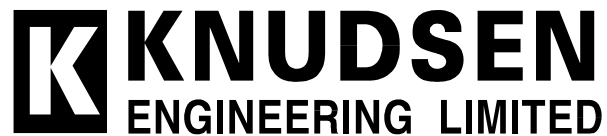


320 SERIES ECHOSOUNDER

PLAYBACK AND PRINTING SOFTWARE MANUAL

Supports Software: PostSurvey.exe: D40-02383 V2.00

D10 - 02193
Revision 3.0
November 9, 1999



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1 INTRODUCTION

1.1 About this manual

This manual provides information about the Playback and Printing application, D40-02383, PostSurvey.exe. This program has been designed to review previously recorded 320 Echosounder SCSI envelope data files and to produce hardcopies on selected thermal recorders and printers.

1.2 Software Description

The 320 Series Echosounders developed and produced by Knudsen Engineering Limited were designed with a SCSI interface for recording detailed envelope data and parameter settings. A specially designed Windows-compatible program was created to play back these data records offline from the sounder and to create hardcopy records.

1.3 Technical Support

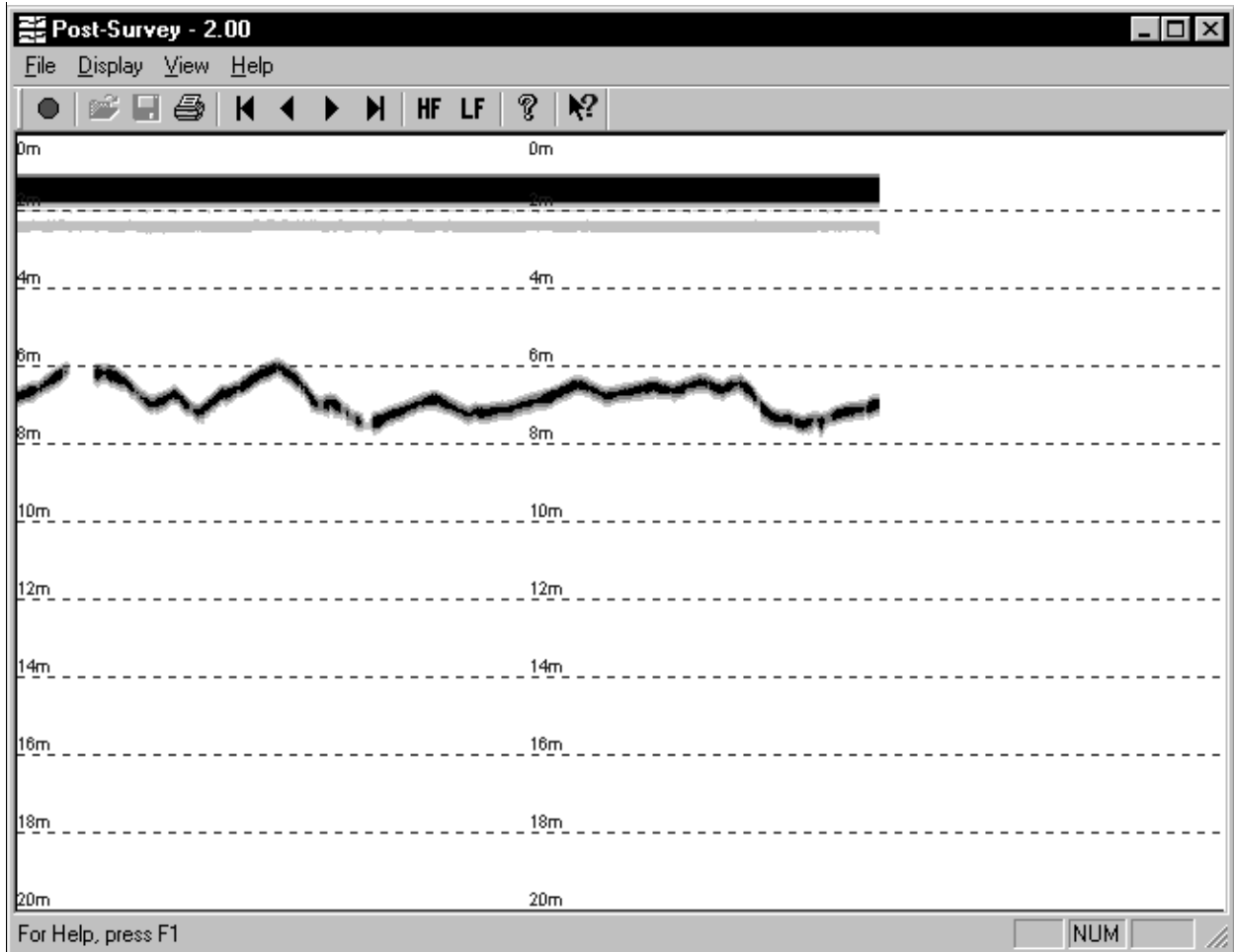
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2 OPERATING INSTRUCTIONS

