / Start Times page (PACER -> PACER – Events List -> (click your event) -> Participants -> Set statuses / Start times).

The screen that follows is fairly self-explanatory.



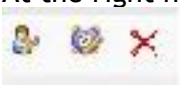
Fill it in as shown in the screenshot, then when status has been set to “Active”, all necessary participants have been selected, and the start time has been entered, press “Save and Continue” or “Save and Exit”. You will find that all participants will be showing the same start time (08:45 in this case), EXCEPT those that were not “ticked” in the mass start screen.

Inevitably, however, some people will turn up late, or will not actually have started despite being included in bulk start. To do deal with this, it is possible to edit participant times and statuses, as described below.

Editing participant statuses and times

Note it is possible to edit participant times and statuses from both the "full" and "checkpoint" versions of PACER, but the process is different.

From the "**full**" version of PACER, simply select the "participants" icon from the top right of the screen, then identify the name of the person whose time / status you want to edit. At the right hand side, you will see three small icons:



Press the FIRST icon (which looks like a person with a tick sign) to edit details such as name, scanID and any other notes. Press the SECOND icon (which looks like a clock) to edit checkpoint times and participant status, press the THIRD icon (a red cross) to delete the **participant and all of their times** if, for example, they were a no-show (**to delete just participant times** use the second icon and then blank out the times). Remember to press "save and exit" once you have finished making changes, or else they will not be saved.

To make amendments from the cut-down "**Checkpoint**" version of PACER, go to the "Add Times" screen and in the blue field, type in the number (the Participant Number, not the ScanID) for the person you want to edit. Say "OK" the warning message that appears, then overtype the desired "Real Time" and select "New Status" from the dropdown box, and press "Save and Next". Note that within the "Checkpoint" version of PACER you can ONLY change the times for THAT checkpoint.

So that is how to run an online checkpoint, or start / finish, for a challenge event. The process for "offline" checkpoints is described in the next chapter.

Using the "Big Buttons" function in "Cut down" PACER to run a Checkpoint on a mobile device

This is a major new innovation for PACER 2 and has been based on extensive pioneering work by Surrey Group. Using this new mode makes it easier to run a remote checkpoint using a mobile device – although the device DOES still need a good (3G / 4G / wifi) internet connection. Further, the use of Bluetooth barcode scanners can make it practical to run a checkpoint solely on a mobile device – both Apple and Android.

To use the new functionality, first obtain the appropriate checkpoint key (see above) and then login on your mobile device to the appropriate checkpoint at https://www.ldwa.org.uk/checkpoint-admin (see screenshots on next page). Once you have logged into the appropriate checkpoint, press on the three horizontal lines at the top right of the screen that appears (see screenshot). Then from the next menu, select "Scan Times – Mobile" (5th option on the drop down menu that appears – see screenshot), and a new, simplified, screen will be displayed (see screenshot).

At this stage, you have three options:

1) **Type in the Scan ID** (NOT the participant number – this will not work) manually – see the screenshots. Remember to press "Return" after entering the number. This is, however, very error prone and should only be used in a last resort, as it is very difficult to type accurately, especially in adverse weather condition

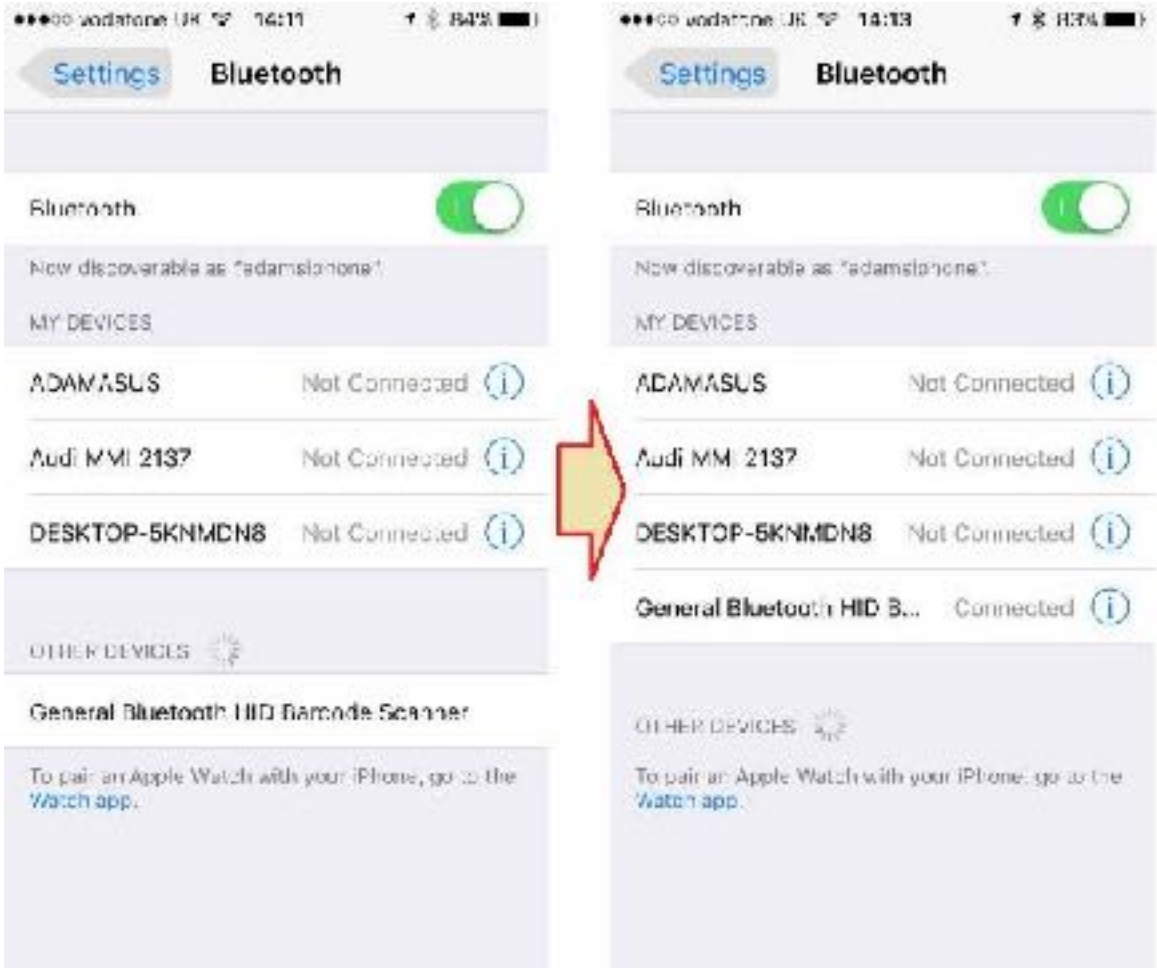
2) **Use a USB barcode scanner** plugged into the micro USB port on your mobile device (only works for Android or Windows devices – not Apple – and requires use of a micro-USB to standard USB adaptor, and an Android device that supports "uPnP" functionality – most modern ones do). This approach is relatively straightforward and has been tested and shown to work. But because the scanner is taking its power from you mobile device, it is liable to drain the battery quickly. There are various solutions which purport to enable you to charge your device whilst simultaneously using a device plugged into the USB port, though none has been tested by LDWA.

