WinRAC Plus

Interface Software for the RAC Plus

Reference Manual

JAMAR Technologies, Inc.

Traffic Analysis & Distance Measuring Equipment, Software and Supplies

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You may also contact us by e-mail at:

support@jamartech.com

For more information on our products, the latest news in product development, and to download software updates, visit our web site at:

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For information on all known issues with WinRAC Plus, go to:

www.jamartech.com/winracplussupport.html

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Chapter 1

Introduction & Installation

What is WinRAC Plus?

WinRAC Plus is a software program designed by JAMAR Technologies, Inc. for use with the RAC Plus Distance Measuring Instruments. This program is compatible with the Windows operating system and allows you to retrieve surveys that have been stored in the RAC Plus. Once your data has been entered into the program, it can be edited in a variety of ways and comprehensive reports can be produced.

The WinRAC Plus software has the following features:

- Reads directly from the RAC Plus II or RAC Plus III
- Converts Events Codes to Plain Language text (you can edit and store different schemes that translate an event code to a text phrase).
- Capable of merging multiple surveys together
- Insert/delete events from existing surveys
- Export data into Excel formats

System Requirements

The following are the minimum system requirements needed for installing and running this program.

- Windows 2000, XP or Vista Operating Systems
- 64 MB RAM
- Mouse or other pointing device
- Hard disk with 20 MB of free space
- CD ROM (to install the software)
- Available serial port for retrieving data

Software Updates

Updated versions of JAMAR software are released periodically and are posted on the JAMAR web site. Licensed owners of WinRAC Plus may download updates to the program to make sure they always have the latest version of the software on their computer. To download the latest version of WinRAC Plus, go to **www.jamartech.com** and then select Downloads from the list of options.

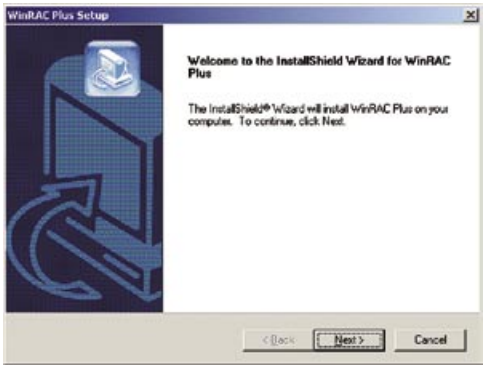
Software Support

If you encounter any problems while using the program, or have any questions on specific operations, refer first to this manual and the program's built-in Help system. For up to the minute information on all known issues with the program, refer to the WinRAC Plus support web page at: www/jamartech.com/winracplussupport.html.

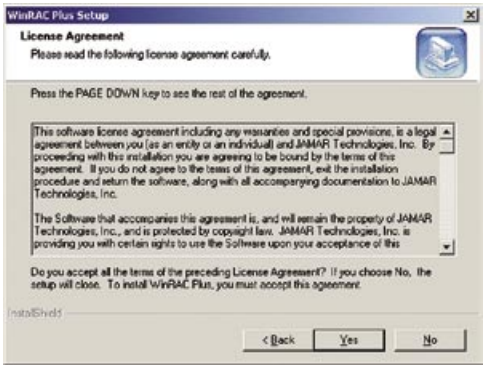
Installing WinRAC Plus

Begin the installation by placing the WinRAC Plus CD into your CD-ROM drive. If your CD drive is configured for Autoplay, the Installation Options program will start after a few second. Otherwise, click on the 'Start' button on your Windows desktop. Select Run from the list of options and type the command line 'X:\setup' where X is the letter of your CD-ROM drive. Press OK and the Installation Options will begin.

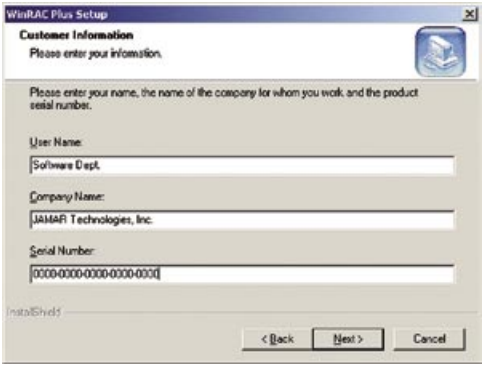
The Installation Options program allows you to do several things in addition to installing the software. To install WinRAC Plus, click on **Install WinRAC Plus**.



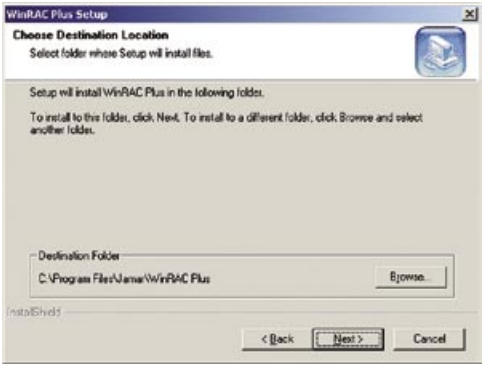
The first screen welcomes you to the installation for the program. Be sure all other programs are closed before proceeding. During installation, files used by the program will be placed on the computer, including some Windows system files. If other programs are open, an error can occur during the installation process. When you are ready to proceed, click on the Next button.



The Software License screen allows you to review the license agreement that must be accepted in order to use the program. Please review this agreement before selecting one of the options. You must accept the agreement in order to proceed with the installation or otherwise use the program. If you agree to the license, click Yes to continue.



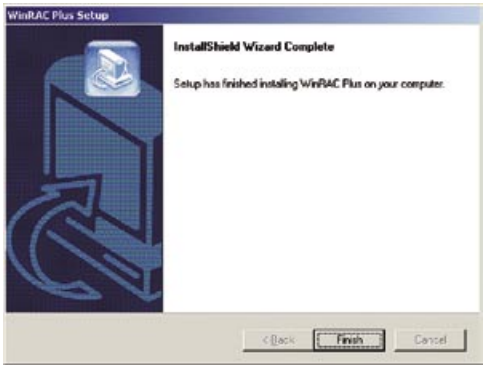
The User Information Dialog requires you to enter the name of the person that will be using the program, as well as the company name. The program's serial number, which is a 20-digit number that can be found on the back of the program's CD case, must also be entered. When entering the number be sure to include the dashes. If the serial number is entered incorrectly, you will not be allowed to proceed with the installation. Once the information has been entered, click the Next button to continue.



