

P-Sea Software
PO Box 1390
Morro Bay, CA 93443
Ph (805) 772-4396 FAX (805) 772-5253

P-Sea WindPlot Ver.6.77 Loran Setup **(while connected to a GPS)**

Yes, you can efficiently use the plotter in full Loran-C mode while the program is connected to nothing but a GPS. This is not only true but a must if you want to continue using your TD hangs after Loran-C is shut down. When the program is properly setup, it will guide you back exactly over your old TD hangs. However, you must set it up BEFORE LORAN-C IS SHUT DOWN in order for it to be accurate. The reason for this is you will be using the readout from your Loran-C (it does not have to be connected to the program) to calibrate the plotter. It will require many calibrations as you move from area to area. It will be accurate ONLY in the areas you get calibrated. The program will save these calibrations and automatically call them back up as you go back to the areas you have already done.

Getting ready for calibration

If this is the first time you have used the program for Loran-C mode you will need to get a few things ready before you can calibrate it. First you must turn on the TD grid in order for the hangs you enter to be adjusted to the proper position. Second, you must setup the GRI and Slaves that you are use to using. Third, you must setup how you want the loran grid to be displayed. Fourth, you must set the plotters present position readout to show loran TD's.

1) Turn the TD Grid On

If the TD grid is not showing it will have to be turned on first. (Note: The grid lines never show up when WindPlot is first started. Change range once to get them to show)

- A Press and hold the **Ctrl** (control) key and tap on the key **G**. If your TD grid is off you will get a message box that says "The TD grid needs to be set to AUTO. Would you like this done for you?".
- B Click on "Yes" to turn the grid on. This will call the TD calibration dialog box. Click on "Cancel" at this point since we are not ready to do a calibration yet.

2) Set GRI and Slaves

If the GRI or Slaves are not the ones you normally use then you will need to set them up.

- A) Press **Ctrl-A** (hold the **Ctrl** key down then press the **A** key and let go) or click on *Options > Conv. TD to LL* to call the TD conv box.

Select only two of the slaves shown in this box

Click to select GRI station

Check this box for automatic est. position

- B) Click on *Set GRI* button. A panel should drop down labeled "GRI SETUP".
- C) Select the "Current GRI" by clicking on the down arrow and then click on the desired chain that appears in the list. Set the slaves you desire in the "Slave Selection" box. You may need to click on the one slave you do not want in order to check the one you want.
- D) Click on *Set Grid and* then *Apply* buttons from the "TD Grid Setup" panel that drops down. The Apply button is located in the lower left of the "TD Grid Setup" box. Click the "Exit" button and when the screen redraws, the TD lines for new GRI/Slaves should appear if they are turned on.

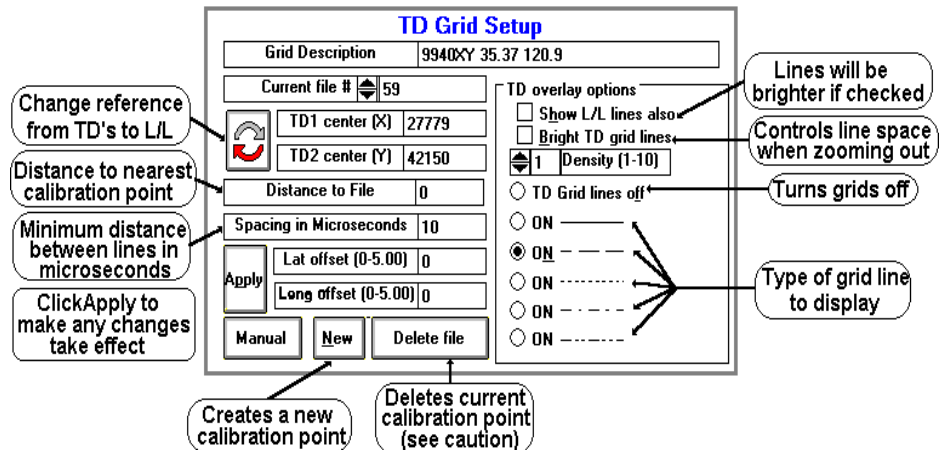
3) Adjusting the Grid line type, color, spacing and density

You have some control of how your grid lines are displayed. The way it is going to be setup will depend on what type of charts you want to display and your own personal preferences.