2.1 Description



The Post-Survey software is a Windows program that provides the capability for data playback and printing of KEL 320 Echosounder data on the PC. When the program is invoked, a window pops up with four control groups offered on the main menu bar, a blank display area for greyscale or colour presentation of the data playback, and a grid scale bar for the data presentation.

2.2 File

2.2.1 Open

If the **Open** command is selected, the program responds with a File Selection dialogue box to access the files. When a valid file (.keb only) is opened, the data from that line file set will be loaded and displayed starting with the first ping in the selected file. This option is not active if a file is already open

A line file set is identified by the first three digits of the file name. The actual data files are recorded with the following file name format:

nnn_hhmm.keb

where nnn = line number of the data set
hh = computer's time - hour
mm = computer's time - minutes
keb = extension for KEL binary data files

In addition to the basic data files, there is a very important file, referred to as the data set log file. Its name is recorded using the following format:

nnn_ttt.log

where nnn = line number of the data set
ttt = refer for data output format: keb for binary, kea for ASCII, sgy for SEG-Y
log = extension for log data files

NOTE: The Post-Survey application needs the log file to determine what data files are to be used for playback purposes, and in what order they are supposed to be played. If only a section of a data set is desired for playback, the log file could be stripped down to the desired files using a hexadecimal editor. The log file may look like an ASCII file, but it uses null fields (00h) instead of space codes (20h) to separate the file names. An ASCII editor would replace the null fields with spaces and the Post-Survey application would not know how to interpret the list properly.

This option is available from the application's toolbar via the button illustrated above.



2.2.2 Save to bitmap

This particular option has not currently been implemented; it should be available in an upcoming release. This option will allow the user to save the current window display to a standard Windows bitmap file.

This option is available from the application's toolbar via the button illustrated above.

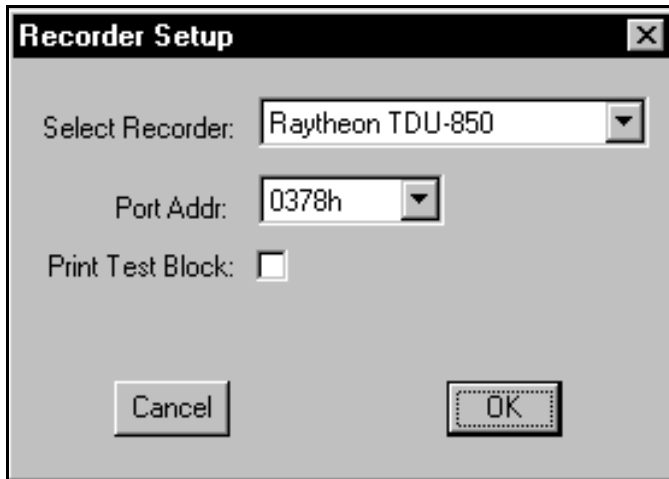
2.2.3 Close

An opened line file set can be closed using the **Close** command. This option is not active if a file set is not already opened.

2.2.4 Thermal Recorder...

This menu option provides access to two sub-menu items that allow the user to setup and send data to a thermal recorder.

2.2.4.1 Setup



This option brings up a dialogue box that allows the user to select a thermal recorder to be used for making hardcopies. The thermal recorders that are currently supported are: **EPC 9800**, **EPC GSP-1086**, and **Raytheon TDU-850**.