The Choose Destination Location screen is used to select the directory in which WinRAC Plus will be installed. The default location is C:\Program Files\JAMAR\WinRAC Plus. Once the directory has been set, click Next to continue.

The Select Program Folder screen is used to the name the folder the program is stored in. Click Next to continue.

A summary of the settings you have chosen will then be shown. Click Back to change any or click Next and the program files will be copied onto your computer.



Once the program files have been copied onto the computer the Setup Complete screen will appear. You may be prompted to restart your computer at this point. If you are, be sure to restart before attempting to use WinRAC Plus.

Click Finish to exit the installation.

Running WinRAC Plus

Like most Windows programs, there are several ways you can run the software. Here are two:

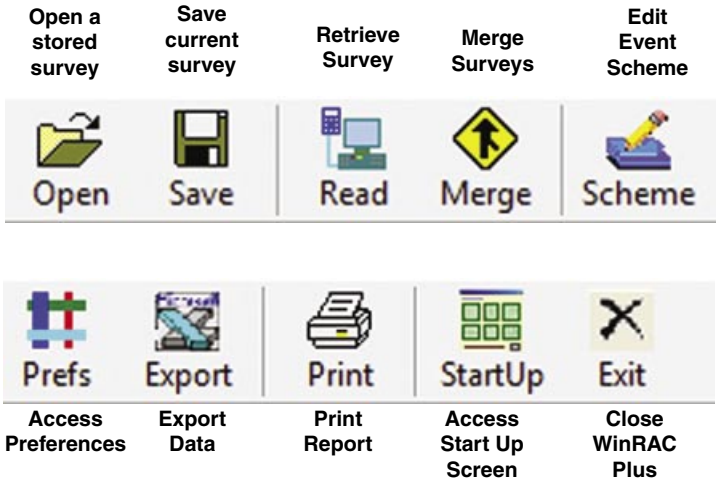
1– Open an Explorer window (right click on My Computer and select Explore) and find the WinRAC Plus.exe file, which is probably in the C:\Program Files\JAMAR\WinRAC Plus folder. Double click on the file WinRAC Plus.exe and the program will run.

2 – Select Start, All Programs, and then JAMAR from the list of installed programs. Choose WinRAC Plus from the list, then choose WinRAC Plus again to run the

Navigating in WinRAC Plus

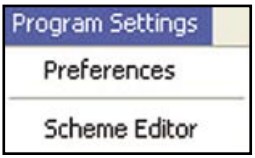
WinRAC Plus has been designed to allow you to easily access the many features and options contained in the program. The tool bar located at the top of the program allows quick access to some of the program's most common features while the drop down menus provide access to all functions of the program.

Toolbar



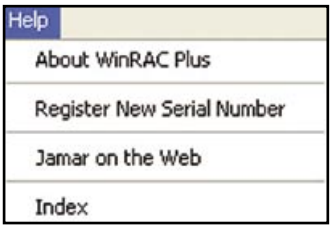
Drop Down Menus

File Menu



Program Settings Menu

DMI Menu



Help Menu

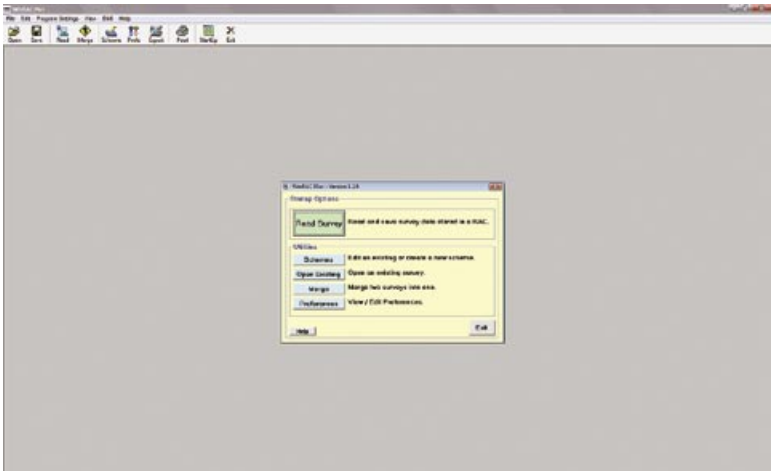
Chapter 2

Learning the Basics of WinRAC Plus

Using WinRAC Plus

This chapter provides an introduction on how to use WinRAC Plus. This information is presented in a tutorial style so you can follow along on your computer as each aspect is covered. Once you have completed this chapter you should have a good working knowledge of the program.

To start the program, click the Windows *Start* button, select Programs, then JAMAR, then WinRAC Plus.



Toolbar

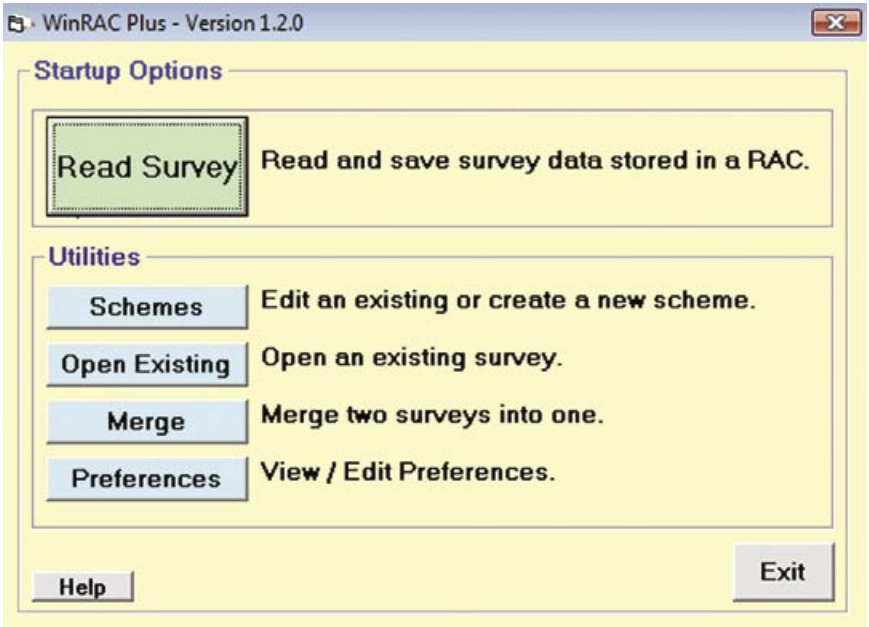
Once you run the program, take notice of the large window that appears in the background. Along the top of this window is WinRAC Plus's **Toolbar**. The buttons on the Toolbar act as shortcuts to many of the programs functions.

