



October 2011

# **Minuteman EVR**

## Tube Event Recorder

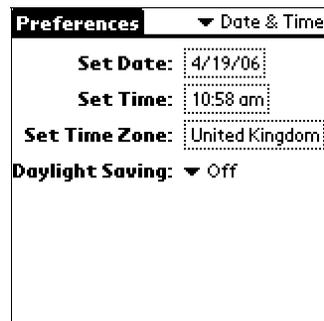
### User Guide

## Before Going Out to Site

**1** Before going out to the site, you should check that you have the following:

- Minuteman EVR
- Padlock
- Palm, with Cable
- Vent Plugs
- Equipment for Installation  
(Tubes, Chinese fingers)

**2** Check that the Palm is fully charged and that the latest version of Collect is installed. Ensure that the time and date set on the Palm is correct, as the Recorder will synchronise to it during a set-up.



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### Tips

**1** The latest release of Collect is always available for download from:

[www.ca-traffic.com](http://www.ca-traffic.com)

**2** We recommend charging the Palm once the battery level drops below half.

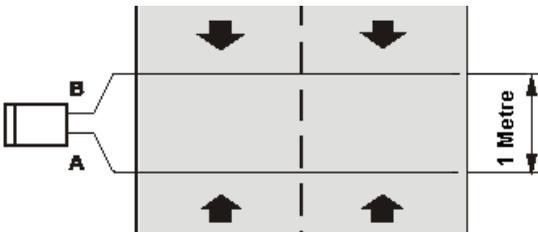
Dependant on the model of Palm, this can mean replacing the battery, or simply placing the Palm in the cradle.

# The Ideal Site

- 1** To ensure the most accurate tube readings:
- Tubes must be 1m apart at each end.
  - Tubes must be pulled taut.
  - Tubes must be at a 90° angle to the traffic flow.
  - There should be 2-3m of tube between the Counter and the nearest wheel.

- 2** For optimum performance, the unit should not be installed:
- Where vehicles are likely to cross the site at varying angles.
  - Near where vehicles are likely to park.
  - Near where pedestrians are likely to be crossing.
  - Where vehicles are likely to be stopping.

**Due to the precision of the Minuteman EVR, vent plugs MUST be used to ensure the quality of data.**



- 3** The Date & Time can be set by tapping **Prefs** on the Palm main menu, and then selecting **Date & Time** from the top right drop down menu.

## Installation - Short Term

- 1 The road nails should be 1m apart on both sides of the road, and preferably not in a position where they will be constantly driven over. This will assist the longevity of whichever equipment is used to secure the tubes.

- 2 Position one Chinese finger at the vent plugged end of the tube, and the second slightly further down the tube than the width of the road, to ensure it will reach across.



- 3 When it is safe to do so, attach the Chinese finger on the vent plugged end to the nail. Safely cross the road carrying the rest of the tube. Keep the tube held flat across the road surface, and when it is safe to do so, attach the second Chinese finger to the nail.

- 4 Pull the tube taut. We recommend pulling the tube at least 10% through.

After a vehicle passes over the tube, they should be taut enough to return to their original position.

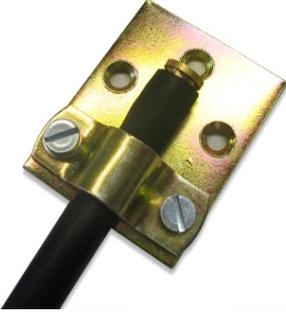
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### Tips

- 1 There are numerous ways of installing tubes. The methods detailed here are **suggested** methods only, and will not necessarily suit every circumstance.
- 2 The quality of the road surface is important. If the road is crumbling away, it is advisable to look for a more suitable location to install the nails.

## Installation - Medium Term

- 1 Assemble the clamps on the vented plug end of the tubes as shown below.



- 2 The plates should be nailed to the road 1m apart with the tubes perpendicular to the flow of traffic.

Put nails through the two holes either side of the road tube. Using a third nail can break up the tarmac below.

- 3 The clamp should be fitted around the tube as shown below, and nailed to the road, ensuring the tubes are parallel.



- 4 Pull the tube taut (10% through) and wrap fabric insulation tape around it, ensuring it cannot pass back through the clamp.