The setup window

TD line setup is all controlled from the "TD Grid Setup" window as seen below.

To call this window from the menu bar select "Convert TD to LL" item in the "Options" menu (or by pressing **Ctrl-A**). Then click the "Set Grid" button located in the lower right and window will expand downward to display the *TD Grid Setup* window.



Adjusting type of grid lines

To change the type of grid line call the *TD Grid Setup* window (press **Ctrl-A** then click the *Set Grid* button). You can adjust the type of line (dashed, solid, dotted...) you want simply by clicking on the appropriate option button located in front of the example in the *TD Grid Setup* window. Then click the *Apply* button located in the left section of the window and then click the "Exit" button.

Adjusting TD line brightens

The program is set using the standard TD line colors. You can only make them either bright or normal. When using BSB/Maptech charts, you will most likely want them bright. When using Vector charts you may want them at normal brightens.

To change brightness call the *TD Grid Setup* window (press **Ctrl-A** then click the *Set Grid* button). Click the second option on the right labeled **Bright TD grid lines** to change brightness or the lines. The lines will be brighter than normal when this option is checked.

Adjusting the TD grid line spacing

The spacing between the lines can be changed and it is based in microseconds. To change the spacing, call the *TD Grid Setup* window (press **Ctrl-A** then click the *Set Grid* button). Locate the box labeled "Spacing in Microseconds" and click on the white box to the right of it. Use the keyboard to enter in a number in whole microseconds then click the "Apply" button located just below it and then click the "Exit" button.

Adjusting TD grid line density

Grid line spacing is set at 10 microseconds from the factory when zoomed to lower levels (you can change this). As you zoom out you will get more and more lines and it will take longer to draw them. A control is provided that will automatically change the grid line spacing as you zoom out in range. It is call the density control and it has a value you can set from 1-10. 10 being the most dense and 1 the least.

To adjust the density call the *TD Grid Setup* window (press **Ctrl-A** then click the *Set Grid* button). Click the up or down arrows located near the middle that is labeled "Density (1-10)" to change the setting. Click the "Apply" button and then click the "Exit" button. We suggest you start with 3 and see how you like it.

4) Setting present position readout to Loran-C

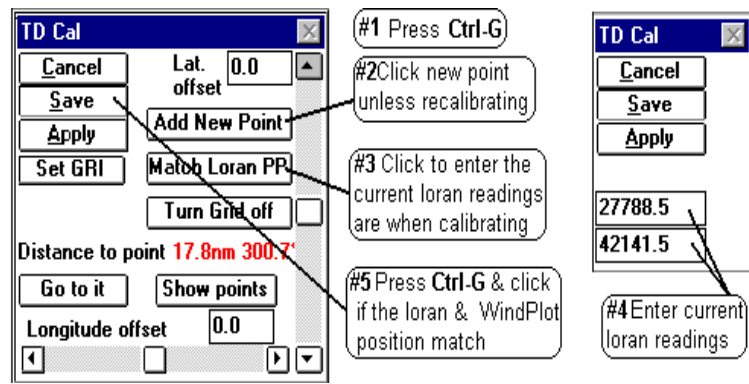
Click on the WindPlots Latitude readout. Select "No" when it asks if you want to set *Dead Reckoning*. In order for you to accurately calibrate your plotter for the proper TD positions, you must have the plotter setup to display what it thinks the TD position is. Doing so, you can monitor both what your loran and the Plotters TD's are. Then whenever they do not match within .2 to .3 microseconds, you can follow the procedure below and force the plotter to match your loran. When this is done the TD's are accurate. It is best to wait until there is at least .2 microseconds of difference before making a new calibration point. Loran's are known to flicker .1 microseconds and you would be putting down new points all of the time. After a while, your plotter would start to slow down when redrawing the screen as it searches for all of the calibrations while it is redrawing.

TD Calibration

There are two procedures used to for calibration points, either doing a NEW or RECALIBRATION point. Usually, if the loran does not match the plotter and your are in a an area you haven't calibrated before, you will want a NEW calibration point.

Loran calibration procedure (NEW point)

1 Get your vessel to the position where you need the calibration done. You can have as many calibration spots (32000 max). We suggest calibrating where the vessel's is tied up for the first point. Make sure your computer is running and all NAV devices are locked in and press **Ctrl-G**. This will switch the present position readout to TD's if not already done and call up the window show above..