3) **Use a USB RFID card reader** plugged into the micro USB port of an Android or Windows device. This has the same limitations as the USB barcode scanner and has not been tested by LDWA.

4) **Use a Bluetooth (BT) scanner**. This is the recommended route. It is a little tricky to set up but once you know what you are doing, it is straightforward. It will work with Android, Windows AND Apple devices. First, you need to get a Bluetooth barcode scanner
(e.g. £29 from Amazon at https://www.amazon.co.uk/gp/product/B01BY7J9QS/ref=oh_aui_detailpage_o03_s00?ie=UTF8&psc=1).

   The advantages of BT scanners are firstly that they have their own rechargeable battery so don't drain the mobile device, and secondly they can be used with Apple devices.

   The scanner has to be both PAIRED and CONNECTED to the mobile device. To do this, squeeze and hold the trigger on the scanner whilst at the same time opening the Bluetooth settings on your mobile device. When the "General HID Bluetooth…" device appears, that means it is PAIRED. Then touch on the option to CONNECT it (see screenshots).



Note, if you are having difficulty getting it to connect, it is likely to be because the scanner is trying to connect to another Bluetooth device nearby (eg your laptop). To avoid this, either move the other device away, or turn Bluetooth on that other device off

Note also when you have finished scanning, it is strongly recommended that you go to Bluetooth settings on your mobile device and "forget" the scanner. This is because if you later want to connect to your laptop, you can inadvertently connect to your mobile device instead, if it happens to be nearby. Repeated inadvertent scanning to a locked phone can cause the screen lock PIN to be repeatedly entered, which may disable the phone. For the same reason, you may wish to disable the screenlock on your mobile device until the scanning session is finished.

Finally, when the scanner is connected, you will notice that the keyboard on your mobile device disappears. It will come back as soon as you disconnect the Bluetooth connection to your scanner.

Once you have connected a suitable scanner, you can start scanning participants. Just make sure before you start that the cursor is in the yellow box at the top left of the screen. You can scan the next participant straight away, even if the previous one appears to be still on the screen. The act of scanning a new one will refresh the screen and enter the new data. You will also see four coloured boxes at the bottom of the screen. These are, from left to right: Number expected [white]; Number through [green]; Number stopped [red]; Number outstanding [yellow]. (see screenshots). For the technically minded, you can download a slow motion video of a bluetooth scanner in use, which shows

the sequence of flashing lights, beeps and screen changes as the card is scanned. Just click this link:
https://www.dropbox.com/s/xq3qzg2tqjhb9qn/Video%2028-12-2016%2C%2014%2043%2058.mov?dl=0

The scanning screen and the process of scanning into an iPhone are shown on the next screenshots:

While scanning, keep an eye on the screen to check for warning messages about participants that are on the wrong route, etc., as you will need to manually handle these. Appearance of their details proves that the data has been successfully transmitted over the network to the main PACER server. You can change participant statuses (e.g. to retire them) by just clicking on the dropdown box next to the large status bar in the middle of the screen but note that you can only “retire” someone from this checkpoint – you are not able to select the “effective from” option on the “cut down” checkpoint version of PACER.

Finally, make sure that the phone screen is on and you have a network connection before you scan a participant – you cannot scan if the phone is hibernating. You are strongly advised to set the auto-lock function on your tablet/phone to ‘never’ to prevent it hibernating. This will keep the screen on and result in a much smoother operation. Hibernation will prevent scanning and importantly, if the Passcode is on, may result in the locking of your device.

6) Managing participants at an “offline” checkpoint

Setting up Offline PACER –important first steps

Running PACER at an “offline” checkpoint is actually very straightforward.

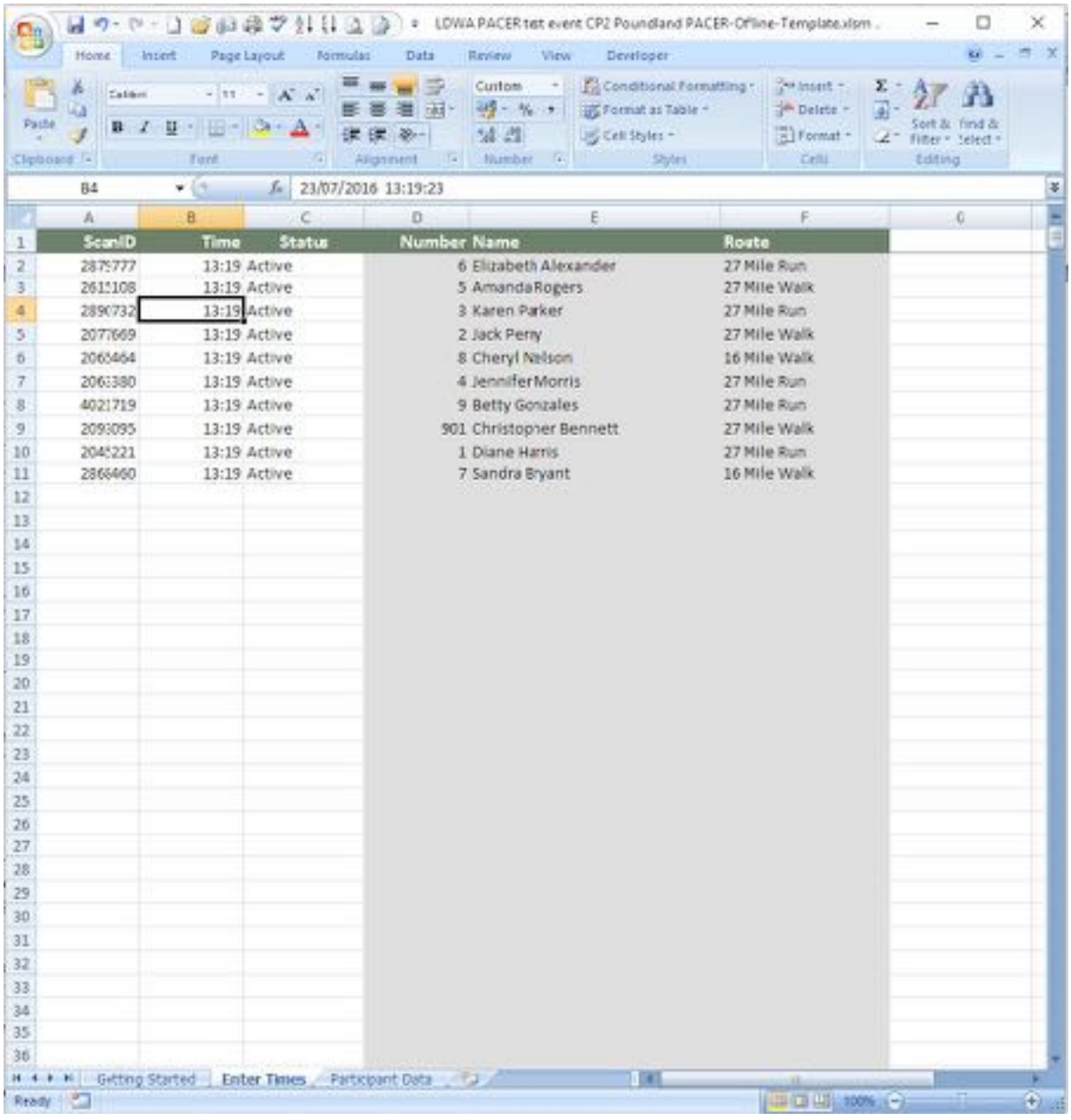
At the offline checkpoint, open the “Offline PACER” spreadsheet that was created for that checkpoint earlier, on a suitable device (most likely a Windows laptop). Navigate to the second tab (“Enter Times”) and, if not already done so, make sure that “Active Content” is enabled.

