WinSC
User's Guide

RD Instruments
Acoustic Doppler Solutions

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1 Introduction

This guide is an overview on using the *WinSC* utility software provided with your system. Use *WinSC* to communicate and deploy the ADCP. You can use the *PLAN* software to calculate the theoretical expected standard deviation for your ADCP setup.

1.1 System Requirements

WinSC requires the following:

- Windows 95®, Windows 98®, or Windows NT 4.0® with Service Pack 4 installed

- Pentium class PC 233 MHz (350 MHz or higher recommended)

- 32 megabytes of RAM (64 MB RAM recommended)

- 6 MB Free Disk Space plus space for data files (A large, fast hard disk is recommended)

- One Serial Port (two or more High Speed UART Serial Port recommended)

- Minimum display resolution of 800 x 600, 256 color (1024 x 768 recommended)

- CD-ROM Drive

- Mouse or other pointing device

1.2   Software Installation

To install the WorkHorse software, do the following.

a. Insert the compact disc into your CD-ROM drive and then follow the browser instructions on your screen. If the browser does not appear, complete Steps "b" through "d."

b. Click the **Start** button, and then click **Run**.

c. Type **<drive>:launch**. For example, if your CD-ROM drive is drive D, type **d:launch**.

d. Follow the browser instructions on your screen.

Once, installed, you will have two shortcuts added to your Windows® **Start** menu. The **Self-Contained ADCP Application** shortcut will start *WinSC*. **Plan** will start the *Plan* program.

> **NOTE.** The default directory for installation is C:\program files\RD Instruments\RDI SC Application.

2   Using WinSC

The program *WinSC* is designed to take a user from the planning stage through data recovery.

2.1   Starting WinSC

a. In Windows, click **Start**, **Programs**, **RD Instruments**, **Self-Contained ADCP Application** (default location – use your installation settings if different). *WinSC* will start and display the **Welcome** screen.
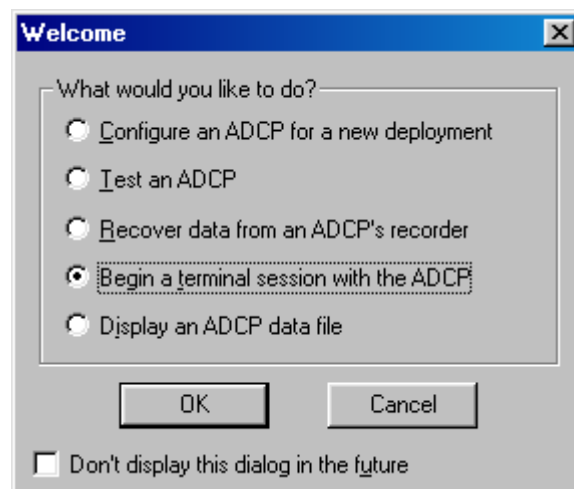
Figure 1.   WinSC Welcome Screen

b. The **Welcome** screen provides quick access to the most often used functions of *WinSC*. You may select one of the functions and click **OK** or click **Cancel** to begin using *WinSC*.

- ***Configure an ADCP for a new deployment*** – This will create a new deployment file and start the deployment wizard (see "Deployment Wizard," page 10).

- ***Test an ADCP*** – this will start the testing portions of the deployment wizard (see "Test the ADCP," page 13).

- ***Recover data from an ADCP's recorder*** – This will open the recover data screen (see "Recover Data," page 15).

- ***Begin a terminal session with the ADCP*** – This will open a terminal window and allow you to "talk" to the ADCP (see "Terminal Window," page 13).

- ***Display an ADCP data file*** – This will open a raw data file and display the data (see "View Recorded Data," page 16).

NOTE. If you do not want to see the Welcome message when *WinSC* starts, select the **Don't display this dialog in the future** box and click **OK**.

2.2 WinSC Shortcut Keys

Use the following keys to quickly do tasks.

Table 1:   WinSC Shortcuts

Function	Shortcut
New deployment	Control-N
Open	Control-O
Recover Recorded Data	Control-Page Down
Terminal	Control-T
Save	Control-S
Print	Control-P
ADCP Setting	F5
Send a Break (Terminal mode only)	End

2-3 Setup ADCP Communication

Before you can establish communications with the ADCP for the first time, you must configure *WinSC*.

> **NOTE.** These settings will be used when *WinSC* is started.

a. Connect and power up the ADCP as shown in the appropriate ADCP User's Guide.

b. Start *WinSC*.

c. At the **Welcome** screen, click **Begin a terminal session with the ADCP**. Click **OK**.

> **NOTE.** If *WinSC* has not been configured, you will be prompted to set the communications settings. Click **Yes** to continue.

Figure 2.   Setting the Communication Port

d. Select the COM port that the ADCP is connected to (see Figure 2). If you are unsure of the setting, use **Auto Detect**.

e. Select the baud rate, parity, and stop bits (see Figure 3, page 5). If you are unsure of the settings, use **Auto Detect**.

Figure 3.   Setting the Communication Settings

> **NOTE.** *WinSC* and the ADCP must both be using the same communications settings. See the CB-command in the WorkHorse Command and Output Data Format Guide.

f.   Click **Finish**.

g.   On the **File** menu, click **Break** (you can also press the **End** key to send a break). You should see the wakeup message appear on the deployment log window. For example;

```
>>>>>> Function starting 10/02/98 08:34:31 >>>>>>

[BREAK Wakeup A]

WorkHorse Broadband ADCP Version x.xx
RD Instruments (c) 1996-1998
All rights reserved.
>
```

2.4   Changing the Communication Settings

Once you establish communications with the ADCP for the first time, *WinSC* uses the same settings for future communications. To change the settings, do the following.

a.   Connect and power up the ADCP as shown in the appropriate ADCP User's Guide.

b.   Start *WinSC*.

c.   At the **Welcome** screen, click **Begin a terminal session with the ADCP**. Click **OK**.