The **EPC GSP-1086** driver expects the user to have set following parameters to the values listed via the unit's front panel menus:

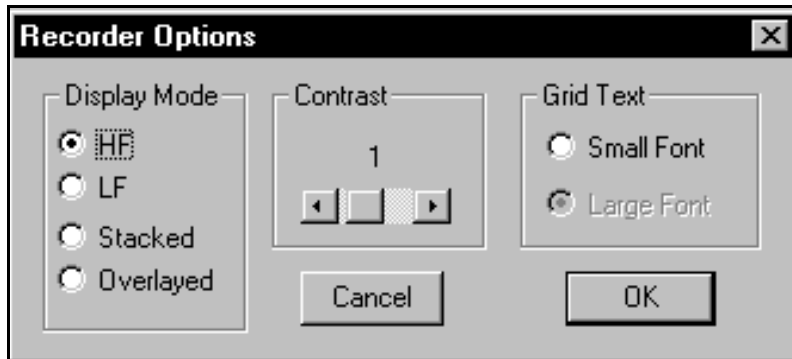
- DATA INPUT = PARALLEL
- SWEEP = FORWARD
- SHADES = 064
- DATA TYPE = 6BITS
- WIDTH = 2048
- LPI = 200 nominal (not EXTERNAL)

The **Port Addr** option allows the user to specified the proper output port address for the printer port. For most systems, this value should be 0378h, but for some laptops and secondary printer ports the alternate value of 0278h could be required.

The **Print Test Block** check box allows the user to tell the application to send some test data to the selected thermal recorder to confirm it is interfaced properly. The test block consists of greyscale ramps with samples of imbedded grid and fix annotation text.

The recorder selection and port address settings are stored in the application's INI file and restored the next time the program is invoked.

2.2.4.2 Send Data

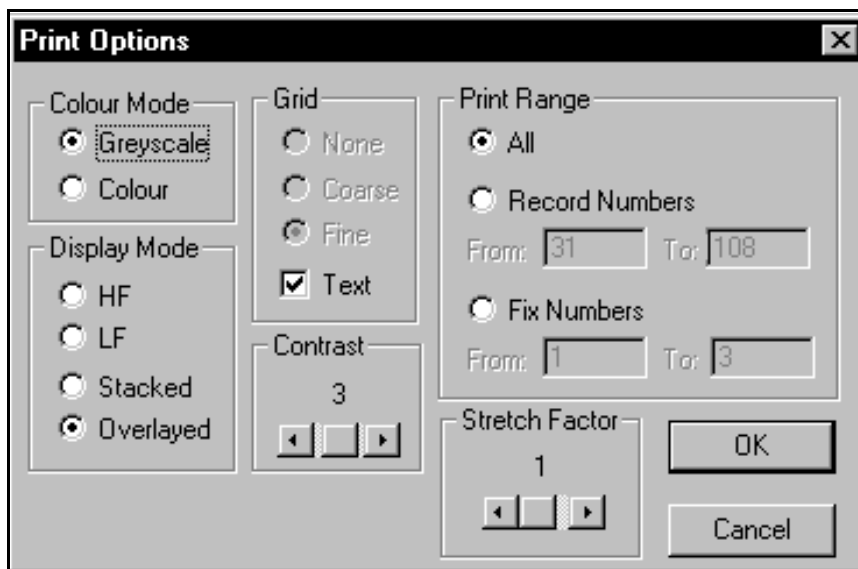


The Send Data menu option is used to print the entire line file data set for the currently opened file. This option is not active if a file is not already opened. When this item is selected, it first causes a dialogue box to pop up that allows the user to select the presentational parameters desired. If the OK box is clicked, the application then brings up a status display dialogue box indicating the progress of the print job in terms of pings printed relative to the total number in the data set. It also provides the user with the ability to cancel the print job if desired.