At this stage, it is important to check that Excel has been configured to “move down to next cell after enter is pressed”. The way to do this is explained earlier, in the section about reading ScanIDs into a CSV that has been downloaded from an online electronic event entry system.

At this stage, it is also important to check that the PC’s clock is correct, since the time stamp on Offline PACER comes from the PC, NOT the PACER server.

Entering times into offline PACER

Put the cursor into Cell A2. If scanning in times then connect your RFID or barcode scanner to the USB port, and you are ready to start scanning participants' event entry cards as soon as they arrive. If you are manually entering times then you will just need to type each participant's number into the ScanID column of the spreadsheet and press enter. Once a few participants have been through, the screen will start to look like the attached screenshot:



ScanID	Time	Status	Number	Name	Route
2875777	13:19	Active	6	Elizabeth Alexander	27 Mile Run
2611108	13:19	Active	5	Amanda Rogers	27 Mile Walk
2890732	13:19	Active	3	Karen Parker	27 Mile Run
2077669	13:19	Active	2	Jack Perry	27 Mile Walk
2065464	13:19	Active	8	Cheryl Nelson	16 Mile Walk
2061380	13:19	Active	4	Jennifer Morris	27 Mile Run
4021719	13:19	Active	9	Betty Gonzales	27 Mile Run
2093095	13:19	Active	901	Christopher Bennett	27 Mile Walk
2041221	13:19	Active	1	Diane Harris	27 Mile Run
2866460	13:19	Active	7	Sandra Bryant	16 Mile Walk

You can edit the participant status manually if needs be. To do this, click in the status cell for the relevant participant and select the new status (e.g. if they decide to retire) from the drop down list accessed by clicking the small arrow to the right.

You can also edit the time, but note you should add it in the format:
23/07/2016 13:19:22

Save the spreadsheet from time to time to protect your data.

NOTE: it is worth disabling the screensaver whilst using Offline PACER, as scanning with the screensaver on will not cause the laptop to "wake up" and may cause the participant time not to be captured.

Accidental double – entering and entering entrants who should not be there

Note if you try and scan or type in the same participant twice, you will get an error message. The ScanID will appear in column A, but no other data will be read, and the cursor will be thrown out of Column A. This is to force you to delete the duplicate ScanID and, if necessary, to amend the original time for the duplicate-scanned participant, in the event that the second time was in fact the correct one.

Also note that no "intelligence" is built into the system to prevent you from scanning participants at a checkpoint which is not on the route that they are supposed to be following. The errant participant will however be obvious in the "Full", online, PACER system and if necessary can be edited as explained in the previous section.

But it is better, if at all possible, to avoid scanning such people in the first place, as they are fiddly to amend afterwards. The checkpoint marshals should exercise discretion in working out why such a participant is at the checkpoint anyway, and whether or not to allow them to continue. As an aid in doing this, when the participant has been scanned, the marshal(s) should read back, from the offline PACER screen, the name, number and route to the participant, to confirm that all is in fact in order.

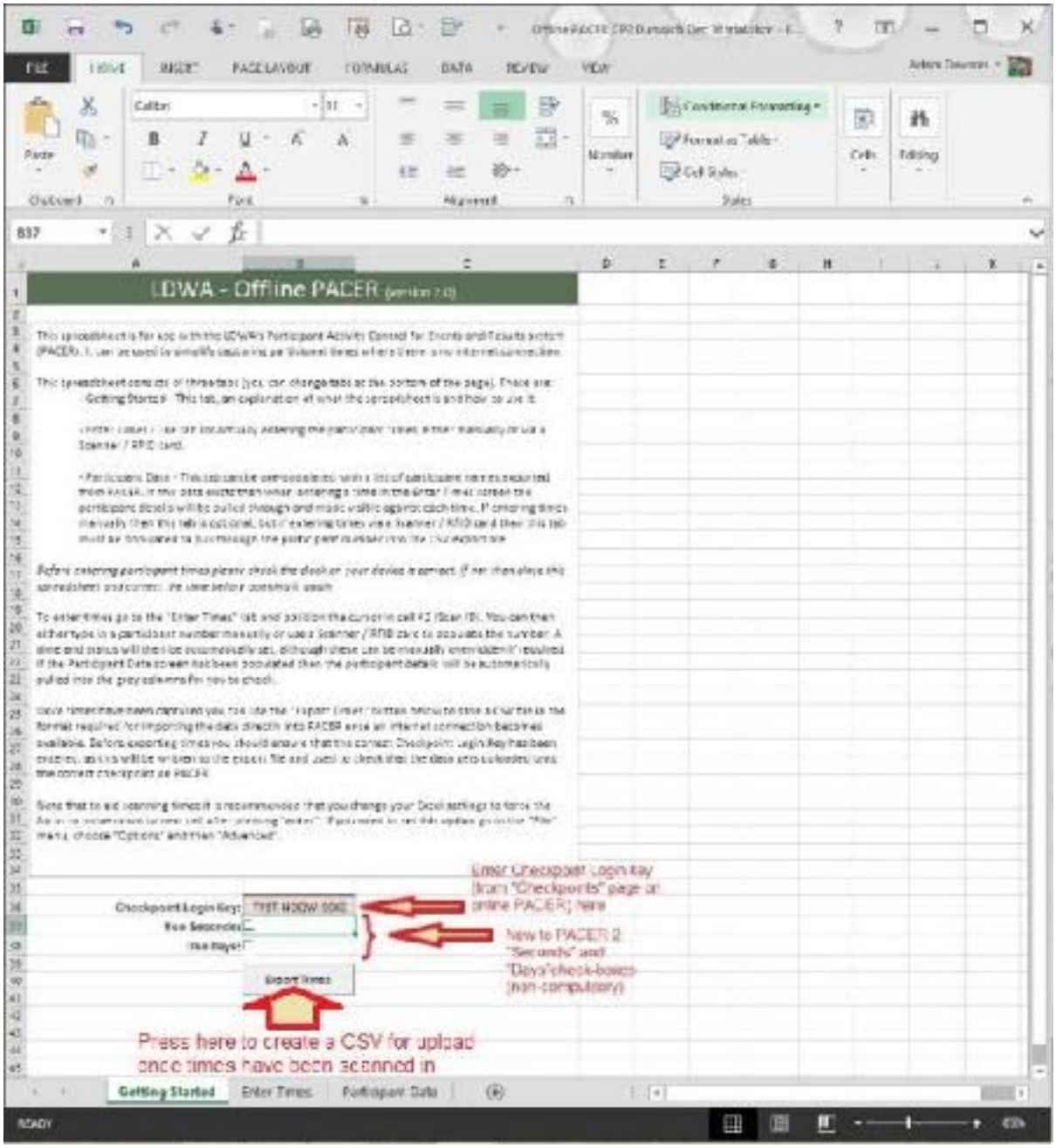
Entering times by typing

Note that if scanning participants and for any reason your scanner stops working, it is possible to change to manually entering times by reading EITHER the Participant Number OR the ScanID off the event entry card and typing it directly into the next empty cell in Column A.