d. From the **ADCP** menu, click **COM setting**.
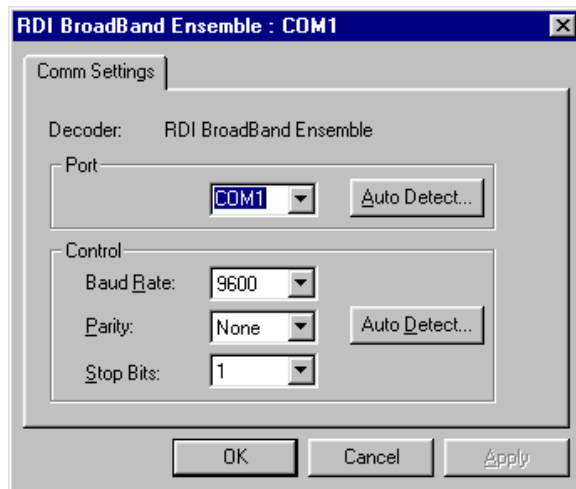
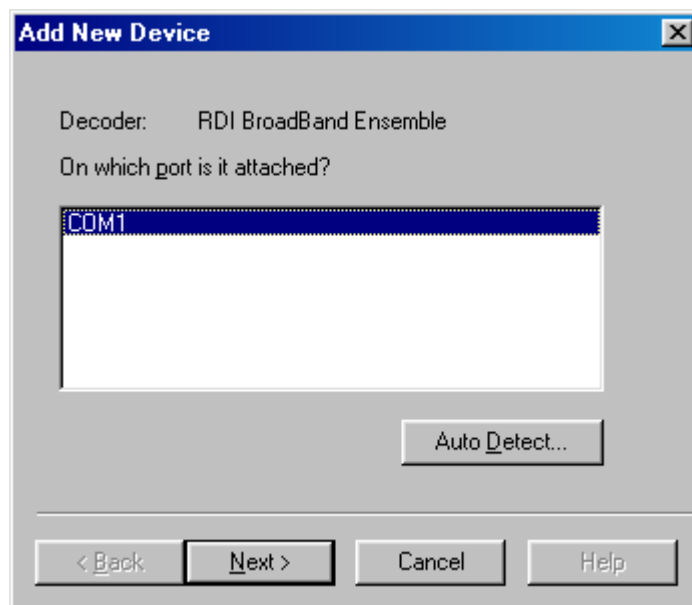**Figure 4.   Communication Menu**

e. Select the COM port that the ADCP is connected to (see Figure 4). If you are unsure of the setting, use **Auto Detect**.

f. Select the baud rate, parity, and stop bits. If you are unsure of the settings, use **Auto Detect**.

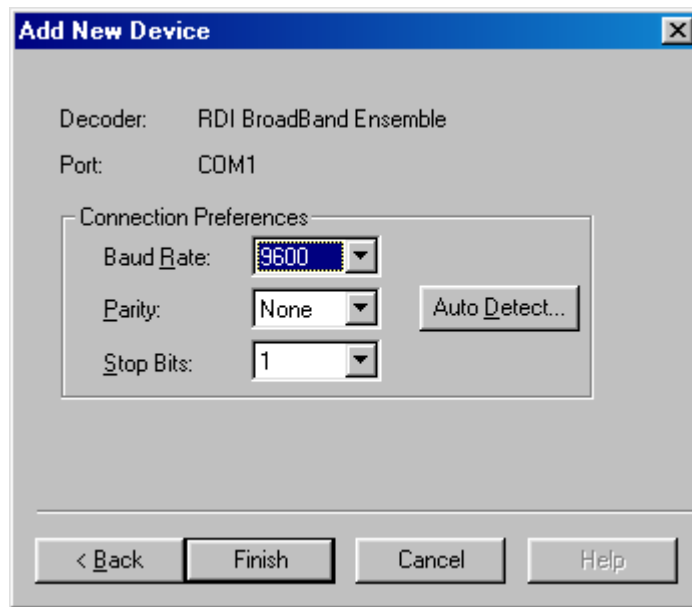> **NOTE.** *WinSC* and the ADCP must both be using the same communications settings. See the CB-command in the Command and Output Data Format Guide.

g. On the **File** menu, click **Break** (you can also press the **End** key to send a break). You should see the wakeup message appear on the deployment log window. For example;

```
>>>>>> Function starting 10/02/98 08:34:31 >>>>>>

[BREAK Wakeup A]

WorkHorse Broadband ADCP Version x.xx
RD Instruments (c) 1996-1998
All rights reserved.
>
```

3 Deployment Files

Deployment files keep track of what steps have been completed for the deployment. All files will be in the same directory using the deployment name. For example, if you save the deployment file as Test.dpl, the deployment log file will be Test.scl, and the first raw data file collected during this deployment will be Test000.000 (see "File Naming Conventions," page 9). All files will be located in the directory Test.

To create a new deployment file do *one* of the following.

- At the **Welcome** screen, click **Configure an ADCP for a new deployment**. This will create a new deployment file (default name Dpl1_) and start the deployment wizard. When you are ready, click **File**, **Save** to name the deployment file.

- On the **File** menu, click **New Deployment**. A deployment log file (default name Dpl1_) will open and the deployment wizard will start. When you are ready, click **File**, **Save** to name the deployment file.

