

Ver. 7.25 P-Sea WindPlot 3D Option Operation Guide

3D is an option that is not normally included with P-Sea WindPlot. You must install the 3D version of P-Sea WindPlot and purchase the activation code. It comes with one 3D data CD.

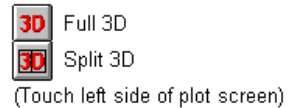
Starting 3D P-SeaBed

- 1) Start P-Sea WindPlot and enter your SR#
- 2) Click on *Options* in the menu bar and select *3D Window*.

The 3D window should appear on the right side on a few moments.



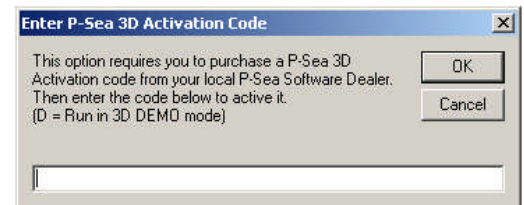
OR you can start the 3D by clicking on a set of buttons that appear when you touch on the left side of the plotter like these shown to the right here. The top button calls the 3D in full screen mode while the lower button calls the 3D in split screen plotter/3D mode. These buttons DO NOT appear until the Activation Code shown below has been entered.



Entering the Activation Code.

In order to access the 3D you must purchase an activation code. This code can be purchased from your local P-Sea Software dealer.

- 1) Start P-Sea WindPlot and enter your SR#
- 2) Click on *Options* in the menu bar and select *3D Window*.
- 3) A box will appear asking for the code, then just enter and select *Ok*- the 3D window will open up.

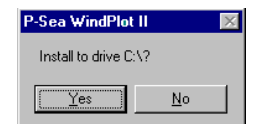
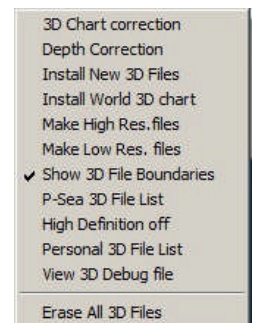


If you make an error entering the number and it is not accepted you will have to restart the program in order to try it again. This number is saved by the computer and there is no need to enter it again on this computer.

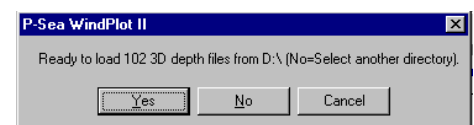
Loading Personal/Regional HR/World 3D Data Files

The easiest way to load 3D data files is to place the 3D data CD/DVD in the drive BEFORE starting P-Sea WindPlot. Then you will be asked if you want them loaded when you restart WindPlot and enter your SR#. ...OR . . The 3D data files can be loaded with WindPlot from the "Data" > "Charts" menu or while running in 3D mode. Files are simply copied to the *Pc3Depth* folder. Some files are serialized so the program will not load or display charts with the wrong serial number. The files can be identified by a "B" as the first letter and have a "BDF" file extension. High resolution 3D files start with a "H" and have either a "BDF" or "BDH" (H stands for High def. files) extension.

- 1) With WindPlot 3D running in 3D mode, click "*Depth Files*" menu.
- 2) Then for World DVD, select "*Install New World 3D Files*" or for Regional 3D charts select "*Install New 3D Files*".
- 3) Then you will be asked if you want to install it to drive "C:". Usually this is the preferred place so just click on "*Yes*". Select "*No*" to choose a different drive if available.
- 4) Then the program will then indicate how many files and where the files are coming from. Just click "*Yes*" to begin the install. As the files install you should see the screen count down the number of files to install along with the name of each file. (i.e. "Copy #101 B38124.BDF").



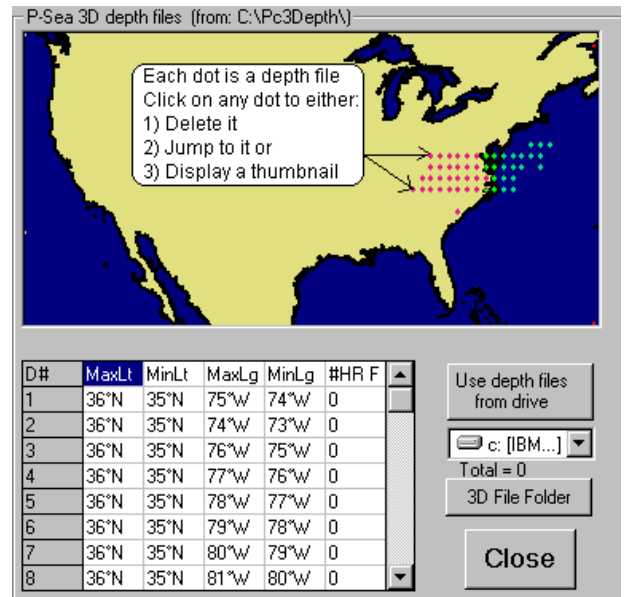
NOTE: You can stop the files from copying by pressing the "Esc" key. Keep pressing as it will not stop until the current file have finished copying.



3D File list

The “P-Sea 3D Depth Files” window list all files in Lat/Long, you can jump to or delete a file. You can also change the drive that the files are displayed from.

Each standard 3D file that is represented by a dot on the USA map consists of many individual depth readings (1.44 million) that cover an area of 1 x 1 degrees of Lat/Long. If you look at the actual file names, they indicate the area covered. For example, 3D depth file #1 shown here to the right covers 27-28N Latitude and 88-89 W Longitude. The name of this file would be “B28089.BDF”. The High Resolution files cover a smaller area, Each is 10 x 10 minutes in size, each with another 1.44 million depths. It takes 36 of the HR files to make up one standard resolution file. Look at the last column in the file list labeled “#HRF”. This column list how many HR files that are available for the standard 3D file that covers the same area.



Calling the 3D file list

Click on “Depth File”s menu then select “P-Sea 3D files” to list the 3D files from P-Sea Software or “Personal 3D file”s to list the file made from the P-SeaBed Builder option.

Setting DRIVE to get 3D depth files from

The files will automatically load to drive “C” in a folder named “Pc3Depth” unless you change drives in the “Depth Files” “P-Sea 3D files” menu. The list of files will appear with a drive selection located at the bottom of the window. Just change the drive and click the “Use depth files from drive” button.

Changing 3D depth file folder

The default 3D file folder is “Pc3Depth”. If this default 3D file folder is ok then there is nothing you have to do. You can change to another folder if you like. The folder must already exist, if it doesn’t then use Windows to create a new one. Then to change to that folder, first select the drive it is in and then click the “3D File Folder” button. Then navigate to the new folder by clicking the proper path in the window that appears. Then click the “Change Folder” button to lock on the new folder. The USA and the list should reflect what is in the new folder you changed to. If there is any 3D files of any kind then the list and the USA map will be blank.

Exploring a 3D depth file.

You can click on first column labeled D# to jump to the center location of the file. The program automatically closes the file list, turns on the cursor and places the cursor in the center of the depth file. Click on the second column labeled MaxLt to copy the file you click on to another drive and /or directory. Click on the third column to copy ALL files to another drive and/or directory.

USA 3D Map

A map of the US is displayed at the top of the 3D file list. All 3D files within the area covered by this map will show up as a dot to indicated the files location. Just click on one of these dots to jump to the center of the files location and display it, delete the file or display a thumbnail of it. The first time you click on one of the dots you get an option menu to select what will be done when you click on the dot again. Just select one then click on the dot.

Creating High-Resolution 3D files from the 3D file list

When 3D was first created for WindPlot there was just one level of 3D detail. Each standard 3D file covers a 1x1 degree area. If your 3D regional chart came on DVD then you DO NOT NEED TO CREATE them as they are now included and also include some High Definition charts that will be wiped out if you do proceed.

This caused 3D to be usable only between 2 and 20 mile range .Later the 3D program was used to make new HR files that are 6 times better resolution were created from the standard files. It takes 36 of the HR files to cover the same area as one standard resolution files. In late 2009, P-Sea Software Company started providing 3D High-Resolution (HR) on DVD's for each standard 3D region sold. Regular P-Sea 3D data files are at 3-arc second. This means that on lower-ranges like 5 miles or less you begin to see a boxy-looking 3D display. HR 3D files create 1/3 arc second for smoother looking 3D at lower ranges If you decide to make your own HR 3D files, then it takes approximately 1 minute to create each file and each file is 4 megs in size. Therefore be sure you have several hours to just let the computer work and that you have plenty of disk space (about 6 gigs will do it for each region). The program will estimate the time and disk space required before you begin and you have the option to cancel out if you decide to. **IT IS NOT RECOMMENDED TO DO THIS AT SEA** as it increased the chance of hard drive failure.

To begin creating high-res. 3D files, just start the 3D program (Options>3D display) in P-Sea WindPlot II 7.13 or better, click on the "*Depth File*" menu on the 3D window and select "*Make High Res. Files*". A "Stop" button is provided so that you can interrupt the creator at any time. The files you already made will be bypassed the next time you start the creator.

Some of the HR files supplied with the program are made from real data, these files are considered High Definition (HD). They are supplied with the HR DVD and P-Sea Software will keep adding new areas as they become available. If you like to look at the file names then you can identify the HD files by the file extension BDH instead of the normal BDF 3D file extension. You can identify when you are using the HD files by looking for the file name in the 3D menu bar for "*Hi-Def*".

Creating Low Resolution 3D files from your 3D regional chart.

The program can make a less detailed 3D file from your regular 3D charts for use when just above the 20 mile range. You should make the low resolution charts after loading your 3D regional chart DVD. You only need to do this once for every time you add any 3D regional chart DVD's. What it allows you to view your 3D charts on larger ranges. If you do not do this then when you zoom to a range between 30 and 70 miles there will be no 3D picture.

To generate these low resolution 3D just open the WindPlot 3D option and then click on the "Depth Files" menu and select "Make Low Resolution Files".

Personal 3D files

Basically this is the same as above except it lists all personal files created using the P-SeaBed Builder option. These files will appear with the same name as the regular charts except the start out with a "P" instead of "B".

Erase all 3D files

This is a menu item in the "*Depth files*" menu Erases all 3D files from the hard drive. Just click on *Depth files* in the 3D window and select the last item "*Erase all 3D files*".

Computer Setup & Trouble shooting (skip if 3D is operating ok)

The program is designed to work with a computer screen resolution of 1024 x 768 when using the "*Split Screen*" mode otherwise some controls will not be available.

3D also requires either 16 or 32 bit color depth. The P-SeaBed option however only works with 32 bit color. This should not be an issue with Windows 7 but you can check these settings on other computers by right-clicking on a blank area of your computers desktop (anywhere where there is no icon) and select properties from the menu that appears. Then click the SETTINGS tab. This window has both the color depth and screen resolution. Just make the appropriate changes and click on apply. Be sure to close P-Sea WindPlot 3D anytime you make these changes.

The 3D WindPlot program requires a 3D Windows driver/engine program called Direct X 8.1 or better. This comes with all windows from 98SE on up but the version may be less than that and the 3D will fail to operate. You can check the 3D setup and other Windows and computer specifications using the **DXDIAG.EXE** program located on the installation CD. To run it, use MY COMPUTER to locate the file on the 3D installation CD and double-click it to start it up. There is a DIRECTX 8.1 update on the install CD for Windows 98 and ME, just run DX81ENG.EXE (just run DX81END.EXE from RUN on the task bar) or just find another program on the installation CD called D3OPTIONS.EXE and double-click it to start it up. Then click the INSTALL DIRECTX8.1 button to update your direct X. To install 8.1 on XP and Win2000pro, locate the **DirX81for XP_2000pro** folder and run "DXSETUP.EXE".