The individual buttons on the **Toolbar** are:

Open - Opens an existing WinRAC Plus Survey.
Save - Saves currently selected Survey.
Read - Transfers Survey data from RAC Plus II, RAC Plus III or RAC-200.
Merge - Merges two existing Surveys.
Scheme - Edits/Creates lists of Event Codes and Event Descriptions.
Prefs - Loads the main Preferences Screen.
Export - Converts a WinRAC Plus Survey into an Excel format.
Print - Produces a hardcopy or a PDF of a survey.
StartUp - Loads the Start-Up Options Screen.
Exit - Closes the software.

Start-Up Options

Each time you run WinRAC Plus, the **Startup Options** screen will appear first. The buttons on this screen correspond to the main features you can access in WinRAC Plus. These are: Read Survey, Schemes, Open Existing, Merge and Preferences.



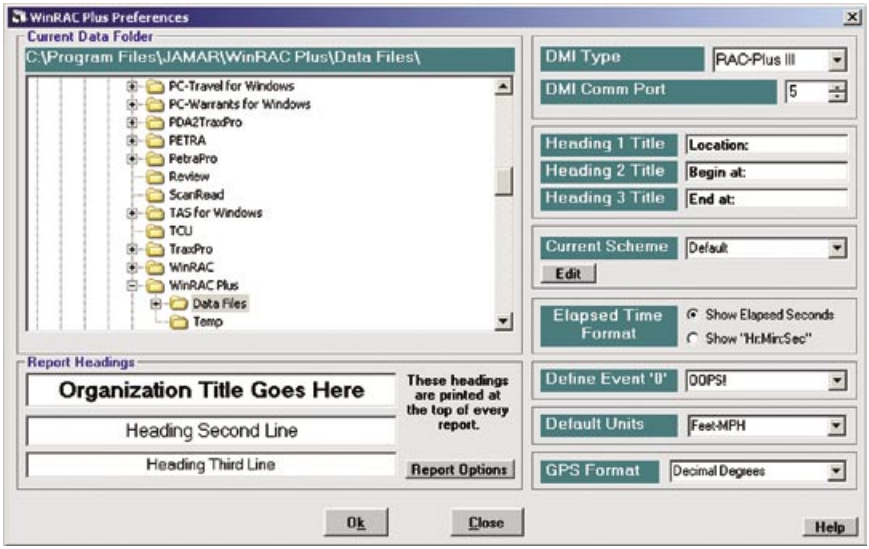
The **Read Survey** button allows you to transfer a saved survey from your RAC to the program.

Chapter 3 provides more detail on this feature, so we'll cover it there.

The first item we want to look at now is the Preferences, so click this button.

Setting Your Preferences

In the Preferences you can customize the main settings of WinRAC Plus.



The **Folder Tree**, which occupies most of the screen, allows you to save your WinRAC Plus files in whichever folder is best for you. The full path to the selected folder is shown in the green label above the Folder Tree.

The default setting for the program is to store files in *C:\Program Files\Jamar\WinRAC Plus\Data Files*. Leave this setting alone for now, you can come back and change it once you're done with this tutorial.

Below the Folder Tree are three text boxes that comprise the **Report Headings**. You may type anything you wish in these three boxes. Each of them can contain up to 32 characters and their contents will be printed at the top of each page of your reports. Some of the common headings used are organization name, phone number, web site and e-mail address. Additional report settings can be accessed by clicking on the Report Options button. We'll discuss these options a little later when producing a report.

In the top right corner of the screen are the two **DMI Settings**. Select the model of your JAMAR DMI from the drop-down box labeled **DMI Type**. The **DMI Comm Port** drop-down box will contain a list of any available serial communications ports on your computer. Select the port number to which you'll be connecting your DMI. This setting will usually be **1**.

Note: Some of these settings (like the Current Data Folder and DMI Type) can be changed from other locations in WinRAC Plus. A change made elsewhere is the same as making a change here on the Preferences Screen.

The next three text fields, called **Heading 1, 2, 3 Title**, will serve as labels for descriptions that you can add to each WinRAC Plus survey. The default values give you an idea of what these settings are generally used for. Each of the three fields can contain 32 characters.

The **Current Scheme** drop-down box lets you choose from the list of text descriptions for the event codes used in a survey. If this is your first time through the program, *Default* will be the only scheme name listed. The Edit button is a shortcut to the Edit Scheme screen which is also accessible from the main startup options. We'll cover this feature a little later in the tutorial.

When viewing survey data in WinRAC Plus, each event will have a field that tells you how much time has elapsed between the beginning of the survey and that particular event. Using the **Elapsed Time Format** option buttons, you can choose how these time values will appear. Click *Show Elapsed Seconds* to view the total number of elapsed seconds or click *Show "Hr:Min:Sec"* to see a clock-type value when viewing your survey data.

While taking survey data in the field, you might have one event that pops up a lot. To save time, you can just mark that event with an event code of 0. Later, once you've got your survey data into WinRAC Plus, you can re-assign the event code 0 to any other event description in your Current Scheme by using the **Define Event '0'** drop-down box. The default value of OOPS! might come in handy as well, in case you want to use event 0 to signify that the previous event was marked by mistake.

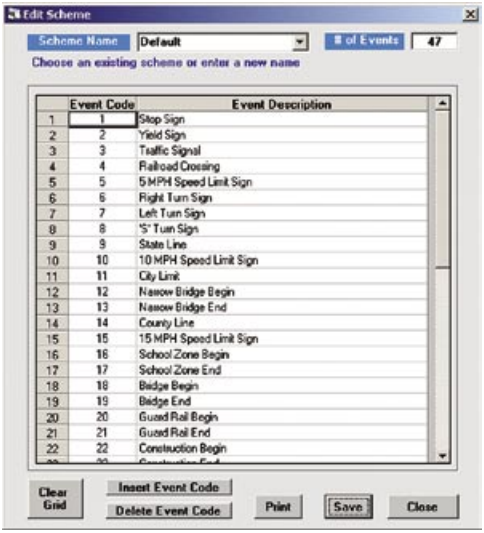
The **Default Units** drop-down box determines the units of your survey data when you first upload it from the RAC. Choose the units you'll normally want to use. You'll be able to switch units later on a survey-by-survey basis if you desire.