3.1 Saving Deployment Files

Save the deployment file by clicking **File**, **Save As**. Enter a **New Directory Name** for the file that you have just created (the deployment file and directory name will match). This deployment file will save which steps have been completed in the Deployment Wizard and the path to the command file. You can use this same method in case you wish to create several different setup files for the same ADCP. As an example, you could create a command text file that has a 6-meter bin size. You might save this to a text file with the name BIN6M.TXT and call the deployment file Dpl_6.DPL. You could then create another command file and *.dpl file with a 16-meter bin size with the same concept. Then when you want to actually use the proper command file you just have to select the *.dpl file you intend to use.
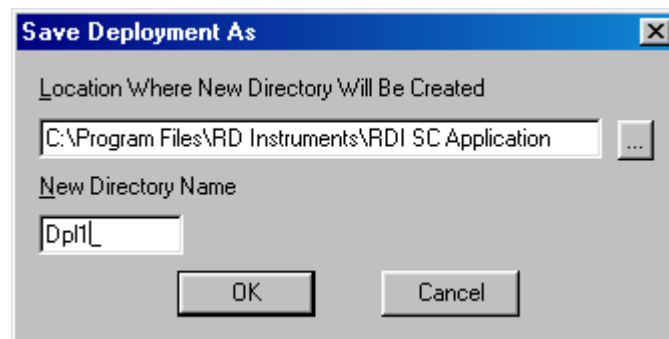
Figure 5.   Save the Deployment File

3.2 Opening Deployment Files

To open a deployment file, on the **File** menu, click **Open**. On the **Files of Type** box, select **Deployments** (*****.dpl) (see Figure 6). Select the deployment file to open and click **Open**.
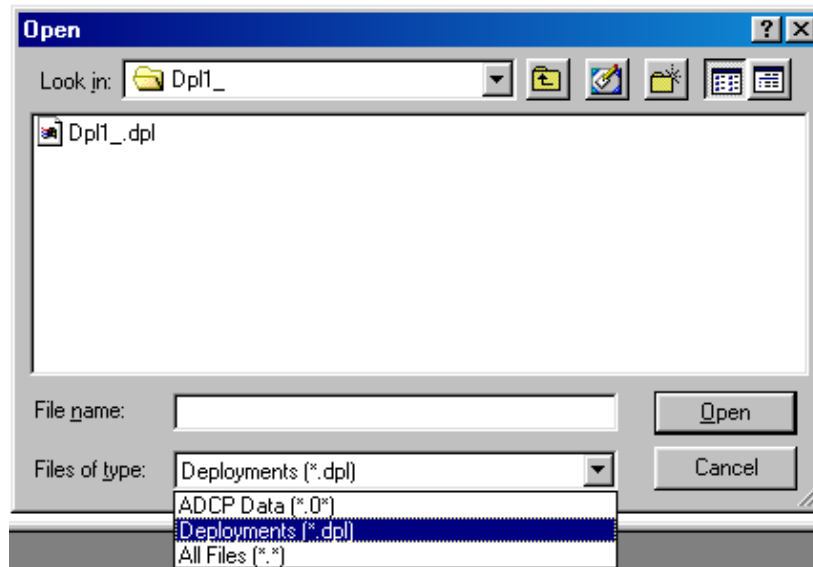
Figure 6.   Opening a Deployment File

To see what steps have been completed using the Deployment Wizard, click the **Functions** menu. A check mark will be next to each completed item. In the example shown below, the Planning step has been completed.
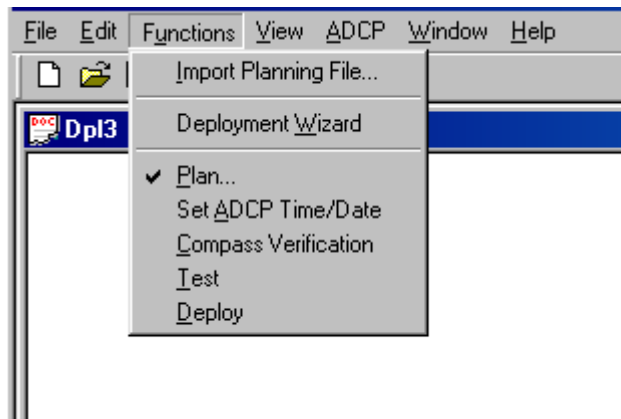
Figure 7.   Deployment Wizard Check List

3.3   File Naming Conventions

The *WinSC* software gives you a complete record of information that might help you understand your data. To help you associate these files with your data, they use the same deployment name. Be careful not to lose these files!

> **NOTE.** Choose and use Deployment Names carefully: they help you identify and organize all the data and log files associated with each deployment.

Raw Data files produced by *WinSC* have the following filename format:
DeployName000.nnn

Where:

|	
DeployName	is a user-entered name for the deployment (up to 5 characters),
000	is the deployment number (changes with each stop/restart),
nnn	is the recorder card number, which is incremented when the recorder card is full (.000 = card one, .001 = card two)

The file extensions have the following meaning:

DeployName.WHP	WorkHorse command file created by *Plan*.
DeployName.SCL	Deployment log file created by *WinSC*. This file contains all of the commands sent to the WorkHorse (from *.WHP) and the WorkHorse's system information before deployment.
DeployName.DPL	Binary deployment status file. This file keeps track of which steps were completed when using the deployment wizard.

3.4   Deployment Wizard

There are five steps the deployment wizard helps lead you through; Planning, Setting the ADCP's clock, Compass Verification, Pre-Deployment Tests, and sending/verifying the commands to the ADCP. RDI highly recommends using the wizard each time you deploy the ADCP. The deployment wizard will start whenever a new deployment file is created. To use the deployment wizard, do the following.

a. Connect and power up the WorkHorse as shown in the appropriate ADCP User's Guide.

b. Start *WinSC*.

c. Start the Deployment Wizard by doing *one* of the following.

- At the **Welcome** screen, click **Configure an ADCP for a New Deployment**. Click **OK**.

- Click **File**, **New Deployment** (the deployment wizard will start automatically).

- If you are working on an open deployment file (*.dpl), on the **Functions** menu, click **Deployment Wizard**.