- 3 The installation method should be determined by the number of vehicles expected during the survey.

A high flow short term survey and a medium term low flow survey may well use the same installation method.

- 4 For security, once the set-up is complete and the Palm and cable are disconnected, ensure that the EVR's lid is padlocked shut.

## Setting Up the EVR

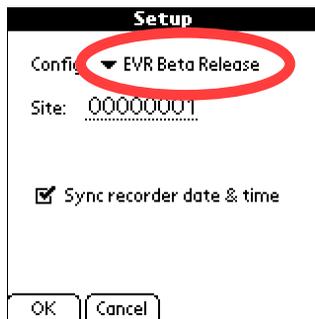
- 1 With the Palm connected to the EVR, run Collect.



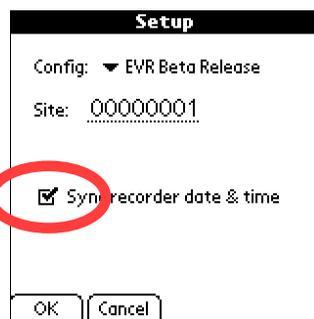
- 2 Tap **Setup**.



- 3 Tap the **Config** arrow and tap the desired configuration from the drop down list.



- 4 Ticking the 'Sync recorder...' box will synchronise the time on the EVR to that of the Palm.



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### Tips

- 1 By default, completing a set-up synchronises the time on the EVR to that of the Palm.

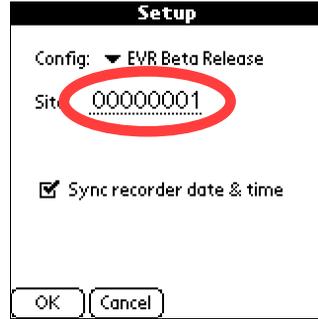
It is therefore worthwhile ensuring that the time is correct on the Palm before going out on site.

# Inputting the Site Number

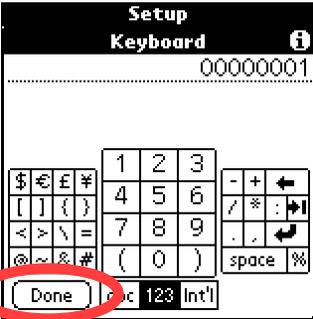
- 1 To assign a Site Number, first enter the **Setup** form.



- 2 Tap on the Site Number, and then tap on the **123** on the bottom right of the graffiti



- 3 Input the number and tap **Done**.



- 2 The site number is used to identify each site. It is important to make a note of the number assigned to each site, to ensure the correct data is allocated to the correct site.

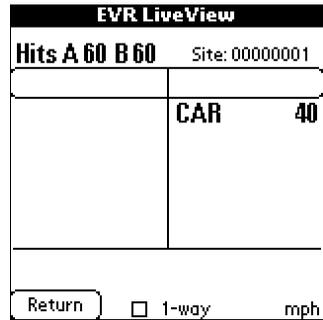
- 3 The site number can be a maximum of 8 digits long. All numbers entered are padded to 8 characters, so for a site number '00000012', you need only enter '12'

# Checking the Installation with Live View

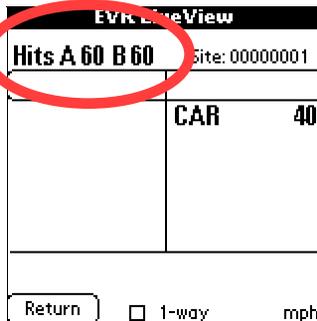
1 From the Main Screen, tap **Live** to enter Live View mode.



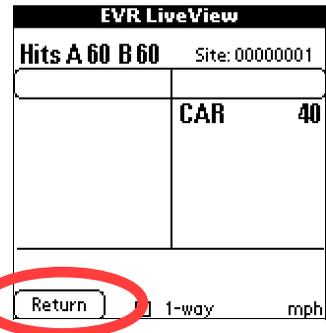
2 The EVR will configure itself as cars pass by.