Finally, the **GPS Format** setting allows you to select the format of how GPS data should be displayed in the program and shown on reports. There are three options to pick from: Decimal Degrees (40.215790°); Degrees, Decimal Minutes (40° 12.9474'); Degrees, Minutes, Seconds (40° 12' 56.844"). In all cases, the value shown represents the same location, it is just shown in different formats. Select the one that best suits your needs.

At this point, if you click the **Close** button you'd be proceeding without preserving any changes you may have made. Instead, click the **Ok** button to save your changes and you will return to the Start-Up Options screen.

Now that we are back at the Startup Options, we'll take a closer look at one of the options we just discussed, Schemes. Click on the Schemes button to access this feature.

Working with Schemes



With WinRAC Plus, you can use different sets of Event Descriptions for different surveys. These sets of descriptions are called **Schemes**. To see a list of existing Scheme names, click the down arrow of the Scheme Name box.

The program comes with one default scheme named *Default*. To see how the Scheme Editor works, we'll create a new one.

To create our new scheme, click in the white area of the **Scheme Name** drop-down box and type in the name *Sample Scheme*. Next, we'll edit the number of events we use in this scheme, so click in the **# of Events** field. Type *3* then press enter. Notice that the number of events descriptions has now changed to just 3.

We don't want to use the descriptions from the Default scheme, so click the **Clear Grid** button at the lower left of the screen. This will remove the existing descriptions. Now, we'll enter our new scheme by typing in an Event Code (a number from 0 to 9999) and its corresponding Event Description.

We're going to create a simple test scheme, so on line 1, type in *1* for the Event Code and *First Event* for the Event Description. On line 2, type in *2* and *Second Event,* then *3* and *Third Event*.

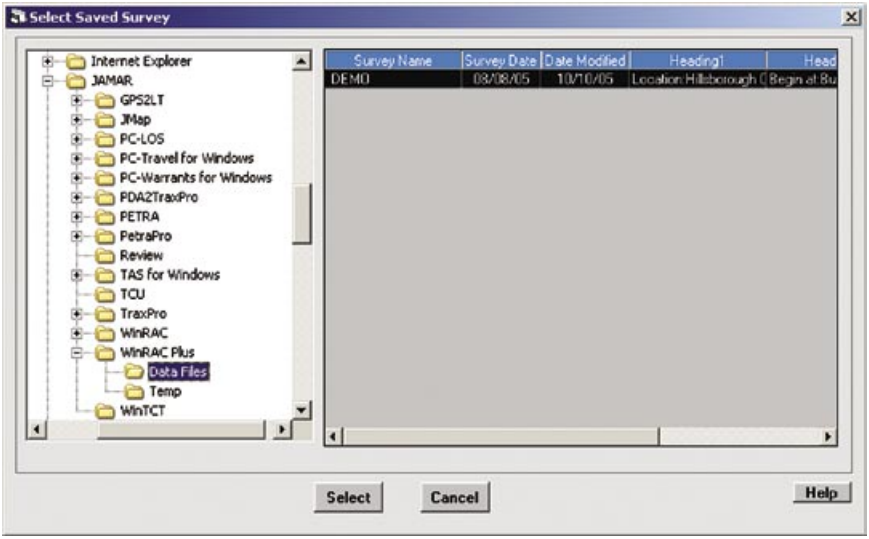
We've entered the values we want, but we'll add another event just to see how it is done. Click the **Insert Event Code** button near the bottom of the screen and you'll see a new line added to our scheme. Enter the values *4* and *Fourth Event* here.

Click the **Save** button to preserve the changes we've made. The **Print** button can be used to print a copy of the scheme if you want to take it to the field with you.

Every scheme that you create here will be available to apply to any open WinRAC Plus survey. We'll see how that works shortly. For now, click the **Close** button to return to the Startup Options.

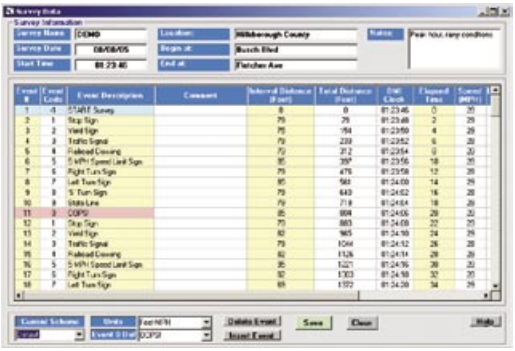
Next, we'll take a look at opening an existing survey, and some of the ways it can be edited. Click the **Open Existing** button to start this process.

Opening a Saved Survey



The grid on the right will list any and all survey files that are contained in the Folder Tree's selected folder. At present we'll be opening the survey entitled **DEMO**. To open the survey, click on the **DEMO** survey in the grid, then click the **Select** button. Alternatively, you could just double click the entry in the grid.

Editing Survey Files



You will now see one Survey Data Window open on your screen. In the upper part of this window is a frame called **Survey Information**. The first box (top left), called **Survey Name,** is probably the most important. The name of this particular survey is DEMO. The **Survey Date** and **Start Time** boxes are assigned when the data is transferred from the DMI, but you can edit these fields at any time.

The middle column of three fields are labeled with the heading you entered on the Preferences Screen. You can now add descriptions to these fields that are particular to this survey.

In the **Notes** box you have more space to add any other text which you want to be saved with your survey. It can contain up to 128 characters.

Most of the screen is filled with a grid which displays all of the events recorded in this survey. You can edit each cell in the white columns, while the values in the yellow columns are calculated automatically.

Below the grid is the **Current Scheme** drop-down box. Click the down arrow and notice that the scheme we just created, *Sample Scheme*, is available on the list. Any scheme you create in the Scheme Editor can be applied to any survey you do.

Select the Sample Scheme and notice that the Event Descriptions for the survey change to match the new scheme. Any of the events codes that are not in our scheme come up with ??? listed as the event description. Reset the scheme to *Default* now that we've seen how it works.

Click the **Units** drop-down box and select *Miles-MPH*. Notice that the Interval Distance and Total Distance columns change to reflect the new units. Next, select *Kilometers-KPH* and notice that now also the Speed column has changed. Reset the units back to *Feet-MPH* when you are done.

The **Event 0 Def** box can be used to change the definition for event code 0 in this survey. Click the down arrow for this box and select 1-Stop Sign. Notice that the description for the 0 event in the survey has changed to the new selection. Reset the Event 0 Def box back to OOPS! when you are done.