> **NOTE.** Choose and use Deployment Names carefully: they help you identify and organize all the data and log files associated with each deployment.

d. The first step is planning. When you click **Next**, the program *PLAN* will start. For more information on *PLAN*, see "PLAN," page 18. If you want to skip this step, check the **Skip** box, or click **Next** to begin using *Plan*.
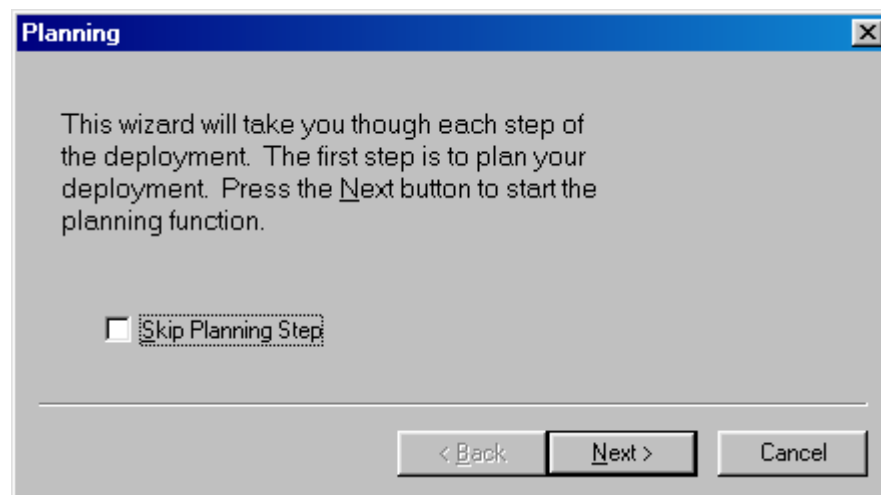
Figure 8.   Deployment Wizard - Planning

e. The second step will set the ADCP's clock to the computer's time and date using the TS-command. For more information on the TS-command, see the Command and Output Data Format Guide. If you want to skip this step, check the **Skip** box or click **Next** to begin setting the clock.
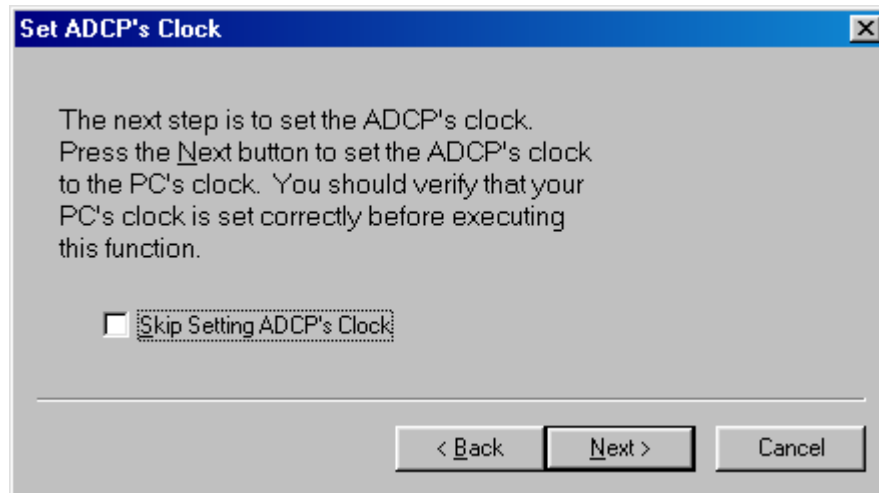
Figure 9.   Deployment Wizard – Setting the Clock

f. The third step will verify the compass using the AX-command. For more information on the AX-command, see the Command and Output Data Format Guide. If you want to skip this step, check the **Skip** box or click **Next** to begin verifying the compass.
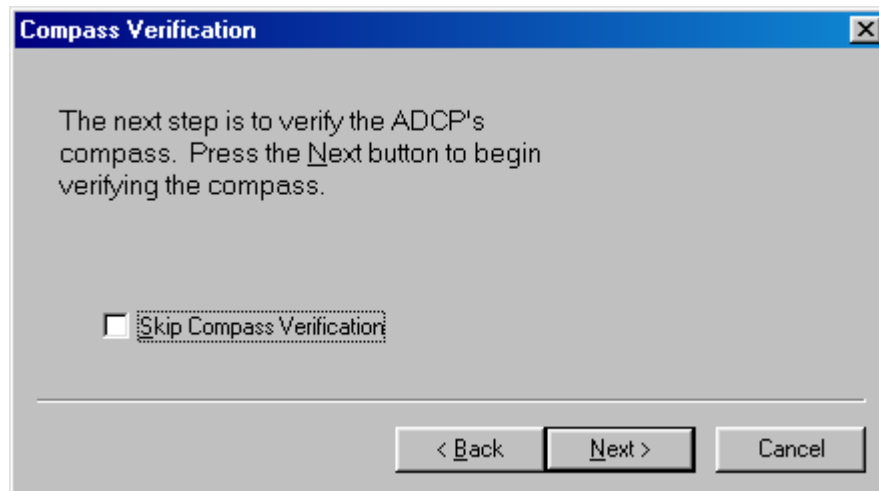
Figure 10.   Deployment Wizard – Compass Verification

g. The fourth step will run the pre-deployment tests Deploy?, System?, TS?, PS0, PA, PC2, RS, and PC1-commands. For more information on

these commands, see the Command and Output Data Format Guide. If you want to skip this step, check the **Skip** box or click **Next** to begin the pre-deployment tests.
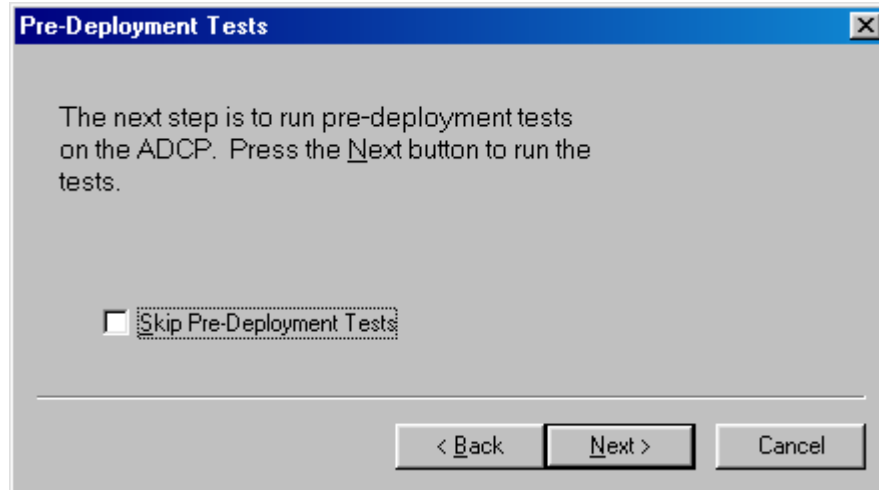
Figure 11.   Deployment Wizard – Test the ADCP

h. The fifth and final step in the Deployment Wizard will send the commands from the command file to the ADCP. Click **Next** to send the commands. When the commands have been sent to the ADCP, you should see a message "*You have successfully deployed the ADCP*." Click **OK**.