3 The number of tube hits is displayed in the top left. These should stay about equal.



4 Once you're happy with the live results, tap **Return**.



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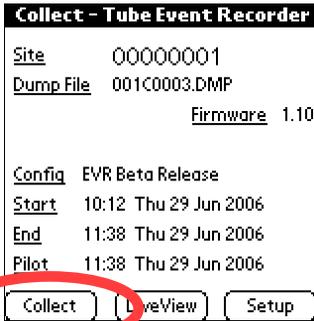
## Tips

1 Live view displays the data collected in real time, and is used to check the installation quality.

2 Under busy conditions, the simpler algorithm used by the Palm may produce some erroneous results. These will not carry over into VDA-pro however, thanks to the more advanced algorithm used when importing the data.

# Downloading

- 1 From the Main Screen, tap **Collect** to retrieve the data from the counter.



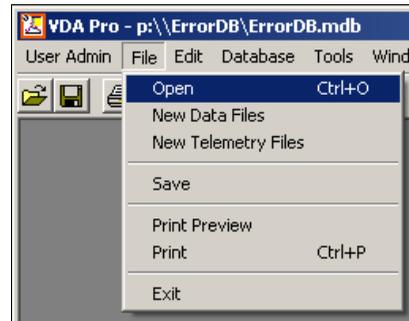
- 2 With the data on the Palm, place the Palm into the cradle, and perform a HotSync.



- 3 Click **Download**. The data will be downloaded to the Data Directory shown on screen.



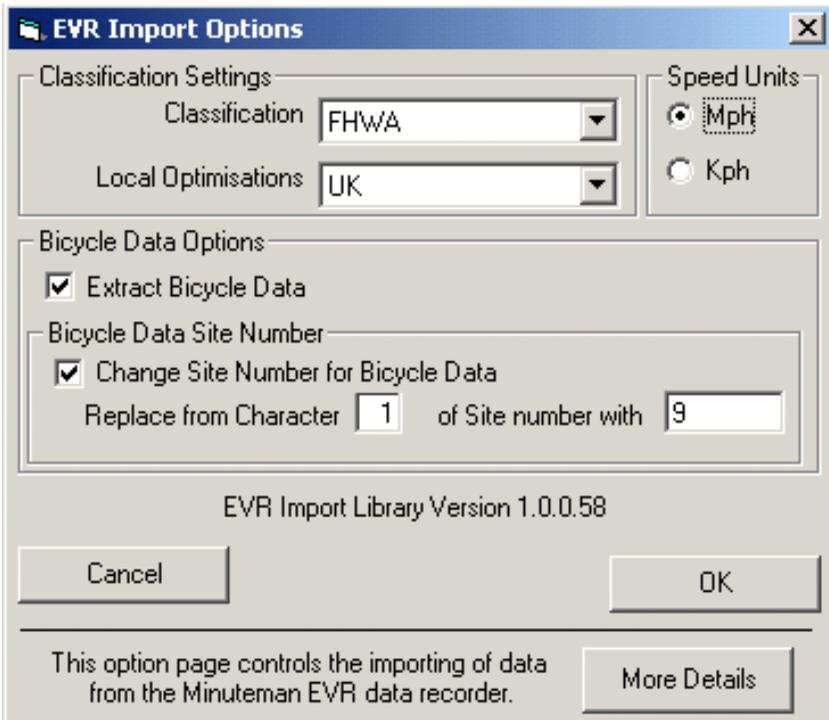
- 4 The .dmp files can then be opened in VDA-pro.



- 3 Tapping **Collect** clears the data from the Recorder.  
  
For this reason, it is advisable not to Clear the Data on the Handheld until you have verified that it has downloaded successfully.

- 4 You can initiate a HotSync by using either the HotSync button on the cradle, or by tapping the HotSync icon on the Palm main menu.

# Setting Up VDA-pro for EVR Data



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## Tips

- 1 To open the EVR Import Options form, go to **Tools > EVR Import Options**, or press **F7**.
- 2 Selecting the applicable **Local Optimisations** Scheme tailors the data processing algorithm to best cope with local traffic.

## 1 Classification Settings:

Select the **Classification Scheme** by clicking on the drop down menu and selecting the scheme.

The **Local Optimisations** can be selected in the same way, however the default 'UK' scheme will be optimal for most situations.