NOTE: However if doing this, it is possible to manually scan a participant's RFID card and then later to type the same participant's number into Offline PACER- e.g. if the broken scanner is repaired. In this circumstance, the participant will be actually be recorded twice. If this happens, an error message will be generated when the offline PACER results come to be uploaded, but it is safer to glance through column D of the spreadsheet from time to time, to make sure that the same number does not appear more than once.

Exporting participant times out of offline PACER

Once the final *[though see below about intermediate stages]* participant has passed through the checkpoint, return to the first tab “Getting Started”, and press the “Export Times” button.



This creates a CSV file which will be used subsequently to upload the checkpoint’s participant times into PACER. Save it somewhere memorable on your laptop. (Note after you press “export times”, on some systems, the “spinning circle” system activity indicator which replaces the cursor, will appear to carry on spinning – however, as long as the screen “NN rows exported to CSV file” appears, the process has been successful and you can press the “OK” button).

NOTE the following points about the Offline PACER protocol:

- It is possible to do several Offline PACER exports – each time, a new CSV file will be created and automatically given a new name. Each file contains ALL the participants, not just the increments since the last one
- If the checkpoint is open for a long time, it is wise to do intermediate uploads (see below for how to do an upload) so that HQ is not waiting for hours until any data at all is received. If several uploads are carried out, then any NEW participants are just added to the data for that checkpoint that is already in PACER. If changes are made in the new upload to data about participants that have already been uploaded, then the changed data OVER-WRITES the old data
- The CSV file is actually very small and only contains three pieces of data for each participant – Number, Time and Status. Typically the file should only be 1 or 2 KB, which will make it quick to upload

Getting Offline PACER data into Online PACER

Once the CSV file has been created, the next task is to get it into PACER. There are three basic approaches for doing this. The first is to get online, log on to PACER and upload it directly. The second is to email it as an attachment to someone who can upload it for you. The third is to upload it to cloud storage (like Dropbox).

NOTE: *Thames Valley Group have conducted excellent research into the use of apps to move the offline PACER CSV file from the laptop to a mobile device which can then be carried to a point with mobile data signal for upload. The work is at an early stage but peer-to-peer networking apps like Lenovo Connect2 and Feem v4 (which create and use local networks but don't need to be online) seem to offer most promise. Contact internet@ldwa.org.uk to be put in touch with experts who can advise on the latest position.*

Of course all approaches require you to be online which will mean relocating yourself (or the data) away from the checkpoint which is clearly offline. The second (email) approach may have the benefit over the first of being potentially quicker to create an email and add an attachment, and also potentially of requiring less data to be transmitted because no PACER screens are viewed. And if you are using the "cloud" approach, you will also need to alert someone who has access to online PACER that they need to download the file and load it into PACER. Feedback from users on which approach works best would be appreciated.

Any of these approaches requires an internet connection and the way to do this is either to relocate the laptop which is running Offline PACER, at a suitable quiet period in the proceedings, to a site where network access can be gained, or to save the CSV file to a memory stick and give it to someone who can take it to a laptop where access is available.

Either way, once the CSV file is received by someone who can access either "Full" PACER or the "cut down" version for the checkpoint in question, they need to upload it into PACER.

To do this, go to the appropriate checkpoint (either using the appropriate checkpoint login key to access "Cut Down" PACER", or from the "Checkpoints" screen in the "full" version of PACER).

Note that it is VERY IMPORTANT to get the right checkpoint.

Select the "Upload Times" icon. On the next screen, select the "Upload" icon, navigate to the CSV file received from offline PACER, and press "open". Very quickly, the data will upload and you will be taken back to the "Event Checkpoints" screen (in "Full" PACER) or the "Event Summary" screen (in the "cut down" version).

Important note about selecting the right checkpoint to upload to

Note that if you are uploading the CSV to the checkpoint in the "Full" version of PACER, it is important that you make sure you are uploading the data to the right checkpoint. However, PACER will check that you are adding it to the "right" checkpoint, so you cannot for example accidentally upload CP3 data to CP2. It does this by comparing that the checkpoint login key that you entered into offline PACER when you configured the offline checkpoint, matches the key for the checkpoint you are attempting to upload to. If the wrong checkpoint is chosen, you will see an error message like this:

So, offline PACER is easy to use – the main challenge you will find is just in getting the CSV file (which is very small) to someone who has good enough network access to upload it into PACER.

7) Tracking participants as they walk (admin and public)

Background

One of the great benefits of using an online electronic system like PACER is that it is possible to track participants and to get an overview of how the event as a whole is progressing. It is also possible to allow the wider public to follow proceedings, if the "Show Full Results" and "Show Follow Participants" boxes are checked in the Event Configuration screen.

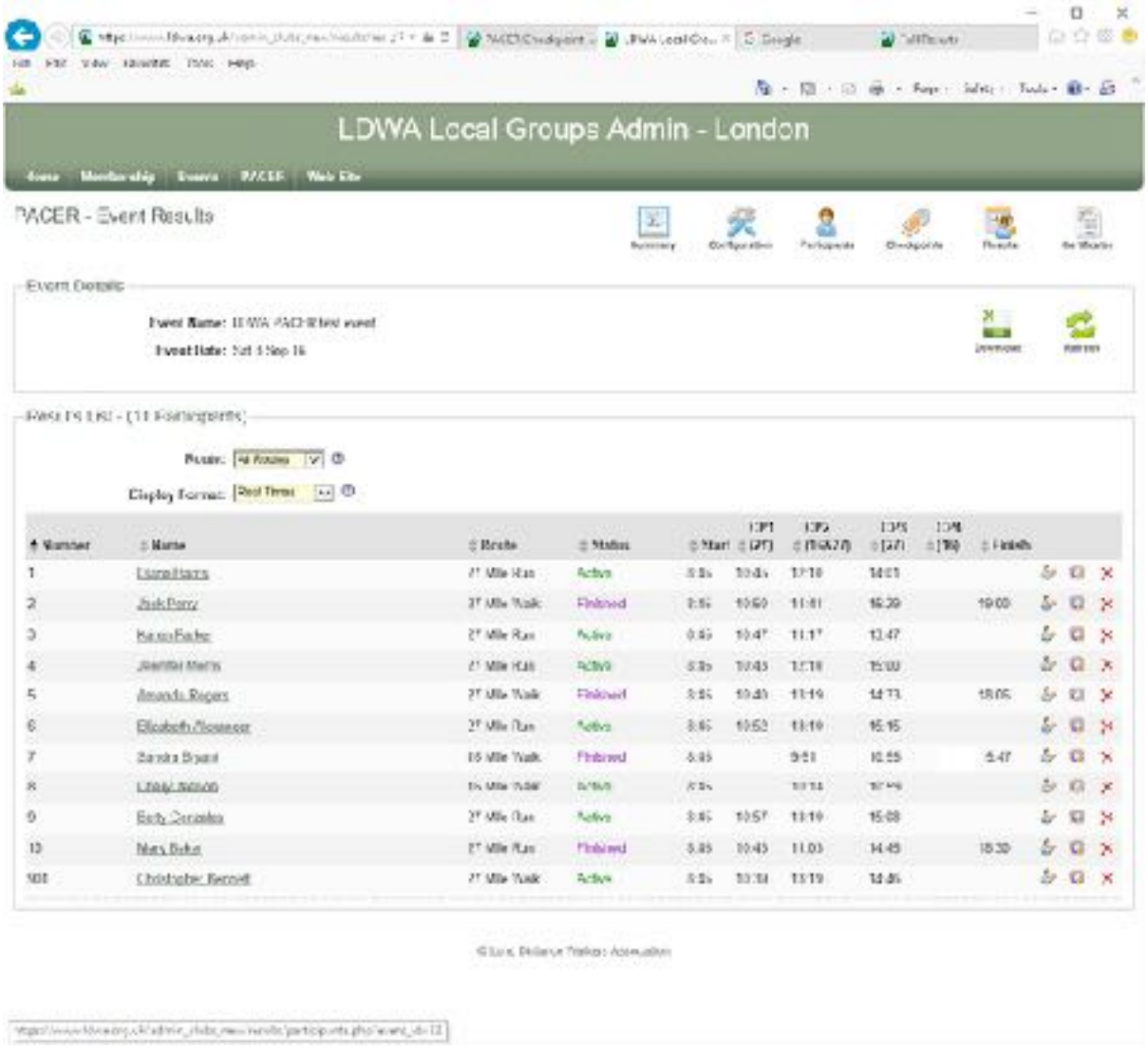
Tracking participants from within PACER (not available to the general public)