If you need to delete an event from the grid, the Delete Event button can be used to do so. We'll delete the OOPS! event we were just looking at, so click on that row in the grid, then click the **Delete Event** button. The event is then removed.

If you need to insert an event, click on the event in the grid that you want to come before your inserted event. Click the **Insert Event** button and a blank event will be added to the grid. You can then edit the blank event's fields to their appropriate values.

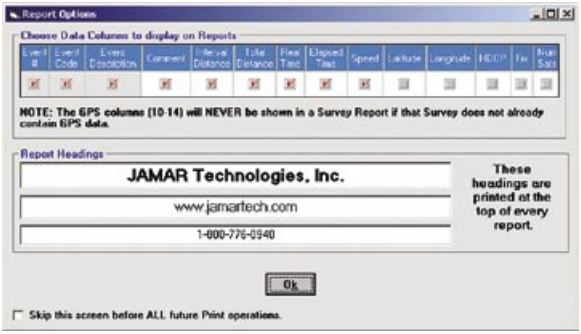
Now that we've seen how to work with our survey data, we'll save our changes. Click the **Save** button to save the survey. The file will be saved to the folder specified on the Preferences Screen.

Now we want to produce a report from our survey, so click the **Print** button in the toolbar.

Producing Reports

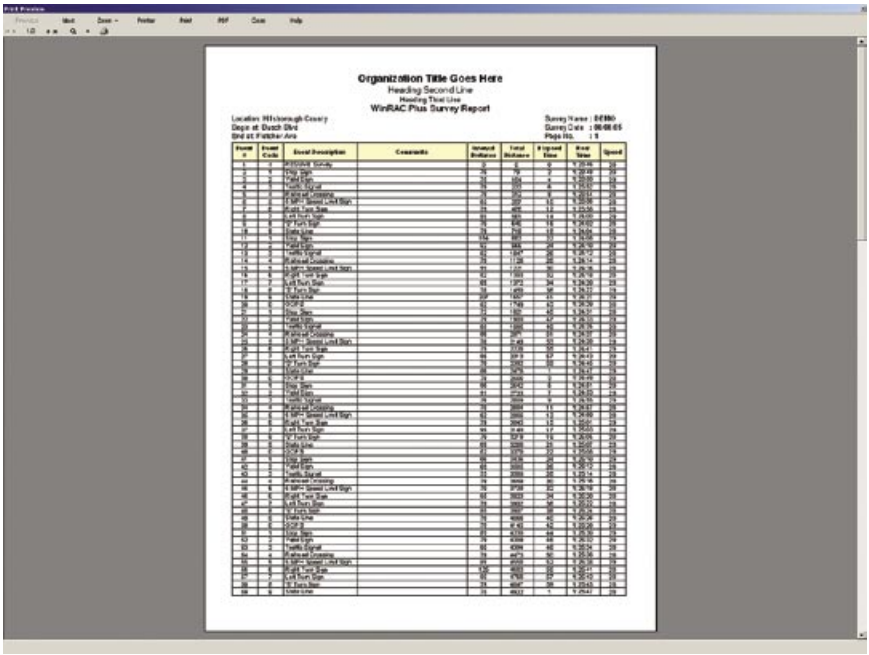
You are now shown the Report Options screen.

This screen can be used to customize the information that you want to include with your report. The row of check boxes across the top allow you to select the type of data you want on the report. Note that the first three, Event #, Event Code and Event Description, are default values and cannot be turned off.



Below the check boxes is the Report Headings field. The information listed here is read in from what you previously entered in the Preferences screen. You can choose to keep this information, or type in new headings.

Once your report is setup the way you want, click OK and you will be shown a preview of your document.



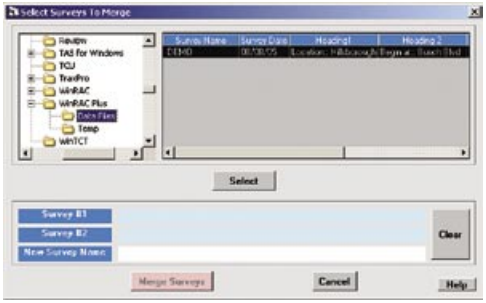
If your data happens to take up multiple pages, you can use the **Previous** and **Next** buttons at the top of the screen to flip through all of the pages. If you would like to take a closer look at your survey data in tabular form, click the **Zoom** button.

To check which printer will receive your document, click the **Printer** button. In order to go ahead start printing a copy of the survey, click the **Print** button. If you would like to export your document into PDF format, click the **PDF** button.

If you're not satisfied with what you see here or if you've chosen the wrong survey to print, click **Close** to simply return to your open Survey Data Window. Click Close now and we'll go back to take a look at another option in the Startup screen.

Merging Two Survey Files

There may be times when you have done two surveys of the same road segment. You can combine any two survey using WinRAC Plus's **Merge** function. To access this feature, click the **Merge** button on the Startup Screen or on the Toolbar.



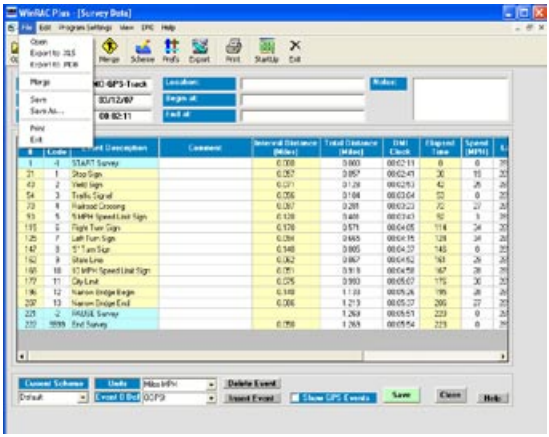
The **Folder Tree** on the top left can be used to navigate to another folder if necessary. The grid at the top right will display any WinRAC Plus survey files which are stored in the selected folder.

To merge files, click on one survey you want to combine in the grid, and the entire row will turn black. Now click the **Select** button in the middle of the screen. That survey will be listed in the light blue box labeled **File #1**. Next, click on the second survey you want to combine and click the **Select** button. That survey will be listed as **File #2**. Type in a name for the new combined file in the **New File Name** box.

Once you've done that, the **Merge Files** button will turn green. Click it to merge both surveys into one survey. A new Survey Data Window will be opened with the name you specified and all events from both surveys sorted by distance.