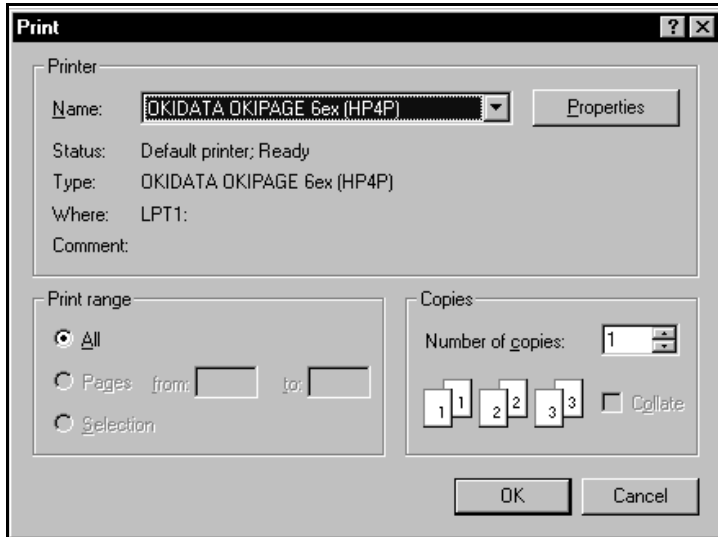
Note: this menu option is only used to send data to thermal recorders, not standard Windows printers. Use the Print command to print to standard Windows printers.

2.2.5 Print

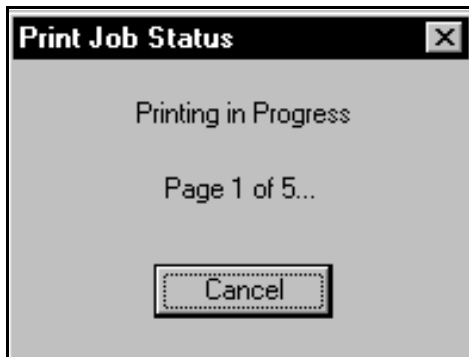
The **Print** option allows the user to print the entire line file data set or limited sections of the set to any Windows printer. This option is available from the application's toolbar via the button illustrated above.



When the **Print** option is selected, a dialogue box pops up that allows the user to setup printout presentation options similar to the screen options: Greyscale/colour mode, display mode, contrast (See Section 2.3). It also has an option for the grid overlay with different textures of grids (currently only one option is available, the rest will be added in an upcoming release) and a text annotation toggle. The Print Range option provides the user with the ability to select the entire line file set or only a section of the line file set to print. The printout can be limited to print between Record Numbers or Fix Numbers (if any exist).



Once the print options have been OK'd, the standard print dialogue box appears. This allows the user access to the printer setup to change from current default printer, and to modify printer setup options. Once all the desired selections are made and the user clicks on OK, the printing will begin. Currently, any printer setup selections made for the current print job will be lost on the next, and have to be re-selected.



NOTE: There is a Cancel Print capability but it has limited response capability once the printing procedure has started. Because the printouts are very graphically intensive and most systems print graphics quite

slowly, the user should be certain he really wants to proceed before clicking OK in the Print dialogue box.

Note: this menu option is only used to send data to standard Windows printers, not thermal recorders. Use the **Thermal Recorder: Send Data** command to print to thermal recorders.

Important information: The printed envelope output is very graphically intensive. Some printers with on-board memory may have problems with data overflow; reducing the print quality (resolution in dpi) may minimize this problem but it also reduces the quality of the printout. Preliminary testing with a limited number of printers had the best presentational results with the following printer setup options (click Setup in the Print dialogue box to access): Landscape mode, Fine dithering, and the highest resolution available to the printer (this is a printer specific option). For users of Windows 95/98, the spooler options should be setup as follows to avoid creating excessively large temporary files (which can quickly over flow hard drives with limited available space): printing should start after the first page has spooled, and the spool data format should be RAW not EMF. In some cases, it may even be better to disable spooling altogether and send the data directly to the printer.

2.2.6 Print Setup

This option is not fully implemented at this time. Any setup changes made with this command are not preserved for the next print action.

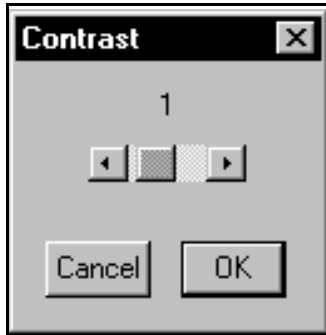
2.2.7 Exit

The user can terminate the Post-Survey program using the **Exit** command. The INI file parameters are recorded as the program is terminated.