You can not run the plotter in SPLIT SCREEN (located in the 2D *Window* menu) and use the 3D at the same time. If you are still not able to get the 3D working then make sure the plotter is not trying to run in plotter split mode (this is different than 3D split mode). To do this, first restart WindPlot 3-D program. Do not start the 3D, instead choose the WINDOW menu and select SPLIT SCREEN. Now click on the FULL SCREEN window box and exit the program again. Now restart WindPlot 3D and see if the 3D work.

You can get further assistance finding the problem from the 3D debug file. This is a text file that is generated by the 3D program that follows each step that is used to create a 3D image. The 3D debug file can be displayed by opening the 3D window, click on then "*Depth Files*" menu and select "*View 3D debug file*". Some of the text could give you an idea what is wrong.

Did you load your 3D depth files? If the 3D screen says "*NO DATA FOR THIS AREA*" and your positioned where there should be data then you most likely do not have the 3D data loaded. To load 3D data, just place the 3D data CD/DVD in the drive and select "*DEPTH FILES*" from the 3D window menu. Then select "*P-SEA 3D DEPTH FILES*" and just answer the questions that are asked.

If you have checked all of the suggestions above and still just see a blank screen, then try putting *the* mouse arrow in the middle of the 3D window and at the same time hold down on the right mouse button. Move the mouse now up and down (same as zooming in and out), right and left (same as rotating the 3D picture) and see if you can't get some kind of image on the 3D screen.

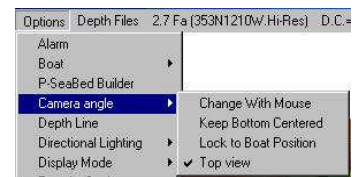
Now if you have **3D working but it crashes** when you try to go full screen or resize the borders then you need to load the version of Direct X that came with the video board on your computer. It must be at least version 8.1 or better. If this isn't possible, then open up the 3D screen without resizing it. Click on the "*OPTIONS*" in the menu bar of the 3D window and select "*Resizing Error*" and try it again.

Sometimes when a program is updated and 3D is then installed the 3D won't work right or maybe it was working ok and suddenly started acting or not at all. We suggest either recalling your saved setup or recall factory defaults to get it back to working properly. In either case, click on the 3D "*Option*" menu and select "*Favorite Settings*" and select either "*Recall Defaults*" or if you have a backup click "*Recall Settings*".

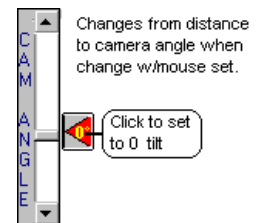
You should read this entire section on 3D before you begin using it at sea so that you are familiar with what the 3D program is suppose to do. There are a lot of settings that need to be done to fit the way you want the 3D to work but you must read it all in order to really know which of these settings is right for you. Once you get the 3D running the way you want then you should choose the 3D Option menu and select "*Favorite Settings*" and select "*Save Current Saving*" so that you can recall these settings later if needed. That way you can go ahead

Maximum setting is 7 and the program will automatically readjust the size down if you get it too large for the 3D program to handle. Set this up when you are using small plotter ranges. The “I” button located on the scaler changes the 3D to independent ranges where the 3D and 2D ranges and cursors work independently from each other.

The items located in the lower-left will change depending on the “Camera Angle” setting in the “Options” menu. These controls can be thought of controls for a SUV with tilt, height and distance controls.

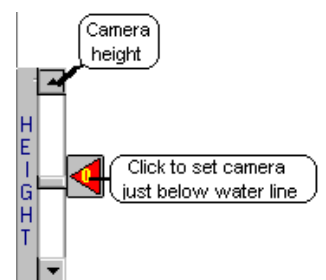


When set to “Change with Mouse”, the scroll bar controls the tilt of the submersible camera and appears as shown here. It will be located just below the color bar is the scrollbar that can represent either the **tilt** (or down bubble) or the distance from center of boat/bottom depending on how you have the “Camera Angle” select set in the “Options” menu show to the right here. A button will also appear in this mode that will change the tilt to zero degrees when clicked as show here to the right next to the menu list. Not available in “Top View”.

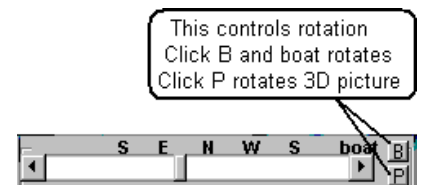


The other menu selections control the distance submersible is from the center line that drops down from the boat to the bottom of the screen. The scroll bars appearance changes as show here to the right in this mode. Not available in “Top View”.

The last item located on the left of the 3D window just beside the “Camera Tilt or Distance” scroll bar is the camera height (or depth of the submersible). Camera **HEIGHT** is controlled by moving the scroll bar on the bottom-right of the 3D window. If you put the scroll bar all the way to the bottom, the camera will **FLOAT** on the bottom of the seabed. Placing the scroll bar all the way to the top will put the camera somewhere above the water line. You can set the water transparency so that you can see through the water and thus still see the bottom. When doing this you need to set the camera tilt all the way to the bottom of the setting. Click the red button with the yellow zero to put the camera at a 0 degree or no tilt.



Located to the bottom is the **rotation** (or submersible heading) slider. You can click and drag these controls to do the same actions as the mouse. Drag the pan scroll bar on the bottom to move to north, east, west or southern views represented by the letters S, E, N and W. Not available in “Top View”. You can also just click the letters to quickly rotate to that direction.



There are two buttons on the right-end of the pan slider “B” and “P”. Click the “B” and “Boat” will appear on the scroll bar. When in this mode the pan slider moves the “BOAT”. Then when the only the boat rotates when the vessel heading changes and the 3D scenery stays still. When “P” is selected the slider bar displays “Pic.” Now when the vessel changes heading the boat stays pointing the same and the 3D scenery rotates.

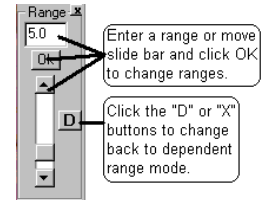
The “Full Screen” button located to the right of the PAN control expands the 3D screen over the entire screen. You can still track and mark while in full screen 3D mode. Marks and tracks will appear on the seabed as long as they are turned on. One word of caution is that the speed of the 3D is greatly reduced for each track that is display. See “Show Track Lines” in the “Options” menu description for more details. The “Plotter” button turns the 3D off and returns back to the plotter screen in full-screen mode. Full mode does not have full control of the plotter functions so we suggest using split screen mode for normal operation. 6



Located to the right of the Full Screen button are the exaggeration buttons. “*Exaggeration*” exaggerates apparent height and depth of objects like canyons and sea mounts making bottom detail easier to see. There are four selections, **X1**, **X2**, **X3** and **X?**. The **X1** is a one-to-one ratio from water to seabed. **X2** is the height of objects are twice as big as **X1** where the water line remains the same. **X3** is 3 times that of **X1**. When you click **X?** you can enter any value up to 10. In most cases “X3” is gives the best results.



Located just above the “*Exaggerate*” buttons and on the right-side of the screen is the 3D “*Range*” box. This only appears when 3D display mode is set for “Independent” operation. Just enter a range between 1 and 7 to bring up the Hi-res 3D charts, 8 to 26 for regular 3D charts and 50 on up for the World 3D charts. In 3D split-screen mode you will notice when changing ranges that the plotter side does not change when you change the 3D range and visa-versa. Click the “*D*” button on the range box to switch back to “Dependent” range mode.



Tracks. In “*Color Depths*” mode the tracks will show in the 3D if “*Show Tracks*” is checked in the 3D “*Options*” menu. A word of caution is due if you have a lot of tracks concentrated in the area you are working in and you are using the “*Color Depths*” display mode. In this mode the program has to redraw each track for each frame of the 3D picture. For a smooth 3D picture there must be at least 4 frames per second. So if you have say 10 tracks showing on the screen and the frames per second is 10 then the computer has to draw 100 tracks each second so you can see how a bunch of tracks can slow the computer down considerably. It is suggested to turn off any tracks that do not need to be displayed or switch the “*Color Depths*” off by unchecking it. Of course the tracks must also be turned on in the plotter screen as well for them to show up in either 3D display mode.

Setting up for P-SeaBed Builder EVEN IF YOU DIDN'T PURCHASE IT!

In order to make your own charts with P-SeaBed Builder, you depth sounder need to output NMEA0183 to the computer. When this is done the depth readout will show up just below the vessel’s speed and heading on the plotter screen. Then the depth needs to be stored some how and this is done using your tracks. The track depth data is used to rebuild the bottom. Be sure to check that your tracks are storing depth by going to *TRACKS CURRENT TRACK TYPE* menus. You should do this even if you do not have the P-SeaBed option because you can store tracks in depth now and use it later to rebuild your bottom should you ever decide to purchase it.

Check Your Computer Speed with 3D!

After loading your 3D data CD’s you should check your computer 3D drawing speed. The speed is measured in FPS or Frames Per Second. For new installations this is automatically turned on the first time the 3D window is opened. If you do not see the letters FPS in red in the upper-left of the 3D window then click on “*OPTIONS*” in the 3D window and select “*FRAMES PER SECOND*”. This number will change a little with various 3D options that are selected. It will also increase as you get closer to the seabed. It only measures the FPS when you are moving the 3D picture around. When you have a fast computer you shouldn’t notice any jerky movement in the 3D. For a usable computer the ***FPS needs to be at least 4 for smooth operation.*** If your number is lower than this then try turning off some Options in the 3D options menu like less maximum tracks or turn some of the tracks off. If you are using two monitors, try reversing the main monitor in the video settings. Run “*Top View*” mode if your FPS is less than this as it does not need to be fast. If you are using two monitors to display the plotter and 3D screen separately and you have a low FPS then try swapping the monitors around. Only one of the two monitors will be fast enough for 3D.

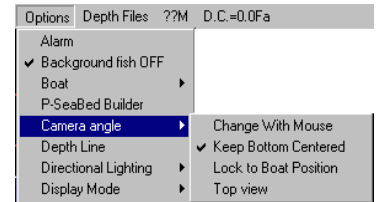
What should you expect to see?

What you **shouldn’t** expect is to see individual rocks, wrecks (unless they are large), boulders and other small objects. The purpose of this program is to give you a general three dimensional perspective of the oceans floor

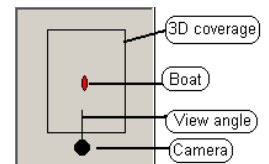
as if you were looking at it from a mile or two. Later, we will add more detail for use with the bottom builder that will bring smaller objects more into focus but for now do not expect to see any detail. For this reason we suggest you either use plotter ranges over 4 miles or run the 3D scale up to 3 or better. Otherwise you will be looking a blocky chunks that are at each individual depth readings. By the way each spot depth is spaced 3 seconds apart.