As an event administrator, the easiest way to find your way around event tracking is simply to log on to PACER in either the "full" version or the "cut down" checkpoint version, and take a look at the various options. The results are displayed in different formats in the "Summary", "Participants", and "Results" screens (the views are the same in both "full" and "cut down" PACER). You will see that in some cases where summary numbers are shown, indicating the number of participants at a particular stage, the numbers are hyperlinked (indicated by underlining). Clicking on the link will reveal the names and other information about the people at that stage.

NOTE: Participants who did not start the event are not shown in these summaries (nor on the public website)

Potentially the most useful screen is the “Results” – “All Routes” view (accessed by pressing the “Results” icon towards the top right of the screen, then selecting “All Routes” from the dropdown box at the centre left, then pressing “Refresh” towards the top right).

This view provides a single-glance snapshot of where everyone on the event is, at any given time. The screenshot below shows a typical view midway through this “dummy” event:



Pressing the small “up and down” arrows next to the column headings allows results to be sorted by name, rote, status, etc.

***NOTE**: PACER 2 allows Nested sorts (e.g. by route and then alphabetical order of surname). To do this, go to the “Results” screen and click on the “up” arrow to the left of the “Name” column header. Then click on the “up” arrow next to “Route” and you will see the results sorted first by the route and then by alphabetical order of surname within that route.*

It is possible to show “real” times (i.e. what time of day a participant passed a given checkpoint), “elapsed” times (i.e. how many hours from the start) and “leg” times (i.e. how long to travel from one checkpoint to the next). Note that ALL entrants are shown, whether or not they have requested anonymity. Anonymity is only preserved on the public screens (see below).

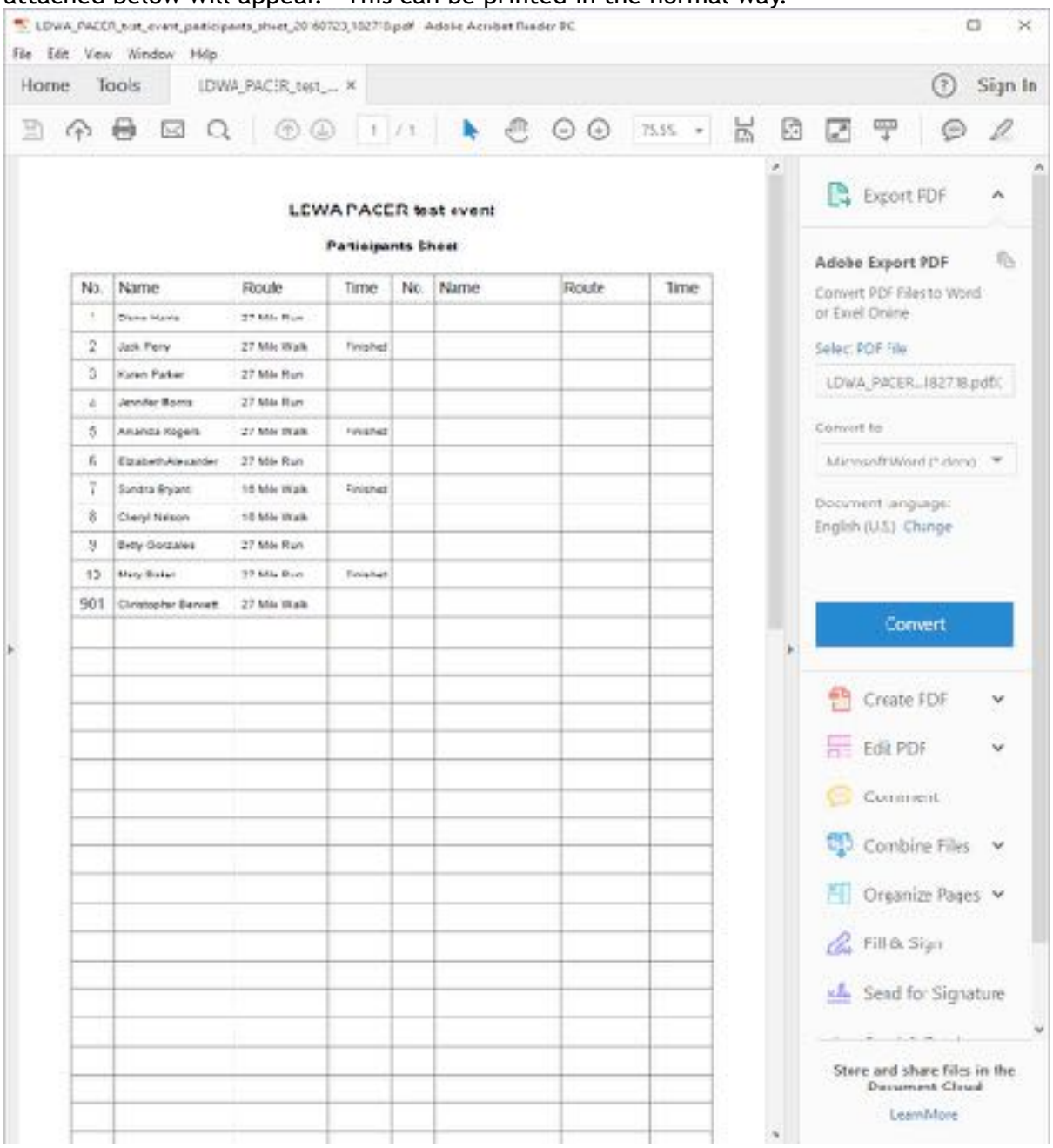
Note that for events with lots of checkpoints such as the Hundred, horizontal scrolling is required to see all of the checkpoint times.