2.3 Display

This control group allows access to functions that control the presentation of the envelope data. They are only active if a line file data set has been opened. If no file set is currently opened, they are inactive (greyed out).

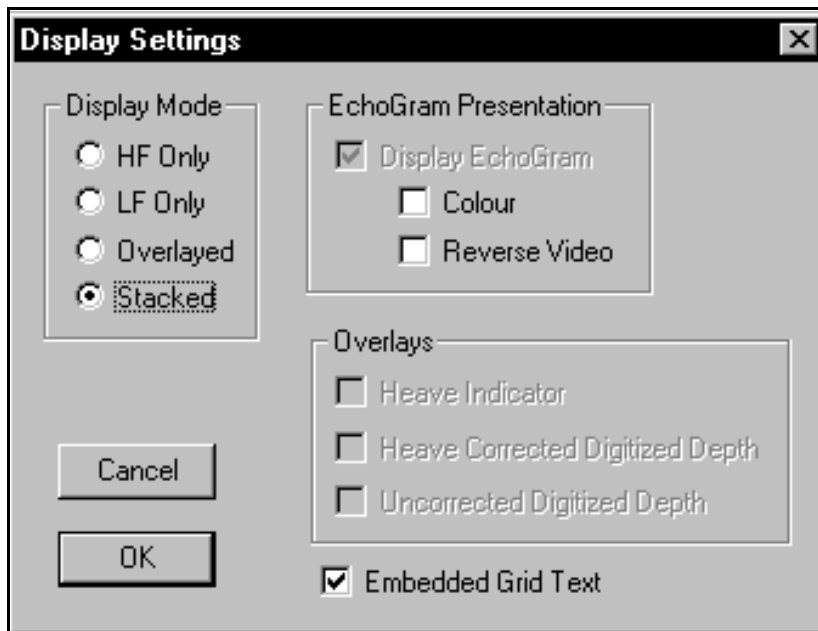
2.3.1 Contrast



This option pops up a dialogue box with a single control that allow the user to increase/decrease the contrast of the displayed greyscale data. This contrast control also adjusts the contrast of the thermal hardcopy record if the recording option is active.

This setting is stored in the application's INI file and restored the next time the program is invoked.

2.3.2 Settings



The **Settings** option brings up a dialogue box that allows the user to customize the display presentation to a configuration that suits his personal requirements. All of these settings are stored in the application's INI file and restored the next time the program is invoked.

2.3.2.1 Display Mode

There four standard presentational formats; these formats are:

- 1) **LF only** displays the low frequency channel only, using the entire display window height.
- 2) **HF only** displays the high frequency channel only, using the entire display window height.
- 3) **Overlaid** displays both channels, if selected, overlaid together, using the entire display window height.
- 4) **Stacked** displays both channels separately, with the HF channel in the top half of the display and the LF in the bottom half.

2.3.2.2 EchoGram Presentation

2.3.2.3 Display EchoGram

The **Display EchoGram** check box allows the user to turn the envelope data presentation on or off. When the box is checked, the actual envelope data is displayed in the window; if this item is not selected, the envelope data is not displayed in the window. For some applications, it may be more useful for the user to simply have the digitized depth overlays displayed instead the entire envelope record. This option has not

been implemented yet; the echogram presentation is always enabled.

2.3.2.3.1 Colour

When **Colour** mode is selected (box checked), the envelope data displayed in the program window is in 15 colour levels, mapped from lowest to highest levels as follows: White(normal video) or Black (reverse video), Light Grey, Dark Grey, Cyan, Blue, Dark Blue, Dark Cyan, Dark Green, Dark Yellow, Green, Yellow, Magenta, Dark Magenta, Red, Dark Red. If this item is not checked, the envelope data is displayed in levels of grey, where for normal video mode white is the lowest level return and black is the highest; for reverse video mode white is the highest level return and black is the lowest..

2.3.2.3.2 Reverse Video

When **Reverse Video** mode is selected, the display colours are configured to make black the main background colour. For both colour and greyscale modes, the lowest level return is assigned the colour black. When **Reverse Video** is not selected (normal mode), the lowest level return is assigned the colour white.