## 2 Speed Units:

Controls the output units for speed information

## 3 Vehicle Data Options:

Ticking the **Extract Bicycle Data** checkbox will enable loading of the bicycle data collected by the EVR into a separate file. It is advisable to also change the site number for the bicycle data, using the **Bicycle Data Site Number** options.

The first box specifies which character will be changed, the second box specifies what will replace that character.

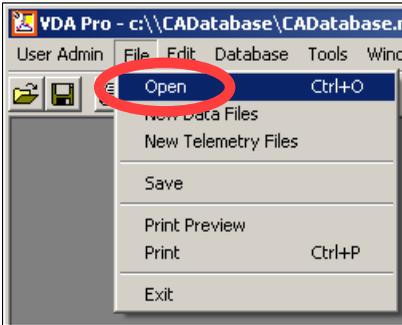
In the screenshot, the **first** number from the site number will be replaced with a **9** when the file is loaded. For example, site number 00000100 would become 90000100.

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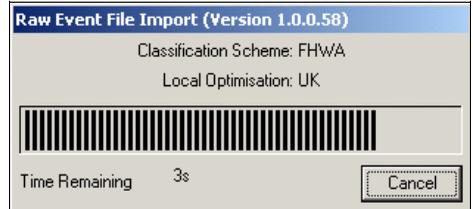
3 If there is no Bicycle class in the chosen classification scheme, and **Extract Bicycle Data** is not ticked, the Bicycle data collected by the EVR will be ignored when the file is imported.

# Importing EVR Data into VDA-pro

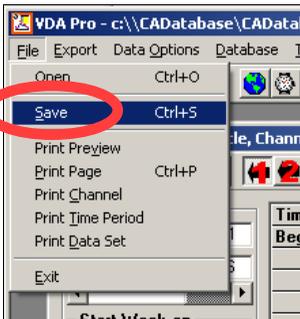
1 Load the data into VDA-pro as usual.



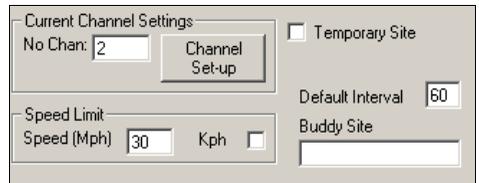
2 The data will be automatically processed by VDA-pro



3 The data can then be viewed and saved into the database.



4 How the Per Vehicle Data is interpreted can be configured using the **Speed Limit** and **Default Interval** options on the Site Set-up form.



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## Tips

1 Collected data can also be loaded by dragging the desired .dmp file and dropping it into VDA-pro.

2 Once the EVR data is saved into the database, it can be treated in the same way as any other data in VDA-pro.

# Working With Per Vehicle Data

**1** As well as viewing speed, class and volume information, VDA-pro can also display individual vehicle data for every vehicle counted by the EVR.

To do this, load a file **individually**, and **not** as part of a range (either from the **File List**, or by double clicking on a day in the **Calendar**).

**2** With the file loaded, highlight the period of interest in the data view window.

Time	Mon	Tue	Wed	Thu	Fri
Begin	Apr 24	Apr 25	Apr 26	Apr 27	Apr 28
0:00	12	26	16	14	
1:00	3	4	8	10	
2:00	4	2	0	2	
3:00	3	1	1	2	
4:00	2	0	2	1	
5:00	5	7	6	6	
6:00	20	23	15	18	
7:00	108	107	102	99	
8:00	261	242	257	260	2
9:00	176	201	207	195	1
10:00	154	179	199	189	2
11:00	180	192	182	202	2
12:00	157	175	224	189	2
13:00	221	198	222	210	2
14:00	198	196	214	218	2
15:00	197	216	219	223	2

**3** Right Click on the highlighted area and choose **Show Selected Vehicles**.

Time	Mon	Tue	Wed	Thu	Fri
Begin	Apr 24	Apr 25	Apr 26	Apr 27	Apr 28
0:00	12	26	16	14	
1:00				F1	
2:00				F5	
3:00				F5	
4:00					
5:00				Ctrl+C	
6:00					
7:00					
8:00					
9:00					
10:00					
11:00					
12:00					
13:00					
14:00					
15:00					