> **NOTE.** If you have not saved the deployment file, you will be prompted to name the deployment. Choose and use Deployment Names carefully: they help you identify and organize all the data and log files associated with each deployment.
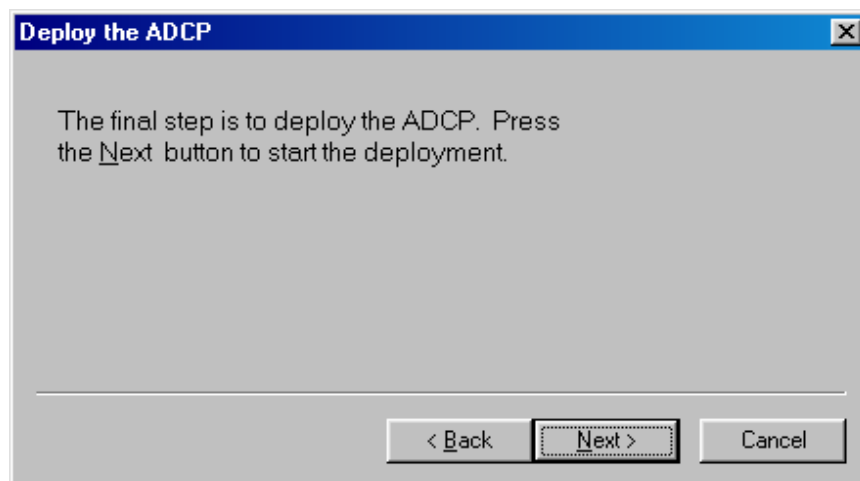
Figure 12.   Deployment Wizard – Send the Commands

3-5   Self-Contained ADCP Deployments

Use the appropriate ADCP User's Guide to verify the ADCP is sealed and ready for deployment. Use the **Deployment Wizard** or on the **Functions** menu, click **Deploy**. The deployment commands will be sent to the ADCP.

Before deploying the ADCP, scroll through the deployment log file and look for error messages. Correct as needed and re-send the commands. Once the commands have been sent to the ADCP, proceed as follows.

a. Disconnect the I/O cable and install the dummy plug on the ADCP's end-cap.

CAUTION

Do not send a break, any other command, or run any other programs once the commands have been sent to the ADCP or your commands will be over-written.

Disconnect the I/O cable before turning off power to the computer. Some computers may send a break signal out the serial ports when shutting down.

---

b. Deploy the ADCP.

4   Terminal Window

The terminal window is used to send commands to the ADCP and view ADCP responses to *WinSC* functions.

4.1   Test the ADCP

Use the following steps to test the ADCP.

a. Connect and power up the ADCP as shown in the appropriate ADCP User's Guide.

b. Start *WinSC.*

c. At the **Welcome** screen, click **Test an ADCP**. Click **OK**. This will run the pre-deployment tests Deploy?, System?, TS?, PS0, PA, PC2, RS, and PC1 (see the WorkHorse Commands and Output Data Format guide for details on the test printouts). The results of the tests will be printed to the screen and saved to the log file (*.scl).

4.2   Send Commands to the ADCP

Use the terminal screen to send any command to the ADCP.

a. Setup communications with the ADCP.

b. On the **File** menu, click **Terminal**.

c. On the terminal window's menu, click **File**, **Break** to wakeup the ADCP (the **END** key will also send a break). For every break sent, you should see the wakeup message.

d. At the **">"** prompt, type the name of the command to be run.

For example;

```
>CR1
[Parameters set to FACTORY defaults]
```

5   Recorder Functions

WinSC has the capability to check the status, recover data, and erase the recorder.

5.1   Check the Recorder Status

The recorder status function lists the files stored on the recorder in the form of a DOS directory listing. Each PC card is listed as a separate drive.

a. Connect and power up the WorkHorse.

b. Start *WinSC*.

c. On the **File** menu, click **Recorder Status**. You should see a message similar to the following.

```
>>>>>> Function starting 10/01/98 11:49:01 >>>>>>

[BREAK Wakeup A]

WorkHorse Broadband ADCP Version x.xx
RD Instruments (c) 1996-1998
All rights reserved.
>RR
Recorder Directory:
Volume serial number for device #0 is 0000-010f

  _RDI_000 000           105284 01-01-00   0:02:02a r  a [    2]
  _RDI_001 000            83844 01-01-00   0:09:26a r  a [   54]
  _RDI_002 000            72052 01-01-00   0:01:00a r  a [   95]
  _RDI_003 000           216772 01-01-00   0:12:34a r  a [  131]

  _RDI_004 000            17916 12-31-99  11:59:20p r  a [  237]
  _RDI_005 000            71516 01-01-00   0:01:00a r  a [  246]
  _RDI_006 000            72052 01-01-00   0:01:00a r  a [  281]
  _RDI_007 000            72052 01-01-00   0:01:00a r  a [  317]
  _RDI_008 000            72588 01-01-00   0:01:00a r  a [  353]
  _RDI_009 000            72588 01-01-00   0:01:02a r  a [  389]
  _RDI_010 000            72052 02-29-00   0:01:00a r  a [  425]
  _RDI_011 000            40960 03-01-00   2:08:00a r  a [  461]

  DPL1_000 000             8268 10-01-98  11:25:38a r  a [  481]
  MINE_000 000             8268 10-01-98  11:43:12a r  a [  486]
  MINE_001 000             8268 10-01-98  11:48:54a r  a [  491]

  Bytes used on device #0 = 994480
Total capacity   =   41760768 bytes
Total bytes used =     994480 bytes in 15 files
Total bytes free =   40749056 bytes
```

```
>CZ

Powering Down

<<<<<< Function ending 10/01/98 11:49:05 <<<<<<
```