2.3.2.4 Overlays

NOTE: None of the following overlay options have been implemented yet; they will be available in an upcoming release.

2.3.2.4.1 Heave Indicator

The **Heave Indicator** option allows the user to enable or disable an overlay that shows the amount of heave relative to a nominal position on the graphical display.

2.3.2.4.2 Heave Corrected Digitized Depth

The **Heave Corrected Digitized Depth** option allows the user to enable or disable an overlay that shows the positions of the heave corrected digitized depth to surface values for each channel displayed.

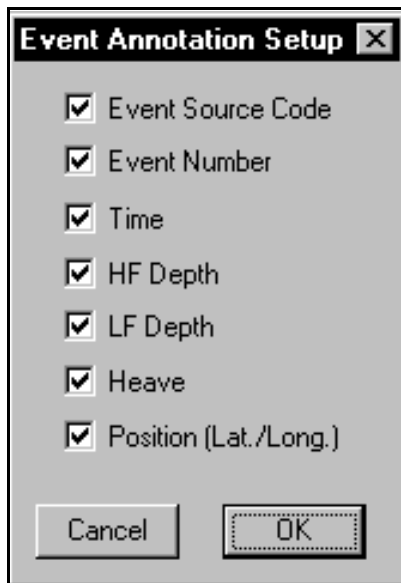
2.3.2.4.3 Uncorrected Digitized Depth

The **Uncorrected Digitized Depth** option allows the user to enable or disable an overlay that shows the positions of the digitized depth to surface values for each channel displayed. These depth values are the depth to surface values compensated for draft but not heave.

2.3.2.5 Embedded Grid Text

The **Embedded Grid Text** option allows the user to enable (box checked) or disable the use of embedded grid text. When this option is enabled, grid text is displayed within the envelope data display whenever a range or phase change occurs, or at evenly spaced intervals if no changes have occurred. The embedded text can be disabled for cases when the grid text changes obscure the envelope data.

2.3.3 Event Annotation



This menu item brings up a dialogue box that allows the user to select which of the available data parameters will be printed out on the event mark annotation line. The selections made here apply to the display, the Windows printer outputs, and the thermal recorder output. The user has no control on the ordering of the parameters; they are output in the order they are listed if they are checked off.

2.4 View

There are four groups of control sets available under this menu branch. The Line Left/Right and Page Left/Right provide the user the ability to pan backwards and forwards through the line file data set in large or small increments.

The Channel Data controls allow the user to display data presentation box for the individual frequency channels. The Toolbar / Status Bar controls allow the user to enable or disable these tools.

Note: To support the extremely large quantities of recorded data that could be available in a single line set, the application only reads a portion of the data set into system memory. As the user pans back and forth through the data set, the application will have to load new data at certain intervals; this reading process can take a measurable amount of time. When this happens the application will display an hourglass cursor, until the data has been loaded and the display refreshed.

2.4.1 Line Left

The Line Left option is a playback control which is active only when a line file data set is opened. Clicking on this control causes the data display to shift by one ping record to the left.

This option is available from the application's toolbar via the button illustrated above.

2.4.2 Line Right

The Line Right option is a playback control which is active only when a line file data set is opened. Clicking on this control causes the data display to shift by one ping record to the right.

This option is available from the application's toolbar via the button illustrated above.

2.4.3 Page Left

The Page Left option is a playback control which is active only when a line file data set is opened. Clicking on this control causes the data display to shift to the left by 1/4 of the current display window's width.

This option is available from the application's toolbar via the button illustrated above.

2.4.4 Page Right

The Page Right option is a playback control which is active only when a line file data set is opened. Clicking on this control causes the data display to shift to the right by 1/4 of the current display window's width.

This option is available from the application's toolbar via the button illustrated above.