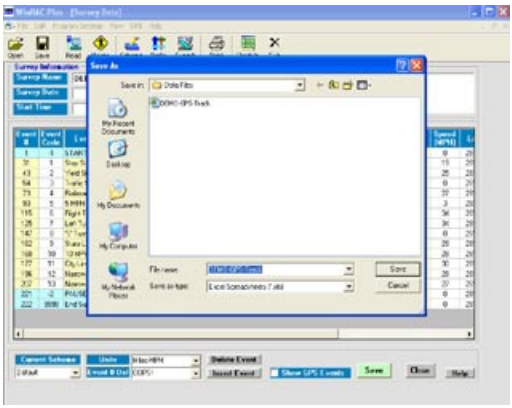
Exporting Survey Data

There may be times when you want to put your survey data into other programs for additional analysis. WinRAC Plus gives you two options for doing this. When you have a survey open, go the *File* menu and you can select to save the data as either a Microsoft Excel (.xls) file or a Microsoft Access (.mdb) file.

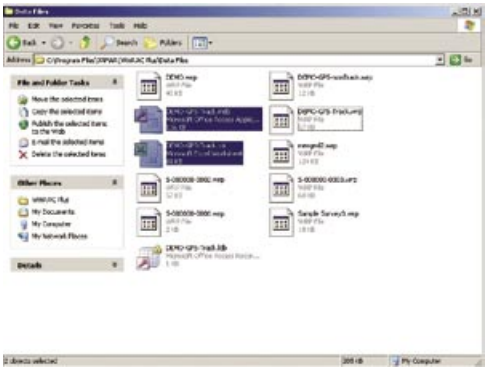


To Export your data in WinRAC Plus you first need your data file open. While on the data screen you can go to File and here you will see the two exports that are available in WinRAC Plus.

When you select the first option Export to .XLS, the software will bring up a standard Windows save dialogue box and ask you to name your file and place it somewhere. The window will look like this:

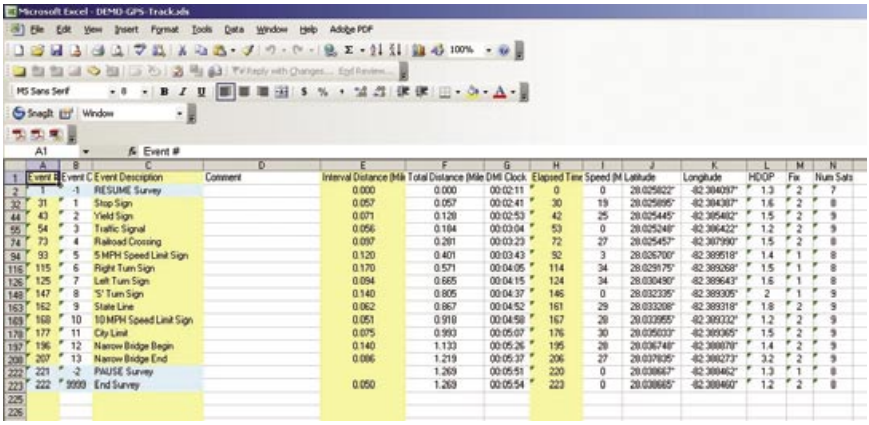


Once you have named and saved the file you then have the ability to open it in Excel, or if you saved as an .mdb to open the file in Access. Just browse to the location where you saved the data files and select your survey. In the following picture you can see that I have saved my count in both .xls and mdb formats in the C:\Program Files\JAMAR\WinRAC\Data Files folder. You can save these files to any drive that you would like.



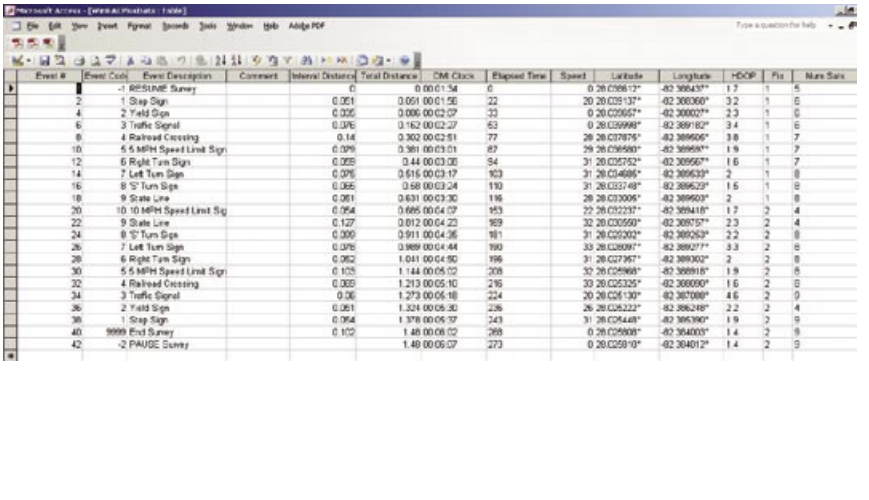
Once opened the two files will appear as follows:

The Excel File:



Event #	Event C	Event Description	Comment	Interval Distance (Mile	Total Distance (Mile	DMI Clock	Elapsed Time	Speed (M	Latitude	Longitude	HDOP	Fix	Num Sats
1	-1	RESUME Survey		0.000	0.000	00:02:11	0	0	28.025822°	-82.384097°	1.3	2	7
31	1	Stop Sign		0.057	0.057	00:02:41	30	19	28.025895°	-82.384387°	1.6	2	8
43	2	Yield Sign		0.071	0.128	00:02:53	42	25	28.025445°	-82.385482°	1.5	2	9
54	3	Traffic Signal		0.056	0.184	00:03:04	53	0	28.025248°	-82.386422°	1.2	2	9
73	4	Railroad Crossing		0.097	0.281	00:03:23	72	27	28.025457°	-82.387990°	1.5	2	8
93	5	5 MPH Speed Limit Sign		0.120	0.401	00:03:43	92	3	28.026700°	-82.389518°	1.4	1	8
115	6	Right Turn Sign		0.170	0.571	00:04:05	114	34	28.029175°	-82.389268°	1.5	1	8
125	7	Left Turn Sign		0.094	0.665	00:04:15	124	34	28.030490°	-82.389643°	1.6	1	8
147	8	'S' Turn Sign		0.140	0.805	00:04:37	146	0	28.032395°	-82.389305°	2	1	9
162	9	State Line		0.062	0.867	00:04:52	161	29	28.033208°	-82.389318°	1.8	2	9
168	10	10 MPH Speed Limit Sign		0.051	0.918	00:04:58	167	28	28.033955°	-82.389332°	1.2	2	9
177	11	City Limit		0.075	0.993	00:05:07	176	30	28.035033°	-82.389365°	1.5	2	9
196	12	Narrow Bridge Begin		0.140	1.133	00:05:26	195	28	28.036748°	-82.388878°	1.4	2	9
207	13	Narrow Bridge End		0.086	1.219	00:05:37	206	27	28.037635°	-82.388273°	3.2	2	9
221	-2	PAUSE Survey			1.269	00:05:51	220	0	28.038667°	-82.388462°	1.3	1	8
222	9999	End Survey		0.050	1.269	00:05:54	223	0	28.038665°	-82.388460°	1.2	2	8