5.2   Recover Data

Once you have recovered the WorkHorse, you should refer to the Mainte-nance book for instructions on cleaning the ADCP exterior. Once the ADCP is clean, use *WinSC* to recover the data. *WinSC* reads the data from the WorkHorse's PC Card recorder and transfers the data to the computer's hard disk. You will be prompted for a directory name on the computer's hard drive where the data will be written. When data recovery is finished, your data files will be in sequential order (i.e., *000.000, *000.001 etc.).

a. Connect and power up the WorkHorse.

b. Start *WinSC*.

c. At the **Welcome Screen** select **Recover Data from an ADCP's Re-corder** or from the **File** menu, select **Recover Recorder Data**.

d. Select the directory where the data will be written.

> **NOTE.** WinSC will increase the baud rate set in the **Com Settings** window (see "Changing the Communication Settings," page 5) to 115200 to reduce the download time.
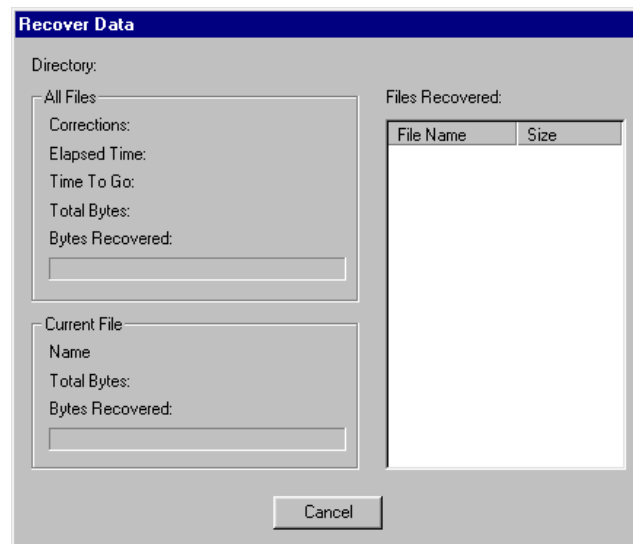

Figure 13.   Recover Data Screen

5.3   Erase the Recorder

Once all data has been recovered, the recorder can be erased. *Once erased, the data is not recoverable.*

a. Connect and power up the WorkHorse.

b. Start *WinSC*.

c. Recover the data (see "Recover Data," page 15). Once erased, the data is not recoverable.

d. On the **File** menu, click **Erase Recorder Data**.

e. Type **ErAsE** (you must use the exact upper and lower case characters).

f. Click **OK**.

Erase ADCP Recorder's Data Files

Verify that you want to erase all of the ADCP recorder's data files by typing ErAsE with the exact upper and lower case characters and pressing OK.

> OK   Cancel
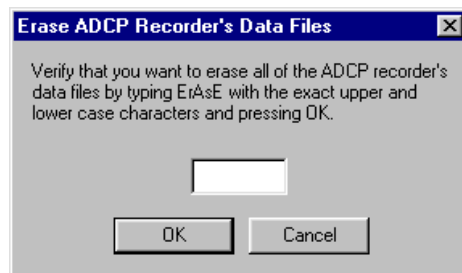
Figure 14.   Erase the Recorder

⚠ **CAUTION.** Data is not recoverable after erasing.

6   View Recorded Data

WinSC may be used to view data.

a. Recover the data.

b. On the **File** menu, click **Open**.

c. On the **Files of Type** box, select **ADCP Data** (*.0*).

d. Select the file and click **Open**. The data file will display all of the ensembles.

Viewing Options.

- To select a subsection of the data file, use the **View** menu, **Ensemble Selection**. To quickly select a section, hold the **Control** key while dragging the mouse over the area to be selected.

- To increase the contrast of the contoured plot, click inside the window to select it, then use the **View** menu **Contoured** button.

- To change the colors of the plot or other plot controls, click inside the window to select it, then use the **View** menu, **Properties**.

- To select the range of a contoured plot, click inside the window to select it, then use the **View** menu **Ranges** button.

- To increase the size of a window, click inside the window to select it, then use the **Windows** menu **Maximize Pane** button. To view only the velocity windows, use the **Windows** menu **Maximize Velocity Panes** button. To return to viewing all windows, use the **Windows** menu **All Panes** button. To customize the size of a window, use the **Windows** menu **Split** button.
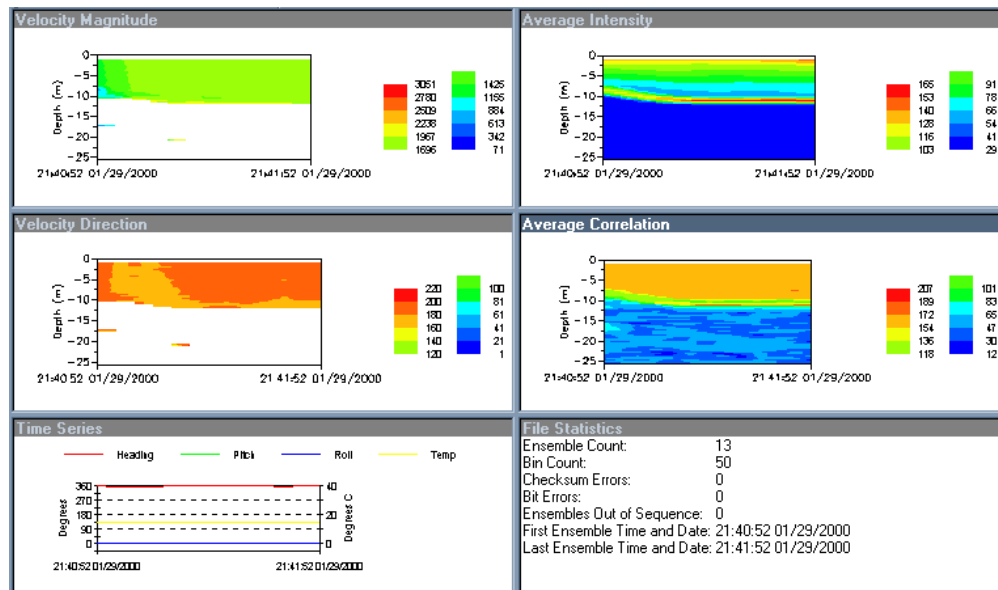