2.4.5 HF/LF Channel Data

CHANNEL ID:	HF
Record #:	07436
Depth:	Off
Echo Strength:	N/A
Tx Power:	N/A
Rx Gain:	N/A
Processing Gain:	N/A
Sensitivity:	N/A
Draft:	N/A
Tx Blank:	N/A
Pulse Type #:	N/A
Filter Type #:	N/A

CHANNEL ID:	LF
Record #:	07436
Depth:	0.00 m
Echo Strength:	-1 dB
Tx Power:	3
Rx Gain:	3
Processing Gain:	4
Sensitivity:	0 %
Draft:	51.68 m
Tx Blank:	11.20 m
Pulse Type #:	0
Filter Type #:	0

These Channel Data controls allow the user to display or close individual dialogue boxes for each frequency channel. If the user clicks the left mouse button while pointing the cursor to a position of interest on the echogram display window, any active channel data dialogue boxes will display the following data for the ping record represented by that point: record number assigned by the echosounder, the depth and echo

strength determined by the echosounder's digitizer, and all of the transmit power, gain, sensitivity, draft, transmit blanking, pulse type and filter type settings used for the ping cycle.

This option is available from the application's toolbar via the button illustrated above.

2.4.6 Parameter Data

Parameters	
Record #:	7436
Time Stamp:	12:59:58.077
Working Units:	meters
Sound Speed:	1500 m/s
Window Limits:	0 - 20 m
Primary Channel:	HF
Fix Status:	None
Fix Number:	16513
Heave:	0.00 m
Latitude:	00 0.00000 N
Longitude:	000 0.00000 E

The Parameter Data option provides the user with the ability to display or close a dialogue box that presents the non-channel specific data recorded from the echosounder. If the user clicks the left mouse button while pointing the cursor to a position of interest on the echogram display window, the active parameter data dialogue box will display the following data for the ping record represented by that point: record number assigned by the echosounder, echosounder time stamp at start of the ping cycle, working units and speed of sound being used for calculations, upper and lower limits of the active window being displayed, primary channel used for bottom detection tests, fix status code and fix number if a fix condition exists, and the heave and position data used for the ping cycle.

2.4.7 Toolbar

This control allows the user to enable and disable the application's toolbar as desired. The toolbar is a "bar" located at the top of the application's window, just below the main menu bar. When active, it displays pushbutton controls that provide shortcuts to desired menu controls. When the toolbar is active, the effectively usable display area is decreased by the amount used for the toolbar. Disabling the toolbar can give a slightly larger display area in the same size application window.

2.4.8 Status Bar

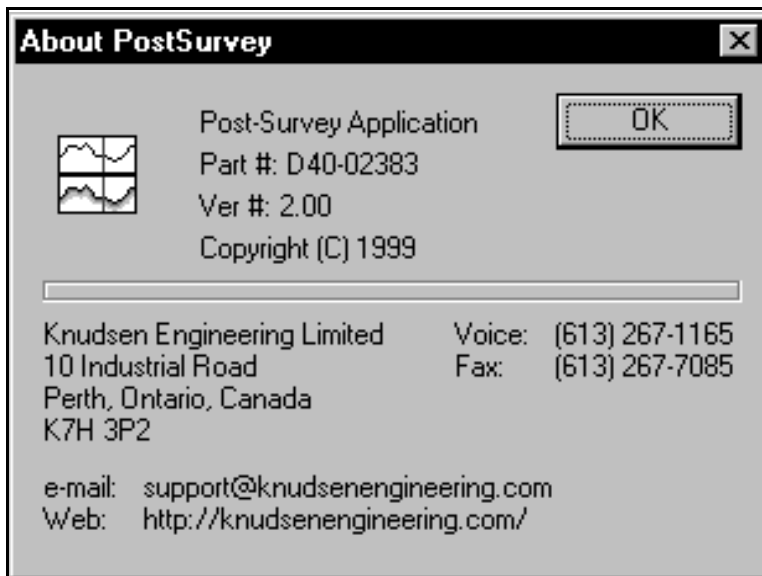
This control allows the user to enable and disable the application's status bar. The status bar is located at the bottom of the application's window. The status bar provides helpful messages in the left hand corner that describe menu controls, and other helpful items.

2.5 Help

2.5.1 Help Topics

The Help Topics item accesses the help file contents for the Post-Survey application. The actual help file has not been fully implemented at this time.

2.5.2 About PostSurvey



The **About ECHOPOST...** menu item brings up a simple dialogue box stating the name of the PC software program, the KEL part number for the program, and the latest revision number.

This item is available from the application's toolbar via the button illustrated above.