- 2 Note the **Distance to point**. If this is more than 2 miles from you, click the "Add New Point" button to create a new calibration spot. Once you have calibrated an area, the computer automatically switches to the nearest spot so you do not have to recalibrate the same area again.
- 3 Click the "Match Loran PP" button and enter in the TD's that your loran is presently reading.
- 4 When both loran numbers are set in, press the **Enter** key.
- 5 If present position readout of the plotter matches your loran, press **Ctrl-G** and click on Save.
- Hint:** Try slowing down the boat if the numbers are changing too fast. Do not worry about creating a new calibration point unless you have traveled quite a ways.

Changing an existing calibration point

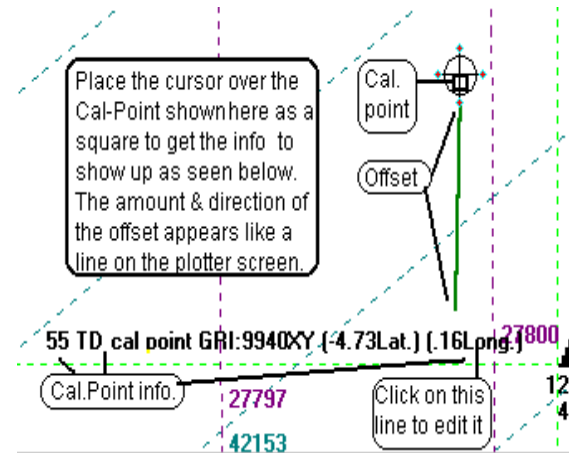
Any changes to the calibrations points description, line spacing, density, color, type of line, GRI and SLAVES are automatically put to the current calibration point when in the auto-grid mode as soon as you click on the *Apply* button in the convert TD to Lat/Log box. You can not however, change the reference point of any of the auto grid files. The only way to do that would be to delete the current file and start a new one **without exiting the grid setup**.

- 1 First, position the vessel or the cursor in the area where the calibration point is. Press **Ctrl-G** and click on *Show Points* button to see the calibration points on the screen and expand the plotter range if you have to.
- 2 Press **Ctrl-A** or click on *Options > Conv. TD to LL* to call the TD conv box.
- 3 If you need to set the GRI or Slaves, do so now by clicking the *Set GRI* button. Change the GRI and Slaves accordingly then make sure the Est. Lat/Long is correct.

- 4 Click on *Set Grid*
- 5 Click on *Apply* button for the changes you made to offsets, GRI or slaves to take effect.
- 6 Click on the *Exit* button and the calibration has been reset.

To edit a calibration point from the plot screen

By clicking on the “*Show Points*” button in the Loran Calibrator (**Ctrl-G**), you can visually see each calibration point as a box symbol, colored differently for each set of chain/slave combinations and the offsets for each depicted as a line. By placing the cursor over anyone of the boxes, you can see what the chain, slaves and actual Latitude/Longitude offsets are. Click this same readout to delete or move the calibration to a different file.



Turning the calibration point screen editor On or Off

- 1 Press **Ctrl-G** to call the calibration box.
- 2 Click the *Details* and then the *Show Points* button to turn the editor on
(or *Hide points* to turn off.)

The screen will redraw with boxes representing the calibration spots with white lines drawn out to zero compensation. Each box will be the same color if the GRI and Slaves are the same. Changing ranges will change box colors as more calibration points appear. It is best to do this with a black background so you can see them better.

Reading individual calibration point data

Turn on the cursor and place it over any calibration point. The calibration number, GRI, slave and offsets will display in the lower, middle of the screen.

Moving or Deleting a calibration point

Place the cursor on the calibration point to delete and click on its data display that appears in the mid-lower portion of the screen and click. Click on **Yes** to delete it, click on **No** to move it to another BIGTD file. If you decide to move it, you will be asked what file name to move it to. The file names allowed are BIGTD.DAT, BIGTD1.DAT, BIGTD2.DAT...BIGTD9.DAT.

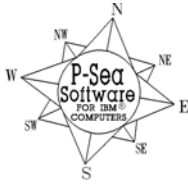
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- 2 Click on *Set Grid*.
- 3 If there is a button that says *AUTO* then click it so it says *MANUAL*.
- 4 Click the *TD Grid lines off* check box.
- 5 Click the *Exit* button.

NOTE: Turing the TD grid off also turns off any calibration offsets that are applied to marks made using TD's, present and cursor position TD readouts.