Mouse Control (Not available in “Top View”)

The view in the window is referred to as the CAMERA view. The mouse controls where the camera is pointing. There are four modes that the mouse can operate by. The four options are selected in the 3D “Options” menu show here to the right under the menu item “CAMERA ANGLE”. The first selection “Change with Mouse” gives total control to the mouse and you have to use both right and left mouse buttons to gain total control of where the camera view is. The next is the preferred and default method “Keep Bottom Centered”, keeps the camera pointed at bottom located directly beneath the boat in the center of the screen at all times by automatically controlling the tilt and pan depending on camera position. (beware, in this mode the bottom may not appear if the camera height is set too high or bottom is too deep). The next menu item “Lock to Boat Position”, automatically controls just the pan only, depending on the position of the camera. If you do not like how the mouse works for 3D then you can purchase a computer “Joy Stick” that will control the 3D as well. The last item, “Top View”, has no mouse control. The 3D picture is presented as if you’re looking through a glass bottom boat.



While you hold either mouse button down, you will see a gray square appear in the 3D window that aids you in where the camera is in relation to the boat. The box inside of this gray box represents the total area covered by the 3D screen where the top of the box is pointed NORTH. The red dot represents the boat and the black dot is the camera with a black line pointing the direction the camera is aimed at. This is a view as if you were looking from the top down.



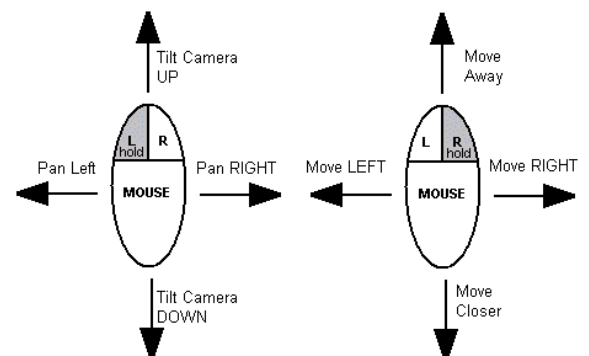
The button in the upper-right shown here to the right will disable the mouse from moving the 3D picture when you click it so it has a red circle with a slash through it. Then you can leave a mark with the right-mouse button or get instant cursor when holding the left button. Also, when the red circle is on this button you can hold down the left mouse button and when you move the mouse a 3D instant cursor appears with the position showing in a box at the top. It will also move the 2D cursor if your running in 3D split screen and in 3D dependent mode.



The workings of this should be more apparent once you have the program running and you use the mouse to change positions.

Mouse Control / Change with Mouse

See the diagram on the right here. Place the mouse arrow over the 3D window then press and hold the **left** mouse button. When you move the mouse up and down the camera view tilts up and down. Move the mouse right to left and the camera pans (swings) right to left. Press and hold the **Right** mouse button and the screen goes right and left as you move the mouse right and left. The 3D bottom moves further away as you move the mouse away from you and closer as you move the mouse closer. Remember, you still need to adjust your camera height depending on the depth you are at. If you do not see the bottom then move the camera height down (use scroll bar on lower-right) and move the bottom further away.

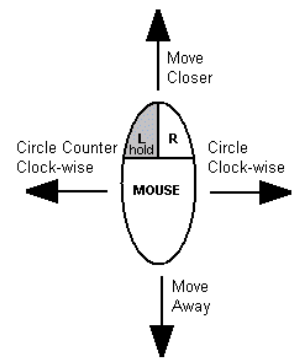


Mouse Control/Keep Bottom Centered (Recommended/default)

This mode is most like the first mode except the pan-left and pan-right when you hold the left mouse and move left and right causes the pan to center on the boat instead of going around in a circle (if make mark with right button is not selected).

Mouse Control/Lock to Boat Position

See the diagram on the right here. The right mouse button is not needed in this mode and it only works when the cursor is not turned on. This mode is the most automated and thus *the one recommended to use*. If you move the mouse right and left, the camera view is rotated around the bottom located underneath the boat.



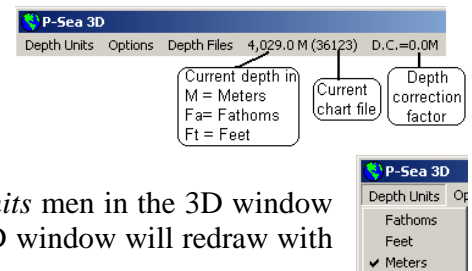
Move the mouse towards you to move closer away and move the mouse towards the center of the 3D to move closer. Note that moving above the center also moves away from the bottom. Tilt and pan are automatically adjusted in this mode so there is no need to use the right mouse button (if make mark with right button is not selected).

Mouse Control/Top View

The “Top View”, has no mouse control. The 3D picture is presented as if you’re looking through a glass bottom boat.

P-SeaBed 3D Menu Bar

The 3D menu bar is split up into four main categories: **Depth Units**, **Options** and **Depth Files**.



3D Depth Units

This menu is used to change the depth **Unit** readout. Just select *Depth Units* men in the 3D window and click on one of the three selections; **Fathoms**, **Feet** or **Meters**. The 3D window will redraw with all depth units changes to your selection.

3D Options Menu

Alarm: Set a depth to alarm at if gets deeper and/or shallower.

Boat: Changes 3D Boat position icon size and level in water or turns it off.

Bottom Builder (Optional) : Builds 3D screens from track and mark files.

Camera Angle: Change how mouse and keyboard reacts in 3D viewport.

Depth line: Provides a black line at a depth you enter.

(Only appears when not using chart overlay mode).

Depth line alarm: Alarm sounds when outside of selected depth line depth.

(Only appears when not using chart overlay mode).

Directional Lightening: Directional lighting setup for presenting 3D SeaBed with shadows directions , color depth, boat shadowing, brightness and overlay offset

Display Mode: Selects Chart Overlay/color scale modes; Auto, Manual and Custom color and more.

Favorite Settings: Save and recall your current 3D settings or set to factory defaults.

Fill in edges: Edges where the 3D ends are squared off when checked.

Indicators: Select what indicator aids will be displayed.

Turn off Hardware TL: Turns of Hardware Transform and Lighting.

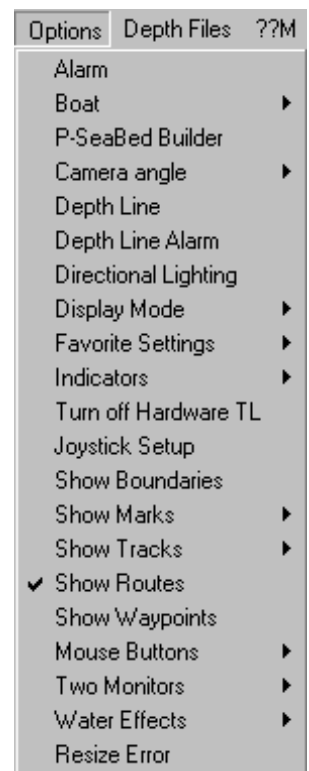
Joystick Setup: Sets up buttons and controls on Joystick for specific tasks.

Show Boundaries Shows boundaries that was setup in the 2D window

Show Marks: Turn 3D marks ON with a highlighting circle or depth display option.

Show Tracks: Sets how tracks are displayed in the 3D window.

Show Routes Shows routes that was setup 1n the 2D window.



Show Waypoints Shows a waypoint that was setup in the 2D window

Mouse Buttons: Switches right and left mouse buttons or makes mark w/right button

Two Monitors: For dual video displays, selects single or dual monitors

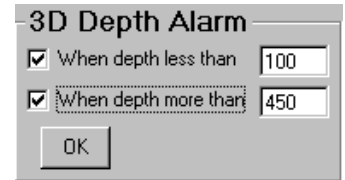
Water Effects: Controls water clarity, level, surface transparency, wave speed or turns it off completely.

Resize Error: Click this so it is checked if your computer crashes when the 3D window is resized.

3D Options Alarm

Click this menu option to call the window shown to the right here.

You can set an audio/visual alarm to go off when a certain depth is either gone more and /or less than the specified depths. Just set the depth you want in the box to the right of the check box and click the check box so it is checked.

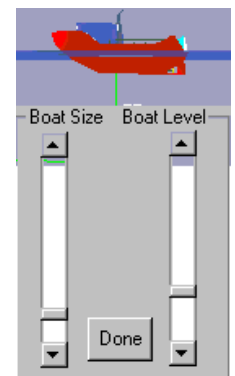
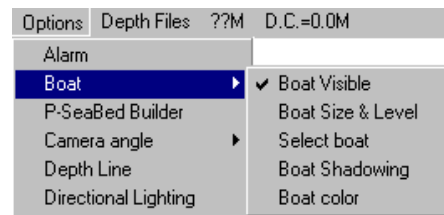


3D Options Boat sub menu

Changes 3D Boat position icon, adjust its level in water or turns it off.

3D Options Boat Boat Visible

Un-check to turn 3D boat icon off.



3D Options Boat Boat Size & Level

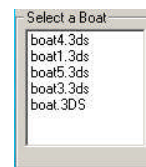
Adjusts how deep the 3D boat icon is in the water.

- 1) Make sure the boat is visible in the 3D screen.
- 2) Select the "Boat Size & Level" item in the "Options" "Boat" menu path.
- 3) Two scroll bars will appear, just drag and watch the boat level or size adjust as you move it.
- 4) Click "Done" button when you are satisfied with the level of the boat.

3D Options Boat Select Boat

There are several 3D boat icons to choose from.

- 1) Click "Select boat" item in the "Boat" menu.
- 2) Click on one of the boat names.
- 3) Adjust boat level and size as previously mentioned.



3D Options Boat Boat Shadowing

Use to change how bright the boat will appear. This can also affect the shadowing of the bottom on some graphics cards so if the bottom appears dark, try changing the boat shadowing. If bottom appears black, try changing this value to 10 to 40 and see if it helps.

3D Options Boat Boat Color

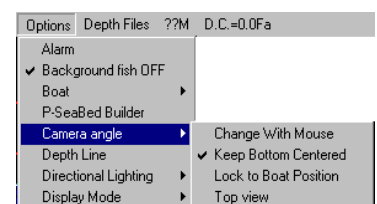
Select a solid color for the boat or click *Cancel* to return boat back to original color.

3D Options P-Sea Bottom Builder Menu (Optional)

See *Using the P-Sea Bottom Builder Menu (Optional)* at the end of this section.

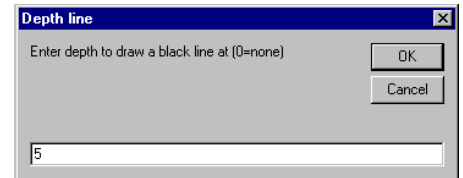
3D Options Camera Angle sub menu

This is a sub menu that has three categories shown here to the right. Please see "Mouse Control" that was previously described for the details of each except for "Top View". This mode is always looking straight down and the boat is always oriented in the north direction. Default is "Keep Bottom Centered".



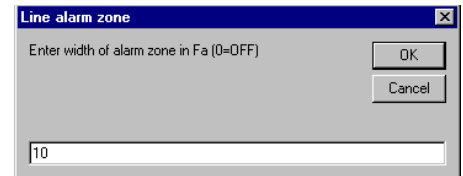
3D Options **Depth Line**

This places a black band in the depth you specify. When clicked the box to the right here appears. Just enter in a depth you want to display in black. This only works in the “Color Depths” mode. Set it to zero to turn it off.



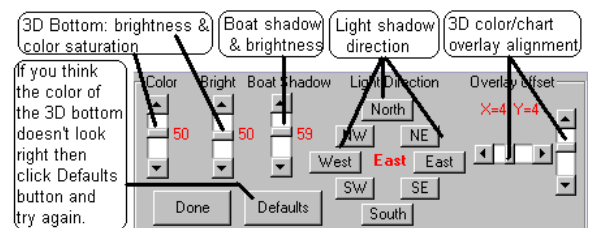
3D Options **Depth Line Alarm**

This only appears on the menu when the “Depth Line” option above is set to a value above zero. Then you just enter in a depth band. For example you set the depth line at 100Fa. Then select this option and enter 10. Then the alarm would go off when you got deeper than 105Fa or shallower than 95Fa. Enter in a zero (0) to turn off.