Figure 15.   Viewing Data with WinSC

7 PLAN

PLAN lets you enter known or "best-guess" values for the various ADCP profiling parameters and shows predictions of expected results. This lets you play "what if?" with the input parameters to evaluate trade-offs you may have to make with regard to standard deviation, profiling range, and timing.

We strongly encourage you to develop your command files using *PLAN*. Using *PLAN* allows you to set the command values and see the result of your choices before deploying the ADCP. *PLAN* also adds some commands to ensure the ADCP is properly configured.

PLAN does not send commands to the ADCP (it is "called" by *WinSC*). Consequently, an ADCP is not needed to use this program. For more information about ADCP commands, see the Command and Output Data Format Guide.
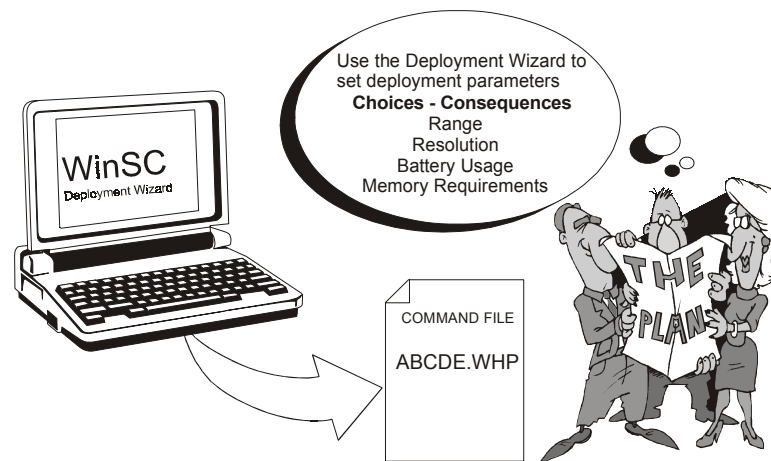
Figure 16. Using PLAN to Create a Command File

7.1 Using PLAN

To create a command file, do the following steps.

a. Start *PLAN*. When you start *PLAN*, you have a choice of creating a new command file or opening an existing file. For this example, select **New**.

> **NOTE.** PLAN can also be started from within *WinSC* by creating or opening a deployment file, then clicking **Functions**, **Plan**.

b. Select the frequency of your ADCP. The default settings and consequences are based upon the ADCP frequency. Click **Next**.

c. The *PLAN* Screen opens using the default settings (see Figure 17, page 21).

d. Adjust the bin size and number of bins to match the deployment environment.

    1. Set the bin size. Adjust the bin size as necessary to get at least 10 bins. A larger bin size decreases the standard deviation, but shallow water situations may need to use small bins to get more data points.

    2. Set the number of bins so that the consequence *last bin range* is approximately 10% greater than the *expected max range*.

    Keep in mind the following:

- The Maximum Range is dependent on the ADCP frequency, water salinity, water temperature, and the depth of the ADCP.

- The depth to the middle of the first bin (below the surface) is First bin range + Transducer depth. The bin size and the WF (blank) command in the command file primarily affect where it is located.

- The last bin range is determined from the number of bins, bin size and first bin range.

- Standard deviation is dependent on bin size and number of pings per ensemble.

e. Adjust the number of pings to get the desired Standard Deviation. The pings are uniformly time-spaced over the ensemble interval. To increase the expected accuracy of the velocity measurement (reduce the Standard Deviation), you can increase either pings per ensemble, bin size or both.

f. Select the ensemble interval. This sets the (minimum) interval over which the WorkHorse will collect and average the pings per ensemble and record data.

g. Select the power mode. This sets the transmit power to high or low.

h. Select the bandwidth mode. The Long Range (LR) mode allows the ADCP to profile farther, but the standard deviation is increased by as much as 2.5 times.

i. Enter the Deployment Parameters.

Deployment Duration - Enter the expected duration of the WorkHorse deployment from the time of the first water profiling ping (either immediately or first ping date/time). This duration *does not* produce a command to instruct the WorkHorse to stop data collection; it is for estimating consequences only. This duration is used to estimate the following *consequences*:

- Battery usage.

- Ensembles.

- Storage required.

Transducer Depth - The ADCP uses depth in its speed of sound calculations. Some ADCPs may be equipped with an internal pressure sensor. If a pressure sensor is not available, the ADCP uses the manual depth setting.

Water Salinity and Temperature - Water salinity and temperature effects the maximum range and to a lesser extent, the battery usage. Fresh water is 0 ppt, salt water is typically 35 ppt.

Magnetic Variation - Use the magnetic variation command to counteract the effects of magnetic declination on the internal WorkHorse compass at the deployment site.

j. Select whether to start the deployment immediately or delayed. Entering a date and time in this field enables a delay from the start of a deployment to the first water profiling ping. When enabled, the WorkHorse will begin collecting velocity data at the date and time specified by the first ping date and time. The WorkHorse will sleep from the time the commands are sent to the WorkHorse until the first ping date and time

k. Select where the data will be sent. Data can be stored internally, sent out the serial port, or both.