**4** The Per Vehicle Viewer allows you to view the data recorded for every vehicle counted in the period selected.

Time Stamp	Speed[M]	Class	Gap	Lane
21/09/2005 14:25:17	34.8	2	0	1
21/09/2005 14:25:29	29.2	2	12.2	1
21/09/2005 14:25:39	22.6	2	9.7	1
21/09/2005 14:25:42	13.7	2	2.6	1
21/09/2005 14:26:31	44.4	2	24.9	1
21/09/2005 14:27:30	36.4	2	24.9	1
21/09/2005 14:28:28	38.4	5	24.9	1
21/09/2005 14:29:53	43.6	2	24.9	1
21/09/2005 14:29:54	44.4	3	1.3	1
21/09/2005 14:29:59	47.2	2	4.5	1
21/09/2005 14:30:01	47.4	2	2.4	1
21/09/2005 14:30:20	46.2	2	18.8	1
21/09/2005 14:30:43	37.2	2	22.3	1
21/09/2005 14:30:58	41.2	2	15.4	1
21/09/2005 14:31:32	36.6	2	24.9	1
21/09/2005 14:31:34	35.7	2	1.8	1
21/09/2005 14:32:17	35.3	2	24.9	1
21/09/2005 14:32:18	35.7	2	1.2	1
21/09/2005 14:32:36	41.2	2	17.4	1

**3** Clicking on **Show Vehicles** shows vehicle data for all of the vehicles in the currently loaded data set.

**4** In the Per Vehicle Viewer, the table of data can be sorted by clicking on the column title in the **Sort By** section.

# Additional Graffiti Commands

The following commands are written onto the graffiti pad whilst connected to the Recorder:

- 'i' or 'y'            Sleep Mode
- 's'                    Special Action (Pass Code Required)
- 't'                    Time Check

## Clearing A Recorder Without Collecting

To clear a recorder without collecting the data, write an 's' on the graffiti pad, and then enter the correct pass code. All data in the recorder will then be erased.

Clear Recorder pass codes are 911 and 944

## Clearing the Database

To remove all the DMP files from the database, write an 's' on the graffiti pad and then enter the correct pass code. All files in the database will then be removed.

Clear Database pass codes are 119 and 449

# Troubleshooting

## Status LED Flashing Rapidly

The status LED will flash quickly if the time and date is not set-up. This can often indicate that the battery has gone flat and the clock has reset itself. Connecting a Palm and entering the Setup screen will, by default, synchronise the Recorder's clock to the Palm's.

## Status LED Not Flashing

The Status LED should flash indefinitely, so long as the battery is providing power. If the Status LED is not flashing, check that the battery is connected securely, and that it is charged.

If you encounter problems onsite that are not dealt with in the manual, you can contact CA Technical Support on 01926 333490.

If you encounter problems with HotSyncing or using the .dmp files collected, check the support page on our website, accessible via the Top Tips or Software sections.

The support page contains guides to getting set-up and using the software available. There are also some commonly needed files available for download, which are often needed during technical support calls. If at all possible, it is advisable to be able to access this webpage during a support call, as it is designed to facilitate quicker fixes to problems.

## Accessories

Stock No	Description
010031	Road Tube "O" 1/2" O/Dia 120' (37Metres) Roll
010033	Vent Plugs
060051	Insulation Tape 20mm Wide
010029	2" PK Road Nails
010030	2 1/2" PK Road Nails
010020	Chinese Finger
010019	Chain, 2m Length Galvanised
	<b>For use with PK Road Nails</b>
010021	Road Clamp "O" Tube 1/4" Hole
010023	Road Clamp Open "O" Tube 1/4" Hole
010024	End Plate "O" 1/4" Hole
	<b>For use with Hilti Nails</b>
020028	Road Clamp "O" Tube .140" Hole
020029	Road Clamp Open "O" .140" Hole
020030	End Plate "O" .140" Hole

## Industrial Palm

- Built for field work
- Sealed to IP67 standards
- Palm Powered
- 16MB Memory
- USB Hot-Sync
- Li-ion Battery
- Custom Connector
- Supports High Speed Download
- 2 Year



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