3D Options **Directional Lighting**

Directional lighting presenting 3D seabed with shadows giving a truer 3D effect. It simulates sunlight and the sunlight can come from different directions that you can select. The reason you would want to change the direction would be when the light was coming straight at you. Then there are too many shadows and the screen will begin to flicker. If the camera direction is to the south then you want the light coming from anywhere but from the south. Just click on *Options* in the 3D window then select *Directional Lighting* then select the direction you want it coming from. The 3D window will update each time you make a change. Overall 3D brightness and color saturation can be changed by clicking on *Brightness* in the *Directional Lighting* scroll bars. You will get the control shown to the right here. Brightness is from 1 to 100 percent of brightness where 100 is maximum brightness. Click the “Boat Shadow” Scroll bar to control how bright the 3D boat icon appears. If you see that the colors or chart doesn’t quite match the bottom then try clicking the X and Y offset scroll bars to nudge the overlay a little one way or the other. The 3D picture will update for any change you make. Click on *Done* when you are satisfied.

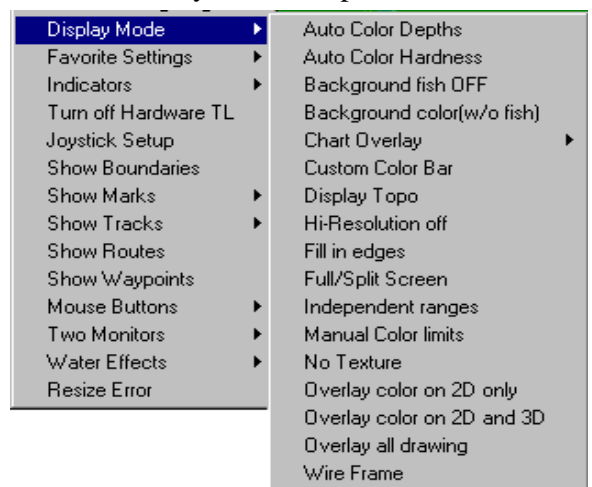


There are so many settings in 3D that you could end up getting poor looking 3D picture. In this case the “Defaults” button should be clicked if you ever think the 3D picture doesn’t look right. This will cause these settings in this window to go back to defaults. The 3D window will close and you can reopen it with the new settings and start over.

There are so many settings in 3D that you could end up getting poor looking 3D picture. In this case the “Defaults” button should be clicked if you ever think the 3D picture doesn’t look right. This will cause these settings in this window to go back to defaults. The 3D window will close and you can reopen it with the new settings and start over.

3D Options **Display Modes**

Switch from 3D color to 3D chart overlay modes. You can display the 3D SeaBed in many different basic modes; chart overlay & 3 color modes; Auto, Manual and Custom. Click to change and is in color mode when checked. Another option, “Overlay color on 2D” works in conjunction with the 3 color modes by transferring the colors made by the 3D on the 2D plotter side. Any charts that are turned on the plotter will be turned off while this function is activated. Independent operation makes ranges and chart overlay to work independent of what the plotter screen is set for.



3D Options **Display Modes Auto Color Depths**

In the **Auto-color mode (Depth)** the 3D bottom is displayed in colors that vary with depth. A color bar will appear in this mode with the top value as the minimum and the bottom of it labeled with the maximum depth for the current 3D color range view.

3D Options Display Modes **Auto Color Hardness** (requires bottom classification option)

If you have WindPlot's bottom classification option the bottom hardness is values are stored in the WindPlot tracks. So any track with hardness data that is set to displayed on the 3D screen can show on the 3D bottom in different colors as set up by the multi-color track color menu (F3). Then if the "**Auto-Color Hardness**" is checked, the 3D bottom is displayed in colors that vary with hardness. A color bar will appear in this mode with the top value as the minimum and the bottom of it labeled with the maximum hardness for the current 3D color range view. The program will fill in gaps between track points with color too.

3D Options Display Modes **Background fish OFF**

This turns off the background that looks like fish when the camera view is below the water line and the clouds and sun when above the water line when checked. If your computer is slow, it will help to turn this option off or you may prefer to have the background clear. When they are on, you will see the 4 compass directions embedded in with the fish in the background so that you know what direction the boat is heading. There is also a slider at the bottom of the screen to let you know what direction the 3D view is showing.

3D Options Display Modes **Background color (w/o fish)**

Without the background fish on as just described, there is just a blank background. You can change the color of this background though this option. Just click on *Back Ground Color* in the *Options/Display Modes* menu and choose a color from the color window that appears.

Options Display Modes **Chart Overlay**

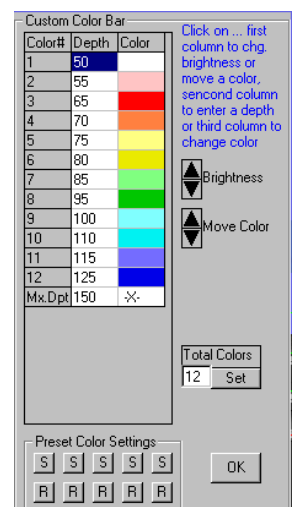
When in 3D independent mode (when you have a range box on the right of the 3D screen), this menu is used to choose what charts to overlay on the 3D bottom. This does not work unless your in 3D independent mode because then the chart that is overlaid is decided by the plotter program.



When not in independent mode, chart overlay mode takes a copy of exactly what is on the plotter screen and overlays it onto the 3D contour in the 3D window. Note: any new marks require you to refresh the plotter screen in order to see them. You can use the 3D scale to make the 3D cover a larger area. You can choose between 3 types of chart to overlay, P-Sea Software **Bathymetric** contours of the bottom, BSB or SoftChart navigational or P-Sea Vector charts.

Options Display Modes **Custom Color Bar**

In **Custom Color Bar** mode you get the window shown here to the right to build your own custom color bar. First decide how many colors you want and enter it in the **TOTAL COLORS** box and click the SET button. You can select up to 125 colors. Then choose the color scheme by clicking on each box under the **COLOR** column and pick a color from the Windows color editor. Then start at the top and click on the **Depth** column and enter the depths starting with a low number and get bigger as you work your way down the scale. Make sure to fill in all of the boxes with depths in this column including the very bottom one with no color, just an X in it.



When your satisfied, click the OK button to set the wheels in motion. The 3D screen will redraw at this point with the color scheme you selected. If you like it, go back and select the *Custom Color Bar* menu again and this time just click one of the S buttons at the bottom of the screen and note which one you clicked for later reference. This saves the current setup into a backup file. You can create up to 5 of these backups with different color schemes if you like. Just click the R button under the S button to recall any one of the reset settings you make.

You can change the brightness or order of any one of the colors in the color bar by first clicking on the first column that has the number of the color. Then use the up/down arrows on either the *Brightness* or *Move Color* controls.

3D Options Display Modes **Display Topo (Land)**

This option allows you to basically turn the 3D off where land is and thus you land appears flat, at the water line. The reason for doing this is because it enhances the 3D display of the bottom near the shore line.

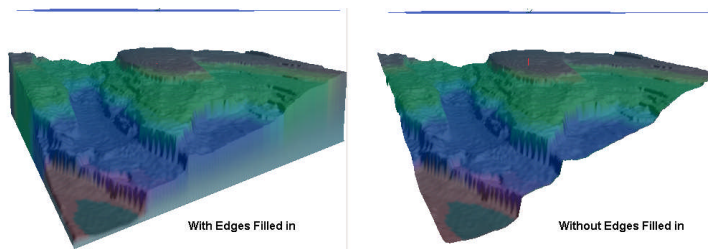
3D Options Display Modes **Hi-Resolution off**

High resolution files are used when the plotter range is about 5 miles or less. High resolution files are not displayed when this item is checked. Then only the standard and world 3D files will work.

Hi-Res 3D mode increases the 3D resolution by a factor of six. You can not use 3D Hi-Res mode until you have either loaded the HD 3D DVD or generated the H-Res files using the program. Hi-res 3D files can be generated from the standard resolution 3D files you should already have. See the last section “Files” of this 3D guide in for details on how to make 3D high resolution files.

3D Options Display Modes **Filling in Edges**

This option fills the edges of the 3D chart as shown to the right here. The picture on the right shows when this option is checked.



3D Options Display Modes **Full/Split Screen**

Toggles between full-screen 3D or split with the regular 2D plotter on the left.

3D Options Display Modes **Independent Ranges**

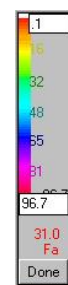
This mode is a little more than just independent ranges. When checked, the 3D screen operates totally independent of the plotter screen. You can change to different charts, ranges and control how marks and tracks are displayed without changing the plotter side. It only has works if in split screen mode where 3D is on one side and the potter screen is on the other.

3D Options Display Modes **Manual Color Limits**

If you select the “Manual Color Limits” you will see two new white boxes in the normal color bar. All you just need to do here is enter the upper and lower limits of your desired depths into the color bar’s boxes and click on “DONE” when done.

3D Options Display Modes **No Texture**

Turns off texture to present a smoother seabed.



3D Options Display Modes **Overlay color on 2D only.**

Check this menu to have the 3D depth color overlaid on the chart on the plotter side. This will turn 3D window to a tiny window and overlay the 3D color on the 2D plotter screen.

3D Options Display Modes **Overlay color on 2D and 3D**

Check this menu to have the 3D depth color overlaid on the chart on the plotter side. This will only work if 3D is setup to display color depths and it must be in non-independent mode to work.

3D Options Display Modes **Overlay all drawing**

There are two way to display marks and tracks when using 3D. 3D can create real time line drawings for marks and tracks or draw them one time and overlay the picture onto the 3D bottom.. In the line-drawing 3D mode the marks and tracks are completely redrawn for each 3D frame. Therefore, the computer will tend to slow down as more and more tracks and marks are to be displayed.

The overlay display of marks and tracks draws them all one time and then overlays they onto the 3D bottom once. The advantages of this is that it also draws mark lines, waypoints, routes and boundaries as well. It does not slow down the computer other than the one time it overlays onto the 3D bottom. You will see the widths of lines vary as the 3D ranges vary however.

The Options menu has further control of this overlay function when you select “Marks” or “Tracks”. Each of these menu items can turn the overlay and line drawing on or off.

3D Options Display Modes **Wire Frame**

Wire frame is used to refer to the matrix that is created for the shaping of the 3D picture before all of the other colors and textures are applied to the scene. This is the basic building blocks of 3D much like the framing of the a house before the siding and other stuff is applied to it. We provided this mode just for those who are curious how 3D is made, you normally should not leave it in this mode.

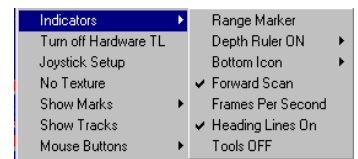
3D Options **Favorite Settings**

Click on *Save Current Settings* to save your current 3D in a backup file. Then click on *Recall Settings* when you want to bring them back. Click on *Recall Defaults* when you just can't get the program back the way it was as this should restore all values back to original installation values.