***NOTE**: With PACER 2 there is no need to press the "refresh" button after switching "Display format" etc. (although it is still required on the public results screens)*

Participants Sheet

Event organisers may also find it useful to have a “Participants Sheet”, which can be used as a backup in case of IT problems. To print such a sheet, in “full” PACER, select the “Participants” icon, then “Downloads and Labels”, then select the appropriate type of report from the yellow drop down menu in the “Participants Sheet PDF” box which appears in the middle of the screen. Then press “Participants Sheet”.

Depending on which option you chose from the drop down menu, a sheet similar to that attached below will appear. This can be printed in the normal way.



Tracking participants from the LDWA website (available to the general public)

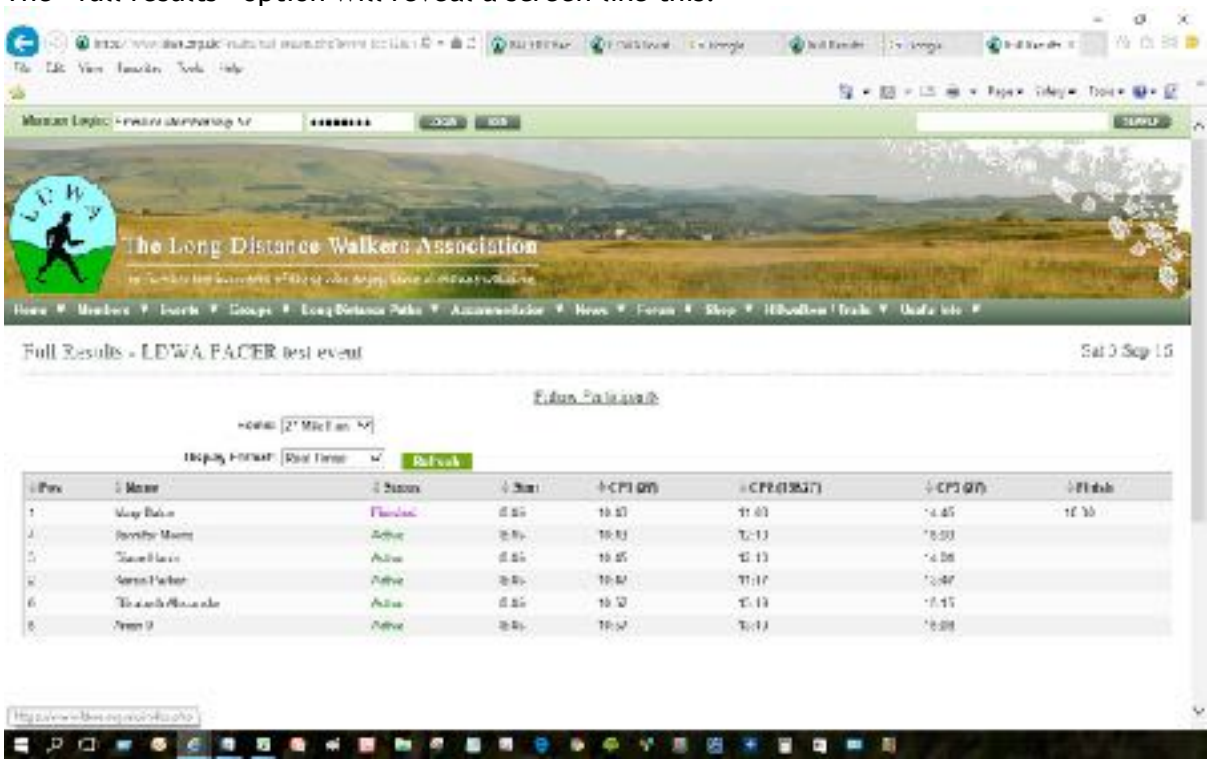
If the "Show Full Results" and "Show Follow Participants" boxes are checked in the Event Configuration screen, then the general public can view the events in "real time", too.

To do this, visitors click on this link:
www.ldwa.org.uk/results

***NOTE** - this page is on the PUBLIC internet, and with the advent of PACER 2, a MENU LINK has been built navigate to it from the LDWA website. From the LDWA home screen, visitors hover over the "Events" option in the top menu, then click on "Results" which is at the top of dropdown menu list which appears.*

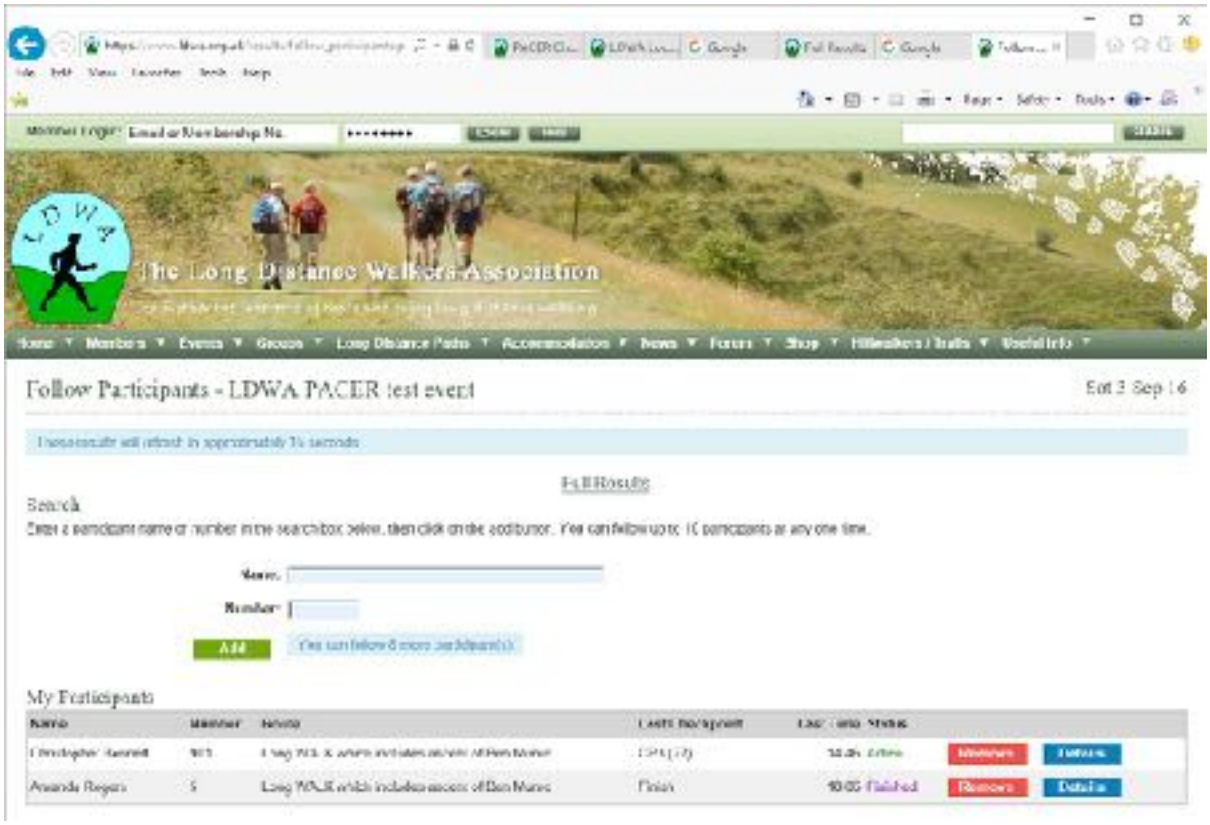
After clicking this link, the visitor selects the event they are interested in from the list that appears, and clicks "full results" or "follow participants" as appropriate.