The Access File:



Event #	Event Code	Event Description	Comment	Interval Distance	Total Distance	DMI Clock	Elapsed Time	Speed	Latitude	Longitude	HDOP	Fix	Num Sats
	-1	RESUME Survey		0	0	00:01:54	0	0	28.026617°	-82.388437°	1.7	1	5
2	1	Stop Sign		0.051	0.051	00:01:56	22	20	28.025137°	-82.388360°	3.2	1	6
4	2	Yield Sign		0.035	0.086	00:02:07	33	0	28.025657°	-82.388027°	2.3	1	6
6	3	Traffic Signal		0.076	0.162	00:02:27	53	0	28.025998°	-82.387182°	3.4	1	6
8	4	Railroad Crossing		0.14	0.302	00:02:51	77	28	28.027876°	-82.386606°	3.8	1	7
10	5	5 MPH Speed Limit Sign		0.079	0.381	00:03:01	87	29	28.028580°	-82.386587°	1.9	1	7
12	6	Right Turn Sign		0.058	0.44	00:03:08	94	31	28.029752°	-82.386667°	1.6	1	7
14	7	Left Turn Sign		0.076	0.516	00:03:17	103	31	28.030486°	-82.386633°	2	1	8
16	8	'S' Turn Sign		0.066	0.58	00:03:24	110	31	28.031248°	-82.386629°	1.6	1	8
18	9	State Line		0.051	0.631	00:03:30	116	28	28.031906°	-82.386603°	2	1	8
20	10	10 MPH Speed Limit Sig		0.064	0.695	00:04:07	153	22	28.032237°	-82.386418°	1.7	2	4
22	9	State Line		0.127	0.812	00:04:23	169	32	28.030550°	-82.386757°	2.3	2	4
24	8	'S' Turn Sign		0.099	0.911	00:04:36	181	31	28.029202°	-82.386263°	2.2	2	8
26	7	Left Turn Sign		0.078	0.989	00:04:44	190	33	28.028097°	-82.386277°	3.3	2	8
28	6	Right Turn Sign		0.052	1.041	00:04:50	196	31	28.027367°	-82.386302°	2	2	8
30	5	5 MPH Speed Limit Sign		0.103	1.144	00:05:02	208	32	28.025968°	-82.386816°	1.9	2	8
32	4	Railroad Crossing		0.069	1.213	00:05:10	216	33	28.025326°	-82.386890°	1.6	2	8
34	3	Traffic Signal		0.06	1.273	00:05:18	224	20	28.026130°	-82.387088°	4.6	2	9
36	2	Yield Sign		0.051	1.324	00:05:30	236	26	28.026222°	-82.388248°	2.2	2	4
38	1	Stop Sign		0.054	1.378	00:05:37	243	31	28.026448°	-82.389390°	1.9	2	9
40	9999	End Survey		0.102	1.48	00:06:02	268	0	28.025808°	-82.384003°	1.4	2	9
42	-2	PAUSE Survey			1.48	00:06:07	273	0	28.025810°	-82.384012°	1.4	2	9

Chapter 3

Working with the RAC Plus

The main purpose of the WinRAC Plus program is to be able to take data from the RAC and transfer it to the computer for analysis and reporting. This can be done by using either a RAC Plus III unit, or the older RAC-200. In this chapter, we'll take a look at reading a previously stored survey. Interfacing with the RAC-200 is covered in Chapter 4.

Note: This chapter discusses features only available on the RAC Plus III model. Any reference to a RAC Plus unit in the following pages will not include the RAC Plus I.

Uploading Survey Data from a RAC Plus

Note: This section assumes you are familiar with the process of storing data in the RAC Plus. For information on entering survey data into the RAC Plus, please consult the RAC Plus Manual available on www.jamartech.com.

To transfer a stored survey from the RAC Plus, first plug the JAMAR AC adapter into an available wall outlet, then to the lower side connector on your RAC labeled **PWR**. Just above the PWR connector is the **DATA** connector. Plug the small end of your RAC data transfer cable into the DATA connector. Now connect the other end of the RAC data cable to an available 9 pin serial port on your computer. (Refer to the box on the following page for tips on connecting to a serial port.) Turn the RAC Plus's **OFF/ON** switch to the **ON** position and everything is ready to transfer data.

From the Startup Options, click the **Read Survey** button. You will now see the **Read Survey Parameters** screen. This screen gives you the chance to alter any of the settings that apply to your upcoming data transfer. The settings on this screen are a subset of those found on in the Preferences, so if you're following along, chances are good that the values which appear on the Read Survey Parameters Screen will be correct.

If everything looks correct, click the **Ok** button and the data transfer will automatically take place. The lower display on your RAC Plus will show **SEnd** while it's transmitting survey data and once the transfer is complete, each survey stored in the DMI will appear as a separate Survey Data window on your computer. The RAC Plus will return to its normal mode, with the lower display showing **CH** once it's done sending its data.

Transferring Data using a Serial Port

The following tips should help you to avoid problems when transferring data through a computer's serial port.

1. You must correctly identify the port into which you are plugging the cable. The 9 pin connector used for serial ports are also used for serial or parallel printers, mice, plotters, video cards and other devices. Just because your cable fits into a connector on your computer does not mean it is a serial port. Consult your computer instruction manual if you have any questions on which ports are serial ports on your computer.

2. Many computers have more than one serial port. You will need to know the serial port into which you are plugging the universal cable. Serial ports are designated as COMx where x is a number from 1 to 16. You will need to know this number to transfer data from the RAC Plus.