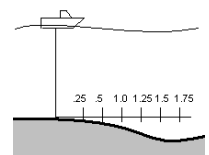
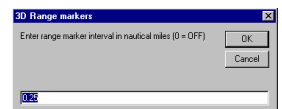
3D Options **Indicators**

The following is a list from the Indicators sub menu that contains many different functions that will aid in measuring the depth, range and headings.



3D Options Indicators **Range Marker**

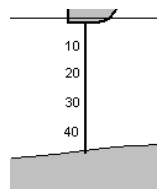
There is a line that extends out from the boats position on the bottom that indicates the direction of the vessel. You can place range markers at any interval you choose. Just click on the 3D *Options* menu then select *Range Markers* and the window shown to the right here will appear. Just enter a spacing range in Nautical Miles you want to appear on the line. Quarter mile (.25) is show here. Enter a zero (0) to turn the markers off. You must turn the water line off to see the range marker above water the line.



3D Options Indicators **Depth Ruler On**

Draws a line from boat (or the cursor when the cursor is turned on) to bottom with depth scales printed. Numbers mark the depth at even intervals either automatically or you can select the spacing manually. The line disappears when the submersible (camera) is above water line unless the water is turned off.

In the *Auto* mode the depth markers spacing depends on the depth and zoom you are at. Select *Manual* and enter a spacing you want. Select *OFF* to have no ruler on at all.



3D Options Indicators **Bottom Icon**

You can have the bottom where the boat is directly over show a round pattern that will indicate a certain transducer beam angle to give you a better idea of what the sounder is looking at. You can also have just a fixed size entered that stays the same width no matter what depth.

the program to check if it is install as it will give you a warning that it is not installed when you try to turn it on. The at that point you know you need to install it in Windows as stated above.

First Time Joystick Activation and Programming

You must activate the joystick by putting an X in the *Joystick ON* check box before you can start programming. Figure out what controls you have on your joystick or game pad by playing with it's controls while watching the Joystick setup window. To program any one of the controls, simply click the drop-down box button located next to the control and select what you want it do to. You can go back into this setup and change any one of them at any time while 3D is running. The computer will remember these settings the next time you bring up the 3D screen. Be sure not to give two controls the same function and we suggest you label the buttons with the function they provide. There is a default setup button that will start with a recommended setup, just click the "*Sidewinder Defaults*" button. The Sidewinder Defaults is good for many types of controllers. When programming for marks, you can also click on the color located to the left of the selected word "*Mark*" to change the color and shape of the mark for that buttons programming.

Note that the 3D Joystick settings supersedes the Joystick Setup for 2D WindPlot outlined above.

Joystick Sensitivity

The Axis and slider controls may work too fast or too slow for your 3D program. You can change the sensitivity of these controls by clicking the "*Joystick Sensitivity*" button. Click this button and enter a percent of control, that is 100 is the fastest and 1 would be the slowest response for the controls.

No Mouse Control

If you use a joystick to pan and tilt the 3D camera view then it is recommended to deactivate the mouse on the 3D window. To do this you just put an X in the *Mouse OFF* check box of the Joystick setup window. When deactivated the mouse will only work on the 2D plotter screen.

3D Options Show Boundaries

Click this menu item to check or uncheck it. When it is checked, the fishing boundaries that are setup to display using the 2D plotter screen will appear on the bottom of the 3D window.

3D Options Show Marks

The marks and hangs can be displayed in the 3D windows many different ways. When the following itmes are checked then...

Overlay: overlays an image of the marks on the plotter on the 3D bottom. Caution, this uses a lot of computer resources, do not use this feature if you have a lot of marks in one location.

Show Shapes: This places a picture of the mark shape on 3D.

Caution: Do not use this feature if you have a large amount of marks in any one area as it takes up a lot of computer resources and could dramatically slow the computer down.

Show as intersecting lines: Lines are drawn at the marks location.

Show w/Depths: The depth at the marks location is displayed next to the mark.

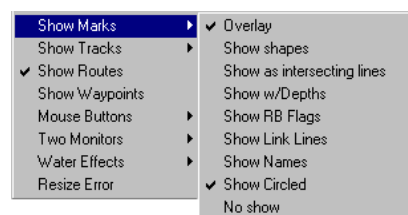
Show RB flag: The range and bearing to the mark is displayed next to the mark.

Show Link Lines: The lines that connect to linked marks are displayed.

Show Names: The printing next to marks that have on screen printing setup will be displayed.

Show Circled: The marks will have a circle around them when this is checked. You are asked the size you want to make the circle.

No show: Turns off all marks on 3D window.



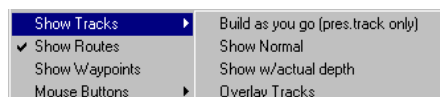
Note: Too many marks can slow the 3D down, try tuning unnecessary marks off using Marks Search and Edit.

BEWARE the circles, line and depths do not always mean there is a mark there. They may appear even when the mark is behind the hill or valley.

When marks are overlaid on the bottom picture much like the raster chart is overlaid. Just check the “*Overlay*” option in the mark menu. The marks will appear at different sizes as you change 3D range but unlike the 3D mark draw, the overlay only has to be drawn once when the 3D screen initializes. This mode is less likely to slow down the computer.

3D Options Show Tracks

There are four methods of displaying tracks in this sub-menu, “*Build as you go*”, “*Show Normal*”, “*Show w/Actual Depth*” and “*Overlay Tracks*”. The “*Build as you go*” will lift or drop the bottom of the area located directly under the vessel. It will only do this for the current track file and will be lost as soon as you start a new track. You will need bottom builder option to keep the bottom updated bottom. The “*Show Tracks*” actually draws track lines over the 3D bottom and is redrawn many times a second. The “*Show w/Actual Depth*” will use the depth data imbedded in the track file and display the height of the track that way. The only trouble with this is the track will not be visible where it goes deeper than the 3D bottom is. When you select either of these two modes you will be asked to enter a limit of how many will show at any one time. We suggest trying 10 to start with. The reason for this is that if the computer is at all slow, too many tracks may make the program appear to lock up. So, try 10 or 100 if you think your computer is fast and move to an area with the most tracks that will show at once and check out how it responds. But do not wait to check it out or you may be unhappy when you are fishing an area and it turns out to be too slow.



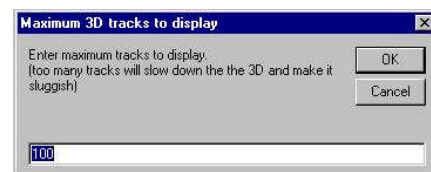
The “*Overlay Tracks*” option draws the tracks on the 3D bottom picture before it is placed on the 3D bottom. These tracks are not as distinct as the “*Show Normal*” mode but since they are only drawn once (unless you change range or go out of the 3D area), they do not take any processor time and so will not become sluggish as you add more and more tracks.

3D Options Show Tracks Build as you go (pres. track only)

New menu to 7.24 version allows you to see the bottom rebuild itself as you track along in real time. This requires a depth input to the WindPlot program from a depth sounder. You will know if you have depth from a sounder when you see the depth readout under the speed and heading in the upper-right of the 2D plotter screen has (DS) next to it meaning depth sounder. You will get a (3D) when the depth is coming from the 3D screen. You must also have set the TRACK TYPE to “*Depth*” on the 2D plotter screen. It will only perform this to the present track and is lost once you start a new track. You will need the P-Sea Bottom Builder option to keep the changes permanent. On slow computers this may cause some lag time to the vessels position on the 3D side.

3D Options Show Tracks Show Normal

This selects how many tracks to display at one time in the 3D window. If the screen is still too slow then go back and lower the number of tracks. You do not have control of what tracks are not displayed so if you have a lot of tracks showing on the plotter screen and find the 3D sluggish then try instead to reduce the number of tracks or use the “Track Search and Edit” window in the “Track” menu and turn off or erase some of the tracks in the area. Enter a value of 0 to turn all tracks off. Please note that unlike the 2D plotter side, 3D tracks can have only one size of width.



3D Options Show Tracks **Overlay**

Click to check this menu item to have tracks drawn on the 3D picture before it is applied to the 3D screen. Tracks do not appear as sharp as the “*Show Normal*” mode but they do not make the 3D screen sluggish when you move the 3D screen. You will also notice the tracks to become fat or discolored, depending on the current 3D range and other display settings.

3D Options **Show Routes**

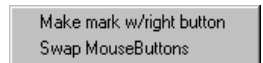
Click to check this menu item to have the routes that was setup to display on the 2D screen appear on the bottom of the 2D screen.

3D Options **Show Waypoints**

Click to check this menu item to have the routes that was setup to display on the 2D screen appear on the bottom of the 2D screen.

3D Options **Mouse Buttons**

Switches right and left mouse button camera pan, tilt and zooming control. You also have the option of using the right button to make a mark.

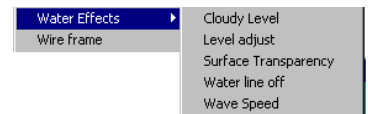


3D Options **Two Monitors**

Windows allows you to connect two monitors at the same time using a dual-video board. When set up right, it will look like one long computer screen when the monitors are put side by side. When this is set up you can click on either *Span Right* or *Span Left* to have the program open the plotter in screen and the 3D window in the other. If span right does not produce both pictures, shut down the program and try the other Span.

3D Options **Water Effects** sub menu

Controls water clarity, level, surface transparency, wave speed or turns it off completely.



Cloudy Level - This is a fog like effect that adds a “looking through water effect; Click it and enter a value between .1 and 10 (.1 is default)

Level Adjust - Water SURFACE level, adjust to make ports and harbor water levels to look right. Enter a “L” here to have water kept closer to seabed or “N” to go back to normal water level.

Surface Transparency - Choose this and enter a value between 0 and 100 where 100 would be solid, 0 is fully transparent and 75 is the default.

Water line off - Simply turns water line completely off. When off, the previous settings have no effect. Turn water line off to see depth and range ruler when above water line.

Wave Speed - The program will simulate a wave motion. This controls how fast the wave moves back and fourth. Enter a speed value between 1 and 100 where 1 is the slowest.

3D Options **Resize Error**

Click this so it is checked if your computer crashes when the 3D window is resized by dragging one of the edges or when going into full screen 3d mode.

3D Depth Files Menu sub menu

3D Chart Correction – Calibrate 3D bottom to Lat/Long. Position

Depth Correction - Correct depth using Tide, GPS altitude or/and manually.

Install New 3D Files - Loads 3D depth files from P-Sea Software CD Library.

Install World 3D Files - Loads the World 3D depth files from P-Sea Software installation CD.

Make High Res. Files - Creates High Resolution files from the Standard 3D files.

Make Low Res. Files - Creates Low Resolution files from the Standard 3D

Show 3D file Boundaries - Outlines each 3D file on 2D plotter screen.

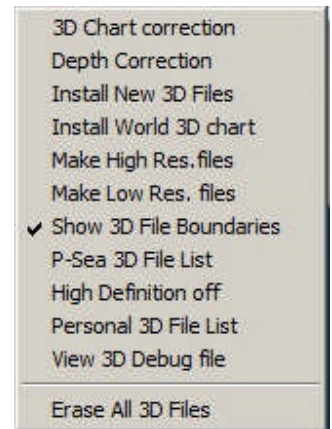
P-Sea 3D File List - List all files in Lat/Long, jump to or delete a file.

High Definition Off – Stops displaying higher definition data when checked.

Personal 3D File List - Lists all personal files created.