The "full results" option will reveal a screen like this:



Exactly as in the "Results" screen in PACER used by the event administrators, it is possible to select different routes (or all routes) and real, elapsed or leg times in the view that is displayed. You will see that on this "public" screen, entrants who requested anonymity are just shown as "Anon NN", where "NN" is their entrant number.

Finally, by selecting the “Follow participants” screen and typing in the participant name or number into the appropriate blue box, one or more (and up to ten) selected participants can be tracked in real time. Note that this screen will refresh every 60 seconds.



NOTE: If you have been setting up test events, once you have finished testing, you may wish to UN-check the “Show full results” and “Show follow participants” options as otherwise all the details of your dummy events will be visible to the general public.

8) Producing certificates and other statistics at the end of the event

Principles

The final step in any challenge event is printing certificates and publishing results. In terms of certificates, if it is possible to take a printer (with plenty of ink and paper!) to the HQ, it is possible to print certificates off there and then, so participants can take them home with them at the end.

Publishing results

From the "Results" screen in "full" PACER, you will notice that there is a "download" button at the top right. Use this to download a CSV file of the results AS SHOWN ON THAT SCREEN. So if you want all results, remember to select the "All Routes" option from the dropdown "Route" box". If you want elapsed times rather than "real times", select that also. Every time you change anything, take care to press "refresh" just to ensure you get the right data.

You can then analyse and reformat the downloaded data in any way you want, to make it suitable for your favoured publication medium.

Of course, if you elected to make your event publicly viewable, the results can also be accessed via the LDWA website, as explained in the previous section.

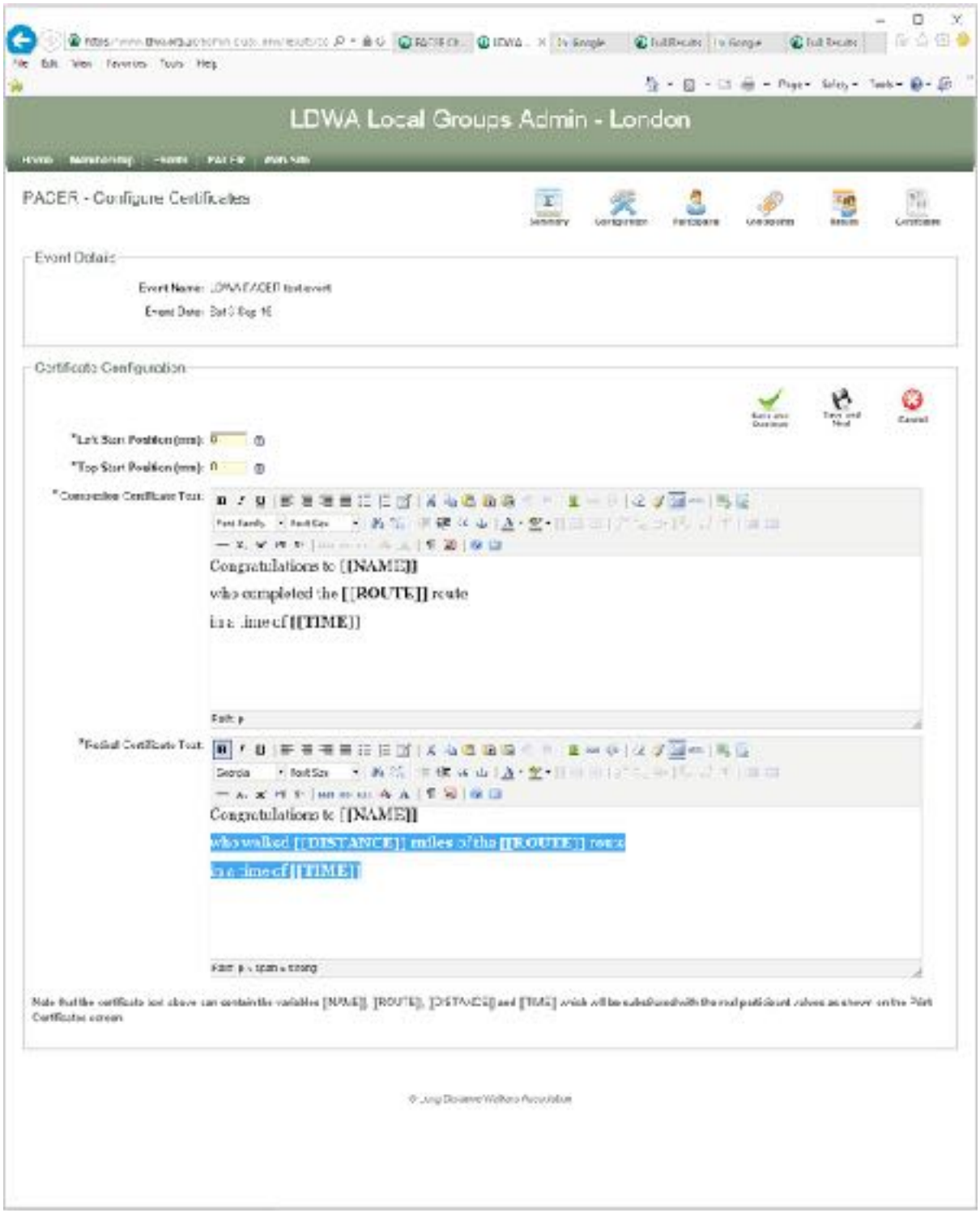
Configuring certificates

To configure and print certificates, navigate to the certificates page and press the "Certificates" icon (PACER -> PACER Events List -> (select your event) -> Certificates)

The screen that appears will have a list of those participants that have already finished the event (if any). You may also see a warning / error message at the top of the screen- don't worry, this will disappear at the next stage.

Press the "configure certificates" icon:

The certificates can be edited in this screen:



Again, the screen is fairly self explanatory. Note the following:

- The text in the double square brackets is variable – again it is clear what these mean. You can move them around to different points in the certificate but DON'T delete them or edit the text within the square brackets (**NOTE:** if you selected the "Show seconds" option, seconds will also be printed on the certificate)
- There are two screens – retirees will get a different certificate which shows how far they walked of the total route. For this to work properly, you will need to set the "Effective from" checkpoint – i.e. the one at which they retired - in the relevant participant's "Participants Times" screen