3. Some devices that are plugged into a computer's serial port will not allow the RAC Plus to transfer its data properly. These are devices that require a program (called a device driver) to be running in the computer at all times. These device drivers are very self-centered, and think that all the data coming into the serial port is for them. Digital Cameras, mice, digitizer boards, PDAs, light pens and scanners are all devices that require these device drivers to be running. If you have to unplug a device from the serial port to plug your RAC Plus in, or if you are using a switch box, be sure that the device does not have a driver running in memory.

4. If you have a conflict with another device on a serial port, or if your computer does not have a serial port, you can use a USB port by using a USB to Serial Converter. These devices allow serial peripherals, like JAMAR equipment, to interface with a USB port. There are several of these devices available on-line and at computer stores. Go to the hardware support section of our web site (www.jamartech.com/hardwaresupport.htm) for a link to one of these devices that we have tested and found to work well.

5. When you access the Read Survey in WinRAC Plus, the program scans the computer and lists the available com ports in the DMI Comm Port field. The port you select here should be the one you are connected to. If no ports are listed, there are no valid ports currently available on the computer. A port can be added using the USB adapter described in #4 above.

Chapter 4

Working with the RAC-200

The main purpose of the WinRAC Plus program is to be able to take data from the RAC and transfer it to the computer for analysis and reporting. This can be done by using either a RAC Plus unit, or the older RAC-200. In this chapter, we'll take a look at reading a previously stored survey from the RAC-200. Interfacing with the RAC Plus is covered in Chapter 3.

Note: This chapter discusses features only available on the RAC-200 modes.

Uploading Survey Data from a RAC-200

Note: This section assumes you are familiar with the process of storing data in the RAC-200. For information on entering survey data into the RAC-200, please consult the RAC-100/200 Manual available on www.jamartech.com.

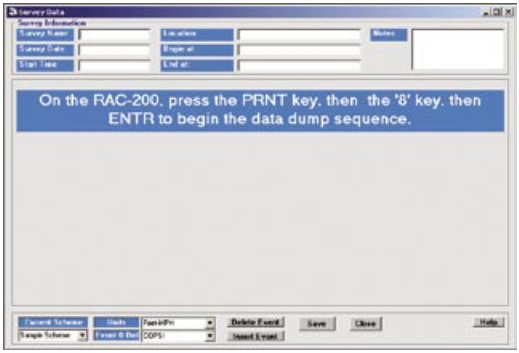
To transfer a stored survey from the RAC-200, first plug the JAMAR AC adapter into an available wall outlet, then to the lower side connector on your RAC labeled **PWR**. Just above the PWR connector is the **DATA** connector. Plug the small end of your RAC data transfer cable into the DATA connector. Now connect the other end of the RAC data cable to an available 9 pin serial port on your computer. (Refer to the box on page 3-3 for tips on connecting to a serial port.) Turn the RAC-200's **OFF/ON** switch to the **ON** position and everything is ready to transfer data.

From the Startup Options, click the **Read Survey** button. You will now see the **Read Survey Parameters** screen. This screen gives you the chance to alter any of the settings that apply to your upcoming data transfer. The settings on this screen are a subset of those found on in the Preferences, so if you're following along, chances are good that the values which appear on the Read Survey Parameters Screen will be correct.

If everything looks correct, click the **Ok** button to begin the data transfer process.

The Survey Data screen is now visible. You will need to input some information into the RAC-200 before the data transfer will start. The middle part of the Survey Data screen is now filled with prompts to remind you which buttons you'll need to press on the RAC-200.

On the RAC-200, first hit the **PRNT** key, the **8** key, then the **ENTR** key. Next, you'll be asked to confirm a baud rate of 9.6 Kbps (the screen on the RAC-200 will read



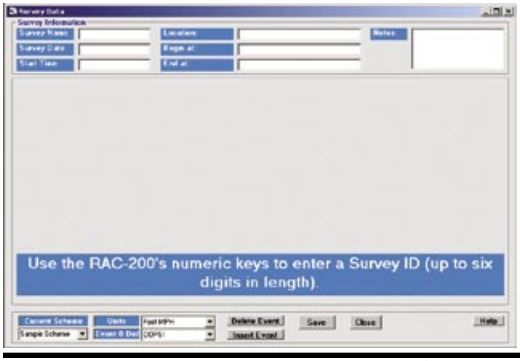
bAud 9.6), press **ENTR**.

Now you must tell the RAC-200 at which memory location you want to start the transfer and the screen will show *Loc 0*. Hit **ENTR** to transfer all data. If you know you have one day's worth of data that goes from memory location 0 to 99, then another data set that spans locations 100 to 150, you can just transfer the second data set by pressing keys **1**, **0**, **0**, then **ENTR**.

The RAC-200 will display *CodE 0* at this point. Press **ENTR** to transfer all event codes in memory. If you only want to transfer entries with an event code of, say, 16 then press keys **1**, **6**, and **ENTR**.

If the RAC-200 is communicating properly with the computer, at this point the prompt in WinRAC Plus will change to ask you to enter the date. The RAC-200's display will show ***dt 0.00.00*** where the zero's could be replaced by the last date entered. Use the number keys on the RAC-200 to input a date if you want, then press **ENTR**.

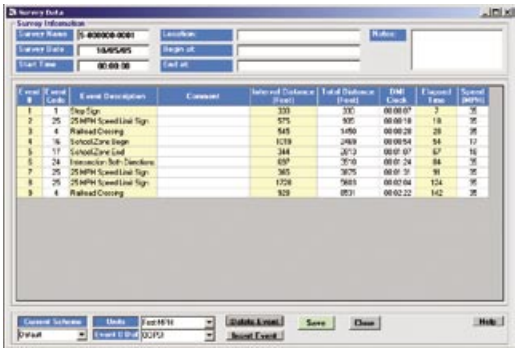
The final step here is the most useful entry you can make. The RAC-200 will display ***id*** and you can enter up to six digits at this point. You may want to enter a roadway ID or segment code.



Either way, once the data is transferred into WinRAC Plus, any number you enter here will serve as a preliminary name for your survey. If you leave the ***id*** field blank, WinRAC Plus will form a generic name for your survey. Press **ENTR** once you set the ID.

The display on the RAC-200

will flash numbers while the transfer is in progress. Once it shows *CH 0* again, it has finished sending data to the computer. Take another look at the Survey Data screen, the main part of the window is now filled with a grid that contains all of the data that's just been received from the RAC-200.



Congratulations, your survey data has made it safely into WinRAC Plus. You can power down and unhook the RAC-200 as you won't be needing it anymore.

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