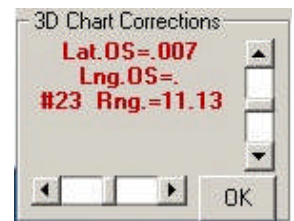
View 3D Debug file – Displays 3D debug text file in notebook.

Erase all 3D files - Erases all 3D files from the hard drive.



Depth Files Menu 3D Chart Correction.

If you think the 3D chart is not in the right position, you can use this menu item to correct it. It is simple, position the 3D screen so you have a good view of the 3D bottom you want to move, something like a pinnacle or dip where it is marked good on the NOAA or bathy chart. Then click on the "*Detph Files Menu*" then select "*3D Chart Correction*" and the 3D chart adjust box will appear like the one shown here on the right. Just click on the scroll bars, the bottom scroll bar moves the chart EAST or WEST and the vertical scroll bar moves the chart NORTH or SOUTH.



After clicking either scroll bar a "*SAVE*" button will appear. You have the option to save this correction, just click the "*Save*" button and this location and calibration will be saved. If your within a mile of the last calibration, you will be asked if you want to just update the current calibration, in which you would just click "*Yes*" if that is what you wanted to do.

To **DELETE** a calibration just **RIGHT CLICK** the "*OK*" button.

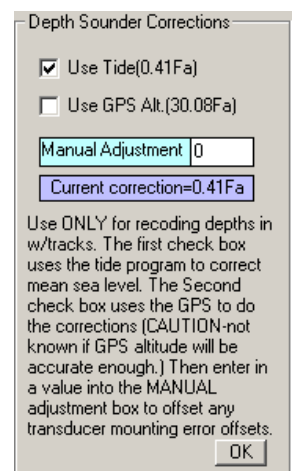
Depth Files Menu Depth Correction

Correct depth using Tide, GPS altitude or/and manually. This works in only when generating your own 3D P-SeaBed. It applies the calculated correction to the depth sounders' input before storing it to the personal 3D database track file. Then the track files are used to generate the file for 3D presentation. It does not apply any compensation to any files that are already made.

The first check box, "**Use Tide**" will automatically apply the present tide calculations to compensate for any tidal differences.

The next check box, "**Use GPS Alt.**" applies a GPS altitude offset. **DO NOT** use this unless you are sure your GPS altitude is stable enough to do so. Usually this is not the case.

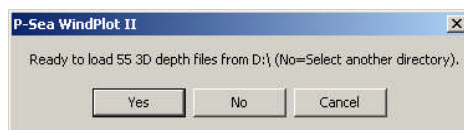
Enter in a "**Manual Adjustment**" to compensate for transducer placement or other offsets. Just enter in the value you believe it is and check with some reference point if available.



3D Depth Files **Install New 3D Files**

Loads 3D depth files from P-Sea Software CD library. Just place the P-SeaBed region CD into the CD drive and select this menu item. Place the 3D chart file CD or DVD in the DVD drive before selecting this menu item.

Next a box will appear letting you know how many files it has found to load as shown to the right here. You can click on *NO* if you want to save the files on a different drive or directory or click on *Yes* to continue to load all files.



3D Depth Files **Install World 3D Files**

Loads 3D world files from the P-Sea 3D World DVD. Just place the World DVD into the DVD drive and select this menu item. An instruction box will appear like the one to the above telling you to place the 3D World DVD in, just click on “OK”.

3D Depth Files **Make High Res. Charts**

If your 3D charts came on a DVD then you do not want to perform the following operation as it had HR charts.

- 1) This is done by first updating your 3D program to P-Sea WindPlot II 3D version 7.13 Beta E so the Hi-Res mode is available.
- 2) Then start the 3D program and click on “*Depth Files*” in the 3D menu bar. Select “*Make Hi-Res. Files*” from the “*Depth Files*” menu.
- 3) If this is the first time then you will be asked if you want to use “*Hi-Res. Mode*” or not. Choose “*Yes*” if you want to create your Hi-Res 3D files with an estimated time for completion. Usually this will be around 50 hours or so and require 5 to 8 gigabytes of disk space.

You can stop the file creator at any time by clicking on the “*STOP*” button. The program will skip over the files it has already created the next time you start it. The program also checks disk space for you and will warn you if you do not have enough. It is advisable NOT to do this at sea as the hard drive will be working each time a file is saved and can possibly cause a hard drive to fail.

Once all of your files are made the use of the 3D Hi-Res mode is automatic as long as it is turned on. The mode is turned on and off by checking or un-checking the “*Hi-Resolution off*” menu item in the 3D “*Options*” > “*Display Mode*” menu. The Hi-Res charts only appear on ranges less than 5 mile plotter range or so. The message “*Hi-Res*” will appear in the title bar of the 3D window when these charts are in use.

For those with the P-SeaBed Builder option, you just need to check the “*Use High Resolution*” check box that appears under the “*Display Personal Depths*” check box when it is checked. The rest is basically the same as you do for making standard 3D personal files.

3D Depth Files **Show 3D file Boundaries**

Outlines each 3D file when plotter ranged past 500 miles. Just point and click to put the cursor where you want to zoom to and range back down.

3D Depth Files **High Definition Off**

Click to check this menu item. When checked it will not display the High Definition chart files. If there is a regular or high resolution file there then it will be displayed instead. Use this to compare HD to HR files.

3D Depth Files **Personal and P-Sea 3D files**

Displays all 3D files. See 3D File list described earlier for details.

Changing 3D window size

You can change the size of plotter and 3D windows in the 3D Split mode. Just place the mouse arrow on the left border of the 3D window (has to be the 3D window and not the plotter border) then drag it to the position you want. If you have the correct border you should see the plotter resize accordingly. The windows size will be remembered for the next time you run the 3D program.

Using the P-SeaBottom Builder Menu (Optional)

3D bottom is built in 1 degree blocks holding 1.44 million depths which are further broken down for lower ranges of 36 more blocks (Hi-Res.) each with another 1.44 million depths. When rebuilding the bottom, new /updated depth data to make the 3D block needs to be gathered. The depth data for the most part will come from tracks files that was setup for recording the depth within the track file. When you first open the P-SeaBottom Builder it looks for tracks in the area and lists them. You can also use charts and enter the chart spot depths to update 3D but it should be much more accurate to use the depth data that you accumulate from tracking. There will be places where no depth is (holes) and the computer will either use interpolation and use a best guess method or pull data from existing 3D files P-Sea Software provides.

Setup for automatic recording of depth in track files

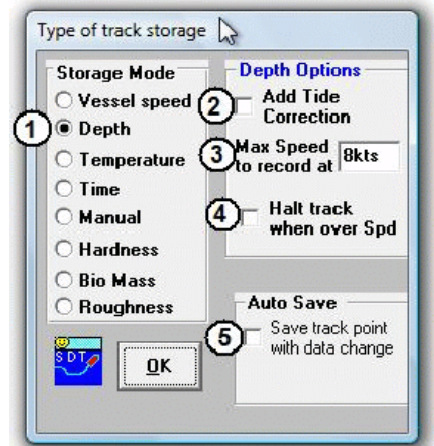
The 3D depth data we need to rebuild the 3D bottom can come from an on-board depth sounder that has the following NMEA 0183 data sentences: DBT (Depth Below Transducer or DBS (Depth Below Surface). You connect the sounder via a separate serial COM port or a data combiner. When depth data is received by P-Sea WindPlot the depth will be displayed with (DS) printed next to it just under WindPlot's vessel speed and heading readout located in the upper-right corner of the plotter screen. Please note that if you have the 3D screen open, the depth reading will also appear at this position but it will show (3D) instead of (DS) next to it. In this case this means that you do not have depth from the sounder and therefore it will not work for rebuilding the bottom.

Once depth data is available to P-Sea WindPlot we need some method to store it. Since P-Sea WindPlot creates tracks pretty much automatically it can use them to do the work. But before doing so it will help to understand how tracks are made. Tracks normally are used to follow your path over again. They are created the path by storing the vessels position (in Latitude and Longitude) at pre-determined intervals (or duration). To then re-display the tracks, the computer just draws a line connecting the saved points (dots) together.

Besides saving Lat/Long position, tracks can also be used to store 3 other types of data at the same time. By default, vessel speed is the only data this is saved. You must tell P-Sea WindPlot that you want to save the depth data in with the track file. To do this, click on "Tracks" from the WindPlot's menu bar and select "Current" then select "Track Type". The "Type of track storage" window should appear as shown here on the right. Click on "Depth" to select it as the data you want to save. If it is grayed out and doesn't change then that means you do not have the correct depth data available. Recheck your serial port connections and look to see that either the "DBS" or "DBT" is flashing in the "Adjustments">"Chng.COM port/Time" window. You should also make sure that "Depth" is set as the "Main" track data file. To do this, click on "Tracks" in the menu bar then on "Current". Now select "Color". Click the "Multi-Color" button if you get the "Present Track Color" menu. Just make sure that the dot is in front of "Main" in the "Track Color Bar" window by clicking on it if it isn't selected. Click the "Mono" color button if you want your tracks to be a solid color and exit. Then make sure again that the track mode is depth after you close these windows.

Setting Track to Store Depth Data

Setting up tracks so that they save depth data is fairly simple. First click on P-Sea WindPlot's menu "Tracks" and select "Current" then select "Track Type". The "Type of Track Storage" will appear as shown to the right here.



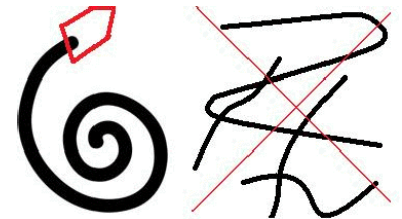
Refer to the #() on the "Type of track storage" window shown here above.

- #(1) Click this dot to select "Depth". If you can't select it then you do not have depth coming from your sounder to WindPlot.
- #(2) Check this box to have tide corrections added if there is a local tide station.
- #(3) If your depth sounder loses bottom at higher speeds then enter a value in this box. Enter a zero value to turn this feature off.
- #(4) Check this box to automatically stop tracking when vessel's speed over maximum.
- #(5) Check this to have data saved very time depth changes by a certain amount.

After you have the track storage set to store depth then you will need to create some tracks before you can rebuild the bottom. So go out to the grounds and circle or zig-zag over the area you want to see in 3D. Then you can build or rebuild the sea bottom.

Suggested pattern for creating a track if you want to see detailed rock formations.

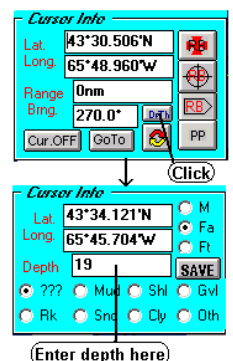
Tracks are used to store the depth data that is used to build a 3D bottom. We have a few suggestions for first-time users that we found to work the best for creating 3D. A single track made all at once the same day of an area is going to provide the truest bottom instead of many tracks crossing each other that were made over several days, weeks or months.. We believe this is because the sea-height can change from one day to the next due to tides, currents and even water temperature. We also suggest using tracks where the sea conditions are the best. Large swells can make it difficult for the program to filter the swells out making the bottom lumpier that it really is. Start a track by making a spiral pattern, starting at the center and gradually making larger circles is better than chris-cross or zig-zag pattern. We believe this is because the transducers are never really pointing straight down. Even if it is straight down, the vessel may be lipping a little one way or the other. If the beam favors one side or the other then the zig-zag pattern the beams may cross causing no data going one direction. Use time duration of 2 seconds and keep the circles close to each other, about 50 to 100 feet spacing between spiral paths should be ok, it doesn't have to be perfect.