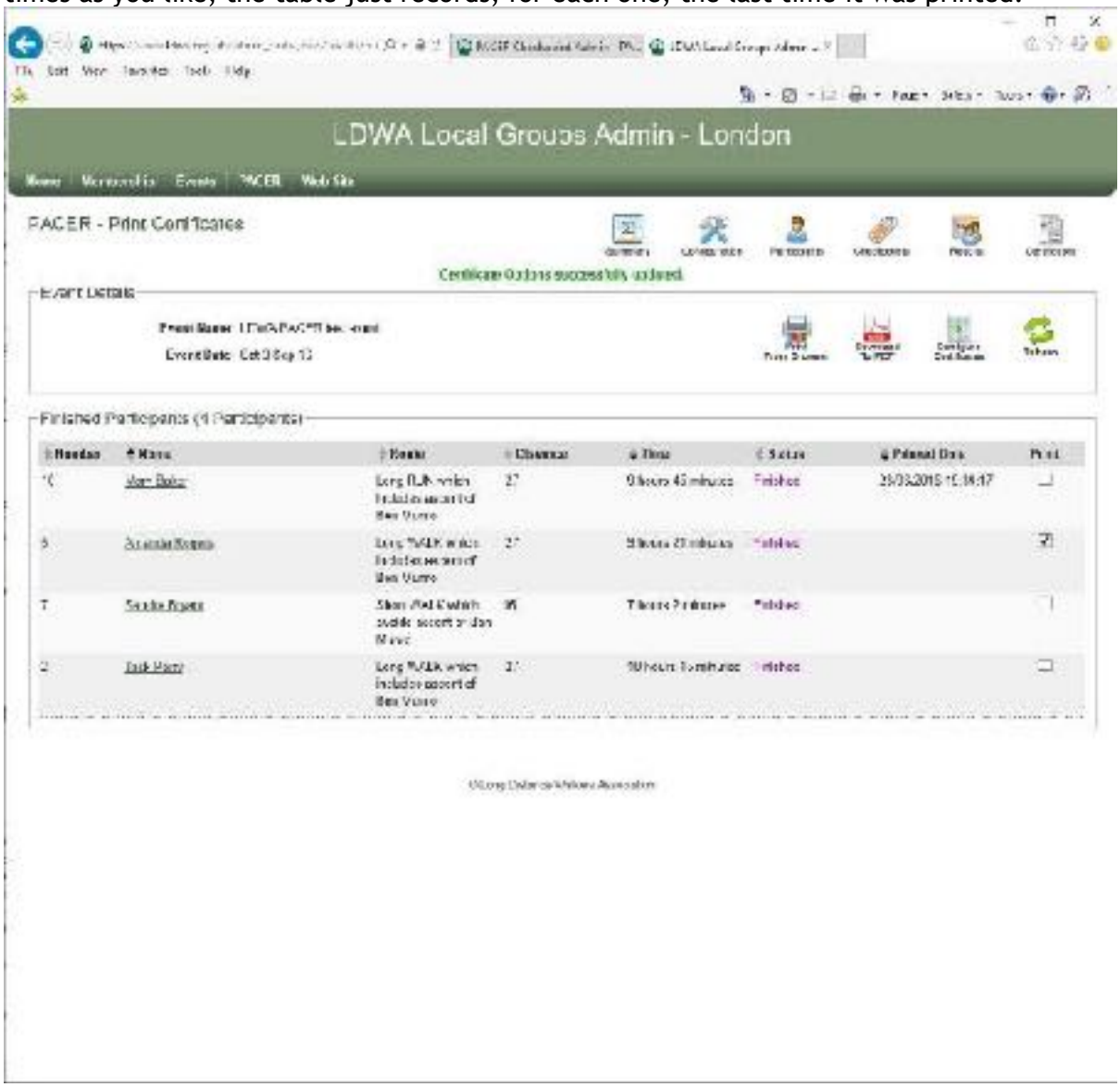
- You can change the text outside of the square brackets to anything you like
- It is possible to change the text font, size, location, justification and colour using the relevant dropdown boxes on the screen
- It is also possible to include images on the certificate (by pressing the small icon that looks like a green TV screen second from right in the top row of buttons). But it is recommended that you DON'T do this (or if you do, make sure the image is very small and simple). This is because each certificate is downloaded individually over the network, and big downloads can both use a lot of data (and potentially cost money if using a metered connection) and be slow. It is better to pre-print the images onto certificate "blanks" and feed them into your printer to be overtyped with the text you set in the "Configure certificates" screen
- Using pre-printed "blank" certificates also has the advantage that if the printer fails for any reason, then as a last resort, entrant names, times and other details can be hand-written into the pre-printed blanks.
- The "Left Start" and "Top Start" options allow you to move the text around on the certificate, so for example it will appear in the middle, or the top left, etc.
- **NOTE:** for more advanced formatting options, e.g. to set a left- or right- margin for bi-fold certificates, use the "table" button (10th from left on menu bar) and manually set borders to force text into a confined area.
- It is HIGHLY recommended that you do a trial print of some certificates well in advance of the event, as they almost never print out the way you expect the first time.

Postioning the variables (the text within the square brackets) to line up precisely with any background text on your certificate can be quite a tedious process. It is planned that future released of PACER will improve this process but currently the simplest solution is to combine any background text (eg "this is to certify etc" with desired variables (eg [[NAME]], [[TIME]] etc) and print as a single block onto the blank certificate. You then only have to position this complete bock on the certificate rather than individual elements.

Printing certificates

Once the certificate template is configured to your satisfaction, press “save and exit”, which takes you back to the “print certificates” screen.

From here, you can select which certificates you want to print by ticking the “print” box at the right, next to those certificates you want to print. You can print each one as many times as you like; the table just records, for each one, the last time it was printed.



There are a few more points to remember when printing certificates:

NOTE: *PACER2 has a new facility to print from PDF, which can help simplify the printing process and avoid browser- specific issues. Using the PDF route is described at the end of this chapter*

The text below refers to printing direct from the internet (using the “print from browser” button, fourth from right on the menu:

- Because this is printing via the internet, your web browser may add unwanted headers and footers (like date, page number, etc.) to your certificate. You will need to go into your browser settings to disable this. Unfortunately, the settings for each type of browser are different, so you may have to do some digging to find out how to disable them (usually it is fairly easy – the following points describe how to do it in Internet Explorer:
- For example, in Internet Explorer, BEFORE you print a certificate, from ANY web screen, select "File" -> "Page Setup" from the top left of the screen (see

- Then set all the headers and footers to "empty" and press "OK", as shown in the right hand screen above. These settings will be "remembered" for all pages you subsequently print from Internet Explorer, including the event certificates your subsequently print using the protocol described earlier in this section
- Separately you can use your normal printer settings dialogue box to change paper orientation (landscape or portrait)
- There have been persistent problems in printing from Safari on Apple laptops. Please check carefully whether certificates print properly from your Apple MacBook or similar, BEFORE committing to use it at the event. Using a different browser on your MacBook (e.g. Safari) will usually resolve the problem

NOTE: *Practical experience with PACER "in the field" suggests that Chrome is generally a better browser than either Internet Explorer or Safari, especially for printing PACER certificates. For example, changing margins in Chrome can be done simply by dragging them on the print preview screen which automatically appears before any certificate is printed. Similarly, unwanted headers and footers can be removed from the "more settings" option on the print preview screen.*

The photo below shows a typical printed certificate. This is a "plan vanilla" certificate, with no changes made to the standard text, font or placement, with no background images, and without the web browser headers and footers removed.

***NOTE**: PACER 2 includes a new option to print via PDF, which avoids the "header and footer" problem, and also the Safari problem as the certificates are no longer printed direct from the internet.*

To do this, select the certificate(s) you want to print, then click on the "Download to PDF" option, third from right on the menu bar:

What happens next will depend on how your computer is configured to open PDF files. But normally, the PDF file will open, or can be opened, which will display the certificate(s) as they will be printed. Check that they appear as you expect, then print as normal - using pre-printed paper "blanks" if necessary.

Printing certificates is the final last stage in event management.

Please send feedback about the performance of PACER to internet@ldwa.org.uk so that necessary enhancements can be made, and bugs corrected.

Good luck with your event!