- WorkHorse Sentinel ADCPs have 10-MB (standard) storage on the internal PC card recorder. This can be upgraded to 440 MB by installing two 220-MB cards.

- WorkHorse real-time deployments usually store data on the computer's hard drive, but can have up to 440 MB on the internal PC card recorder for back-up use.

l. Check the battery capacity is sufficient for the deployment.

To determine if you have sufficient battery capacity for the deployment, you must know the approximate water temperature at the deployment site and then use the following table to determine the watt-hours available (based on a fresh battery pack). A fresh battery pack has 400 watt-hours of capacity at 0° C. The Sentinel WorkHorse can hold one battery pack. The External Battery Case can hold up to two additional battery packs.

m. Review the following consequences.

- ***Ensembles*** - Shows the expected number of ensembles generated over the duration of the deployment. Each ensemble is recorded/transmitted by the WorkHorse.

- ***Storage*** - Shows the amount of storage space required in megabytes (MB) to record the data generated by the WorkHorse over the duration of the deployment. This value should be compared to the free space available on the internal WorkHorse PC card recorder and/or free space on the Computer logging the data transmitted to the serial interface. Free space on the WorkHorse internal recorder can be determined by using the RS-command.

n. Move the cursor to the Notes section. Use the area to include notes about the command file or deployment.

o. Click **OK** to save the command file. *PLAN* will automatically add the extension *.whp to the file.

Figure 17.   Entering Choices Using PLAN (300kHz Default Settings Shown)

7-2   Sample Printout of a Command File

Once you have entered all of your choices using *PLAN* and saved the file, you can view the command file using any text editor. Lines beginning with a semicolon (;) are comments.

```
CR1
CF11101
EA00000
EB00000
ED0000
ES35
EX11111
EZ1111111
TE01:00:00.00
TP01:20:00
WB0
WD111100000
WF0176
WN030
WP00045
WS1600
WV170
CK
CS
;Deployment hours = 1440.00
;Temperature      = 5.00
;Frequency        = 307200
```

The commands shown in Table 2 explain each command set or added by *PLAN*. These commands directly affect the range of the ADCP, standard deviation (accuracy) of the data, and battery usage. Table 2 explains the commands used in the sample command file. This command file uses the default settings for a 300kHz ADCP.

Table 2:   Command File Created Using PLAN

Command	Choices	Description
CR1	Sets factory defaults	This is the first command sent to the ADCP to place it in a "known" state.
CF11101	Flow control	Record data internally on the PC card recorder.
EA00000	Heading alignment	Use beam-3 as the heading alignment.
EB00000	Heading bias	Magnetic variation.
ED0000	Transducer depth	Manually set depth of the transducer. If a pressure sensor is installed, the ED-command will be used only if the depth sensor fails.
ES35	Salinity	Salinity of water is set to 35 (saltwater).
EX11111	Coordinate transformations	Sets Earth coordinates, use tilts, allow 3-beam solutions, and allow bin mapping to ON.
EZ1111111	Sensor source	Calculate speed of sound from readings, use pressure sensor (if installed), internal compass, internal tilt sensor, and transducer temperature sensor.

Table 2:   Command File Created Using PLAN (continued)

Command	Choices	Description
TE01:00:00.00	Time per ensemble	Ensemble interval is set to one hour.
TP01:20.00	Time between pings	Plan automatically sets the time between pings to spread the pings evenly throughout the ensemble.
WB0	Bandwidth mode	Sets the ADCP to the Broadband mode.
WD111 100 000	Data out	Sets the ADCP to collect velocity, correlation magnitude, echo intensity, and percent-good data. Status data is not used.
WF0176	Blank after transmit	Moves the location of the first depth cell 176 cm away from the transducer head.
WN030	Number of depth cells	Number of bins is set to 30.
WP00045	Pings per ensemble	The ADCP will ping 45 times per ensemble.
WS0400	Depth cell size	Bin size is set to 4 meters.
WV170	Ambiguity velocity	Sets the maximum relative horizontal velocity between water-current speed and WorkHorse speed to 170 cm/s.
CK	Keep parameters as user defaults	If power is lost and then restored, all commands will be restored as last sent. Sent right before the CS-command.
CS	Start pinging	Last command sent to begin collecting data.

7.3   Importing a Command File

If you have a command file created from other deployments or software, you can import it into *WinSC*. The command file must be ASCII text only. Any line that is a comment must start with a semi-colon (;).

a. On the **Functions** menu, click **Import Planning File**.

b. *WinSC* will search for any command files created using PLAN (*.whp), any text file containing ADCP commands (*.txt), or a command file created using the DOS version of PLAN (*.cmd).
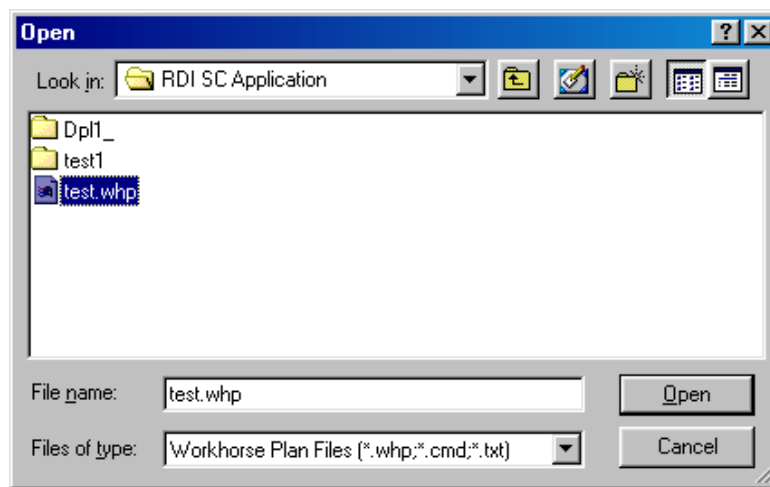
c. Select the file and click **Open**.

Figure 18.   Importing a Command File