Creating "Cursor Depths"

Charts contain some depth information in the form of depth contours and individual soundings. You can create a cursor depth file that can be used by P-SeaBed Builder.

- 1) Turn on the cursor (press F2 on the keyboard) then place it over a fathom curve or spot sounding from a chart.
- 2) Click the "Dpth" button and the cursor box will change as show here on the right. A message box will appear asking if you are ready? You can click on "Yes" and it will use the current range but if you click on "No" it will redraw the screen at a 1 mile range WITH a grid. This point spacing grid guide that is the spacing needed for medium 3D depth points. However there are 6 more between the grid lines that are used for the high-resolution mode.
- 3) Enter in the value of the spot sounding or fathom curve in the "Depth" white text box.
- 4) Set the depth unit (M=meter, Fa=Fathom and Ft=feet) by clicking on them in the Cursor Info box.
- 5) Then just click or drag the cursor by holding down the left mouse button and move the mouse along a fathom line. Keep sounding measurements fairly close together. **22**



If you make a mistake either by putting the wrong value in for depth or just too many points down you have some editing options. When you are making "Cursor Depths" a edit guide will appear in the upper-left of the plotter screen as shown here on the right. These are keyboard short cuts for editing your Cursor Depths.

- E**=Erase last point
- P**=Erase point at cursor
- G**=Erase last # of points
- L**=Erase all last same depth#
- M**=Move Points
- C**=Change group depth at cursor

Press E If the last point you made was wrong then press E on the keyboard to erase it.

Press P To erase a point you made at the cursor, place the cursor (use the right mouse button to move it without making a point) on point you want to delete and click the left mouse button.

Press G To erase the last group of points you made. You will be prompted how many points to delete.

Press L To delete a number of points last made with the same depth.

Press M To move a point, press M and use the right mouse button to pan to the point to move. Then left-click on the point and move the cursor to the new location by clicking the right-mouse button and then left-click to set the point.

Press C To change a group of points with the same depth (as when you follow a depth line). Just right-click to place the cursor on the line then left-click to change them.

When finished, click the Save button. Use the left mouse button to pan to different areas. The files are saved in files 1x1 degree grids outlined in red/keep within these lines. To start another 1x1 degree area, save and restart with the cursor in that area. For example, take your current Latitude and add 1 degree (in the cursor info box) if you want to do the next section up or subtract 1 degree from the Longitude if you want to do a section that is East of your present position. You will see any previously made cursor data drawn red dots and depths printed.

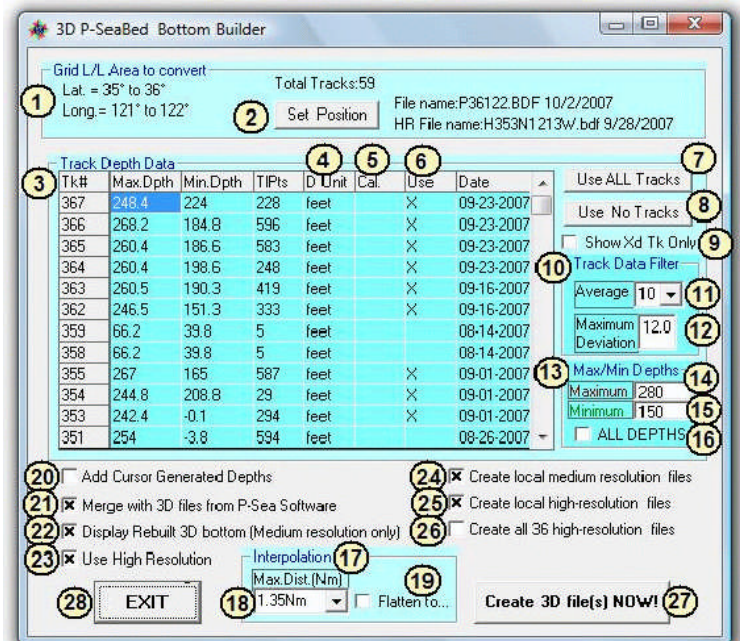
Rebuilding the bottom

It takes time to generate 3D bottom so the program will not do any tracking while the bottom is generated. For that reason we suggest to rebuild only when at dock. The hard drive will be working hard to so another reason for doing it while in port is to reduce the chance of damaging the hard drive.

This is an option that requires an activation code to start just like you did to start the 3D. Just contact your dealer to order. P-Sea Bottom Builder re-builds 3D files from track and mark files. When selected, a *Personal Bottom Builder* window will appear as shown next. It shows the Lat/Long area you will be covering with the file you create along with the total tracks it has found in the area. It allows you to set the point size or multiplier used to fill in between where data is missing. It uses track depth data to (re)build the bottom so it list a total tracks that have depth data showing the maximum and minimum depth, total points, depth units for each track plus some other options like "Use All Tracks" for using all tracks, or "Use No Track" for using no tracks depth data.

The P-SeaBottom Builder Window

There has been a number of improvements in the P-SeaBottom Builder window that was designed to make the rebuilding of the 3D easier to understand. Starting with the layout is more straight forward with no hidden items as before, the tracks you choose to build and the rest of the settings are saved in separate files so that the next time you go to rebuild the bottom you do not have to re-select the tracks over again. New tracks are automatically added to the list to use, the file names are displayed now, you can set a maximum and minimum depths to use, the date of the track file has been added, you have the choice to display only the tracks that were "USED" to build the bottom displayed on the 3D window, the "Point Method" has been removed



as it didn't produce a very good 3D bottom and now you should be able to rebuild the bottom while underway. Then you can tell it to display the personal data files, merge the personal data files you create with the ones provided with the 3D program. And lastly, you can create depths using the pre-recorded cursor generated depths. All of this will be described later in this instructional.

P-SeaBottom Builder Window Layout

- (1) This area of the window shows the files that can be generated according to the current Latitude and Longitude position which can be changed by using item (2).
- (2) Click to change to a different area.
- (3) Usable track file list. Only the tracks with depth data and set to show are listed.
- (4) Click here to change the depth file unit from feet, fathoms or meters. (Does not alter #'s)
- (5) Click here to add an offset to one of the track depth data files.
- (6) Click here to place or remove an "X" from the column. When X'ed, the track will be used to help rebuild the 3D data.
- (7) Click this button "*Use ALL Tracks*" to place an "X" in all tracks "Use" column.
- (8) Click this button "*Use NO Tracks*" to remove all "X" in all tracks "Use" column.
- (9) Check this to limit the track 3D display to only those that have "X's" in the USE column.
- (10) Track data filter area has two types of filters; Click the drop down arrow at (11) to change the track point averaging. Adjust the amount of averaging so that the effect of the swell is reduced without losing any bottom resolution. You will need to experiment with this value, you will need more averaging at slower speeds and shorter track intervals., 10 is a good starting point. Item #(12) will reject any depths before and after a sudden change in depth. If you are not inclined to have sudden changes in depths then put a small number in item #(12). The number represents the number of feet or fathoms of change that can be allowed.
- (13) Maximum and Minimum allowable depths. If item #(16) is not checked, then all depths that are more than #(14) or less than #(15) will be rejected when creating 3D bottom. It is a real good idea to use this but be sure to enter the correct limits. Turn the 3D boundary lines (in the 3D Depth Files menu) ON and zoom out to 100 miles to get an idea of the depths you will be working with. Or zoom out to 12 miles if only working with the Hi-Resolution files.
- (17) Interpolation. A funny sounding word that basically means make up something and that is what it does in between the tracks. For example you make a 1 mile track loop. The program can look across the loop to the other side and see what the value of the depth is there. Then it fills in the missing data as it steps though all values between. So if one side is 100 ft and the other is 10 then a gradual slope is made from one side to the other. How far it will go look before it gives up is up to item #(18). However, the larger this number is the longer it will take to create the 3D bottom. Set this value to match the gap between track files. If you do not have any tracks that are close to each other then you can use item #(19) to create a side walk type of path. Usually you won't want to use this if you are merging your tracks with other data but it is nice for a long straight track run.
- (20) Creating Cursor depths was mentioned at the beginning of this section. If you have any cursor depths then you must check this to have them added to you 3D creation.
- (21) As mention many times, you can merge the P-Sea Software 3D data with your track or mark data when creating 3D bottom. Check this box to make the merge happen.
- (22) When this box is not checked, your P-SeaBottom Builder created 3D depths will not appear. Only the P-Sea Data files will appear.
- (23) Un-check this box if you only want to deal with medium resolution files.
- (24) & (25) selects high and or low resolution files should be created when checked. Usually you will want to do both.
- (26) There are a total of 36 high-resolution files per one medium resolution file. If (25) is checked and you check this then all 36 files will be created. This takes some time to do depending on the speed of the computer. It is usually a good idea to do this at port.

Setting Position

The P-Sea SeaBed Builder will regenerate the immediate area only so before getting started rebuilding the bottom, you need to position the 3D in the area where you want to start. In the top of the Bottom Builder box you will see a button labeled *Set Position*. This is used to call up the Dead Reckoning window. In this window you can change the location of the vessel so that the bottom will be built in that area. You only need to be within the general area. In order to do this, you may need to turn the GPS or loran off that is feeding position data to the plotter.

Filling in the gaps

There is a total of 1.44 million points in each personal depth file you create making it difficult for you to cover all of the points in the file. This program will allow you make it look like you are covering more area than you actually are. This is done by filling in between points (depth readings) that you make by interpolation method. It determines the depths that are between data points using interpolation from the depth between the two points. For example if one depth is 3 feet and the other is at 5 then the one in-between would be 4 feet. The range you set is how far away it looks for a reference point from any one sounding. If there isn't a point close enough the depth is not filled. The default is 5 miles.

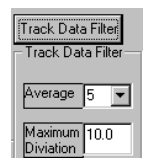
Using Track Depth files

All tracks with depth data are listed when you call the P-SeaBed Builder. Only the tracks with depth are used data for building your 3D files. If you wish **not** to use a certain track for any reason, then you need to remove the X in the "USE" column by clicking on it. Do not trust tracks you get from other sources as valid depth data until you have checked each individually your self.

Tk#	Max.Dpth	Min.Dpth	TlPts	D Unit	Cal.	Use
684	32.2	4.7	288	Fathom		[X]

This can be done by going to the area where the tracks are and place the cursor along the tracks. You will get a depth value in the description that pops up in the lower-middle of the plotter screen. Use the charts to verify that the data is close. Figure the difference from the chart and use the *CAL* box when building the depth file to offset the track to match the chart. Also change the *Depth Unit* so it is correct by clicking on that column and change to either Meters, Feet or Fathoms.

The "*Track Data Filter*" button allows you to filter out differences in track data due to swells and bad data where the bottom may have been lost from wakes of other boats. Click the "*Track Data Filter*" button to make the Filter window appear and disappear. Use the "*AVERAGE*" to compensate for swells. The value will depend greatly on the plotting interval that was used when making the tracks. Short intervals will want a higher average where long intervals will want lower numbers. We suggest to start with 3 to 5 if your not sure and see how it looks. You will see more bumps on the bottom if you do not have enough averaging. The "*MAXIMUM DEVIATION*" is in METERS. The SeaBed Builder will discard any track point were the difference in depth between two points is greater than the value in this box. So if you enter 10 for example, when the SeaBed Builder looks at say point 12 with a depth of 100 meters and if point 11 is 99 meters and point 13 is 98 meters then point 12 will be rejected because the difference is 11 and 12 both of which are higher than 10 that is in the *Max.Dev.* Box. . So the value of this will depend on the bottom where the tracks are. Jagged bottoms will want a higher number so as not to reject the peaks and drop off's and a smooth bottom can be a small value. Suggest using 10 for smooth and 100 for a jagged bottom to start with.



Creating Personal 3D depth files

- 1) First thing is to maneuver the vessel within the one degree Lat/Long area of the tracks to convert. Use the '*Dead Reckoning*' (Shift-F4) to enter the area manually, just make sure the GPS is off.
- 2) Now call the 3D P-SeaBed Bottom Builder, click on "*Options*" then select "*P-SeaBed Builder*" and the "*Personal Bottom Builder*" window will appear. The total tracks that have depth data will list in the list showing the maximum and minimum depth, total points, depth units for each track. The program will reject any depth that is zero so if you see zero points in the "*TlPts*" (total points) column then this is not a valid depth file.

3) If there is already data available from P-Sea Software that you are updating then check the “*MERGE OTHER DATA IF AVAILABLE.*”

4) If you have make any depths using the plotters cursor box then check the “*USE CURSOR GENERATED DEPTHS.*”

5) Select the tracks you want to include in the build by clicking on the *USE* column to mark it with an *X* as shown here on the right.

6) Make sure the “*D Unit*” column is correct depth unit for each track that you are including.

7) Make sure “*Use Personal Depths*” checkbox is checked. If not then check it. When doing so you will notice another checkbox appear just below it labeled “*Use High Resolution*”. If you check this then only the one high-resolution file locate were the vessel is currently at will be generated. **If it is unchecked**, then the program will make the larger 1 degree block file and ask if you want **all of the 36 high-res. file made at the same time as well.**

8) Click the *CREATE 3D FILE* button and wait for the program to build the bottom. You should see a red box indicating what the program is currently doing. The 3D screen should redraw after all done with the newly generated 3D bottom. If all you see is flat bottom you many have to pan to where the tracks and depths are to see any 3D.

List of tracks with depth data in this area						
Tk.#	Max.Dpth	Min.Dpth	TIPts	D Unit	Cal.	Use
684	32.2	4.7	288	Fathom		X

Click to change depth unit Enter any calibration Only tracks with a X in this column will be used. Click to set.

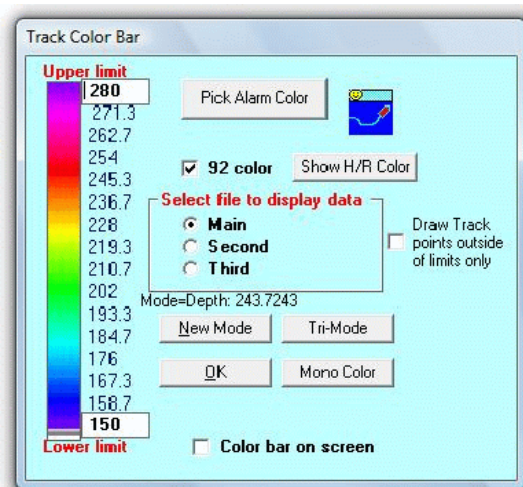
The “*Use ALL*” button puts an *X* in all *Use* columns automatically. The *Use None* clears all *X*’s from the “*USE*” column. The “*Display Personal Depths*” check box will cause the program to display only the 3D files you create. The “*Merge other data if available*” check box will add the regional 3D data from P-Sea Software Co. with the 3D personal data. The personal data will overwrite the P-Sea Software data allowing you to modify the P-Sea Software 3D data files.

Note: the “*Display Personal Depths*” check box must be UNCHECKED if you want to display P-Sea Software 3D data files.

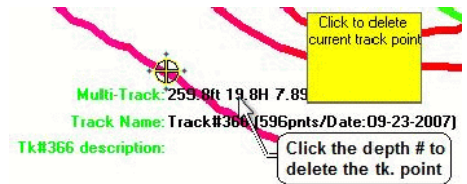
Cleaning up Track files

If you find that your depth sounder will loose the bottom occasionally from crossing over your wake or for what ever reason you will need to clean up the track files before you re-build the 3D bottom. Otherwise you will see holes or peaks on the 3D that are not really there. If you are not sure then go ahead and use the bottom builder to rebuild the sea bottom. It will then be obvious when you view the 3D where the errors are as you will see peaks or holes in the sea bottom. You can use the cursor to pan to these areas, set the present position (with GPS off) by clicking the “*PP*” button on the cursor info box.

To clean up these errors you must first set up the track display so that you can see them in the areas that you are rebuilding the bottom (if you have not already done so). First set up your track to display in multi-color mode (press F3) and set the color limits to match the maximum and minimum depths of your tracks. Press F3 the and click the “*Multi-Color Mode*” button if on Mono Track Colors and you should get the window as shown here on the right. First, you should have the “*Main*” selected as the “*Select file to display*”. If the current track mode for the “*Main*” file isn’t on “*Depth*” as indicated just above the “*New Mode*” button then click the “*New Mode*” button and set it to depth (The “*Main*” track is recommended to always be “*Depth*” for making 3D bottom but isn’t necessary.) Check the “*92 color*” check box if it isn’t already checked and Now enter the maximum depth in the white box at the top of the color bar. Any part of the track that has depth’s outside of the limits you set will now show up in black.



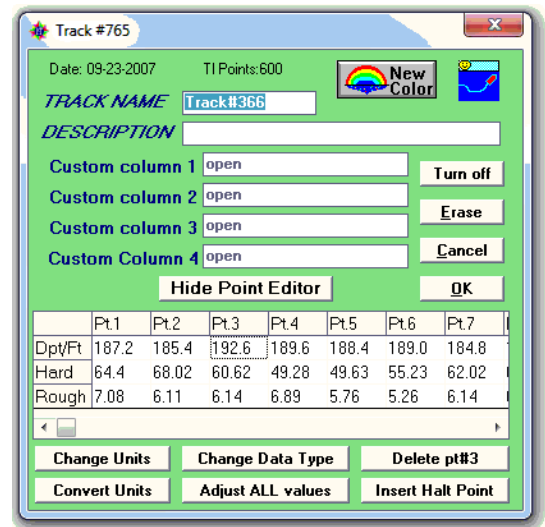
Now that you have your track display properly setup, clear the plotter screen and then turn on the cursor. Pan around in the area of the depth file you want to generate. Areas of tracks will be black in color and may need to be deleted if they are suppose to be between the limits you set. The ones you want to delete are usually between good sections of the track. Deleting a point is permanent so **BEFORE YOU DELETE ANY POINTS ALWAYS DO A BACKUP OF YOUR TRACKS**. Check the “*Draw Track Points outside the limits only*” will only draw the portions of the tracks that have depths outside of the limits you set on the “*Multi-Track Color*” window. Use this to find bad track points in the middle of a large group of tracks.



To **delete a track point**, place your cursor over the black points and watch the readout that appears near the bottom of the plotter screen like the one shown here on the right. If the depth it is reporting is suspected as bad then delete the point by clicking on the readout. If you click the line below that had the track name and date you can enter an upper and lower range of points to delete.

Using the Track Point Editor

There is another way to edit track points were you can see the actual data for each track point. The track points can be viewed and changed using the “*Track Description Editor*”. To call this window just turn on the cursor and place it over the track you want to edit. It a few seconds or so the track name and description will appear in the lower-middle part of the screen. Click on the words “*Track Name*” to call the track description editor. At the bottom of this window is a button labeled “*Edit Track Points*”.



Click this button and the track points for all three data types will be displayed. Use the scroll bar at the bottom of this list to view all of the track points. Look for the obvious errors in data like zeros or negative numbers. When you find one then click on it. Six new buttons will appear that allow you to modify the data in the track.

“*Delete Pt.#*” is clicked to get rid of the value get rid of a wrong track value.

If you know the file should be fathoms and it lists it as feet then click the “*Change Units*” button to change it back to fathoms.

If the track was set a depth record but lists it as speed then click on the “*Speed*” and click the “*Change Data Type*” to select it as feet, fathoms or meters.

Click “*Convert Units*” if you want to change a track from feet to fathoms, note that you will have to click the “*Change Units*” to make the name change to match the data.

Click the “*Adjust ALL values*” button to add or subtract the same about from each data field.

Click the “*Inset Halt Point*” to add a halt point that will put a line break in the track file.

When finished editing the track just click on “*OK*” or “*Cancel*”, either will close the editor and save the changes made. NOTE: Cancel in this case does not keep bring back the changes you made as they are saved at the same time you edited them because you are working directly with the track file.

Cleaning up all depth tracks

A new feature in the 2D WindPlot 7.24 window allows you to find errors in all tracks with depth data. Just click on the 2D menu “Tracks” then click “Previous” then click “Edit” then click “Clean data points” menu. Select this to clean up the track data points before you rebuild the bottom using P-Sea BedBuilder option.

Before you start you need to have the track you want to edit showing on the plotter screen. Then after activating this option is to click on the track you want to edit and the editor shown here to the left will appear.

	Pt.1	Pt.2	Pt.3	Pt.4	Pt.5	Pt.6	Pt.7	Pt.8	Pt.9	Pt.10	Pt.11	Pt.12	Pt.13	Pt.14	Pt.15	Pt.16	Pt.17	Pt.18	Pt.19	Pt.20	Pt.21	Pt.22
Dpt/Ft	187.2	185.4	192.6	199.6	198.4	189.0	184.8	186.6	191.4	191.4	198.6	198.0	199.8	200.4	198.0	198.0	198.0	200.4	200.4	202.2	202.8	202.2
Hard	64.4	68.02	60.62	49.28	49.63	55.23	62.02	67.13	65.33	68.66	64.67	44.23	38.98	34.2	32.33	33.93	39.07	42.27	38.18	34.42	30.27	28.2
Rough	7.08	6.11	6.14	6.89	5.76	5.26	6.14	6.11	6.35	8.18	7.69	5.78	5.78	5.49	5.25	5.37	5.37	5.13	4.16	4.16	4.53	4.06

Control Panel:

- Change Units
- Change Data Type
- Delete Pt.#
- Delete lower points
- Recal. Max./Mins.
- OK
- Convert Units
- Adjust ALL values
- Insert Halt Point
- Delete higher pts
- < Next
- Track >
- Delete track

Each point in a track can have 3 user selectable data points along with the Lat/Long position. The type of data for each point appears in the first column of the track point editor shown above. The value of each point appears after that with their background showing in different colors in accordance to the way the multi-color track window is set up. The colors should transition smoothly from one color to the next. When you see a dramatic difference you may want to delete the point. To delete the point just click on the column of the point to delete and then click the “Delete Pt#” button. Continue this until you have it looking the way you want. The rest of the buttons should be self explanatory using the same procedure to select the point first. **Change Units** will change the units like Ft or fathoms for the entire row, **Change Data Type** will change the entire row to a completely different type of data like from depth to speed, **Adjust All Values** can be used to change every point in the row up or down a little to compensate for say tides on depth, **Insert Halt Point** will add a halt “9999” data point to make breaks in a continuous track file, **Delete Lower/Higher points** buttons will allow you to delete all points with values either higher or lower that the value you specify, **Recal Max./Mins.** Will go through and get the highest/lowest points and set up the color array accordingly, **<Next - Track>** buttons will change to the next track lower or higher, and lastly the **Delete Track** button will delete the entire track. Be sure to click on the “Stop Changes” button when finished editing your track files.