Classifying a mark/hang as a TD

When you enter a hang using TD's, the program converts it to Latitude and Longitude and that is what the computer uses to display the hang. Then, when you calibrate the area, a certain amount of Lat/Long is applied to offset any errors made in the conversion. Saving the present position as a hang/mark while using a GPS to drive the plotter must not have this offset applied to them or they will be in error. To accomplish the distinction between them we must identify which hangs were entered in TD's. This classification is actually done automatically when you do the conversion. Look at the mark search and edit list and you will note a column with “**TD**” as a header. Any mark with an “**X**” in this column is considered a TD by the program and offsets will be applied to these marks/hangs only. The computer tags this column when you enter a hang in TD's. Simply click on this column if you wish to change the TD classification of any hang but be careful not to X any hang made with a GPS.



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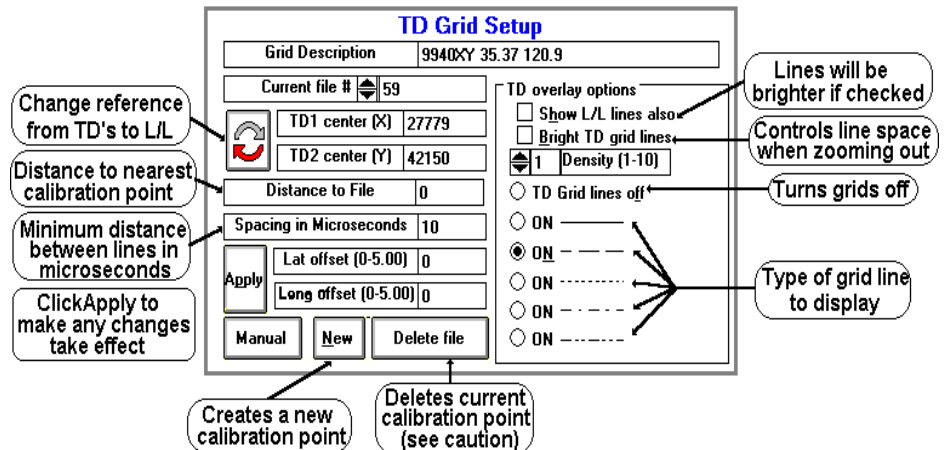
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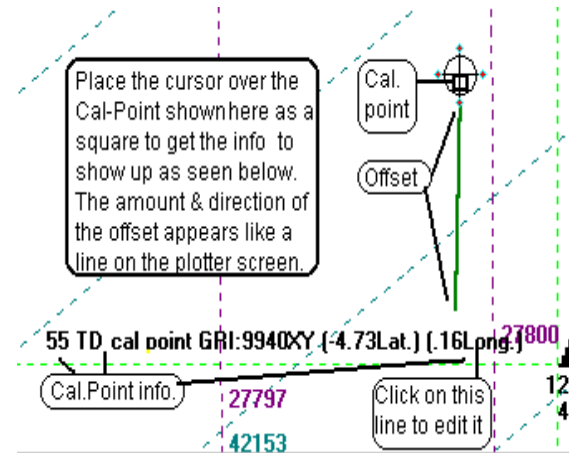
Grid line spacing is set at 10 microseconds from the factory when zoomed to lower levels (you can change this). As you zoom out you will get more and more lines and it will take longer to draw them. A control is provided that will automatically change the grid line spacing as you zoom out in range. It is call the density control and it has a value you can set from 1-10. 10 being the most dense and 1 the least.

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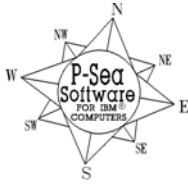
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GRI SETUP

Current GRI
9940 U.S. WEST COAST CHAIN

Slave Station Selection
 W 13796.9
 X 28094.5
 Y 41967.3

TD correction factors (Microseconds)
X 0.00 Y 0.00

Est. Position (within 200 miles)
Est. Latitude 35°22.000'N
Est. Longitude 120°54.000'W
 Use Present Position

Setup TD grid

- B) Click on *Set GRI* button. A panel should drop down labeled "GRI SETUP".

- C) Select the "Current GRI" by clicking on the down arrow and then click on the desired chain that appears in the list. Set the slaves you desire in the "Slave Selection" box. You may need to click on the one slave you do not want in order to check the one you want.

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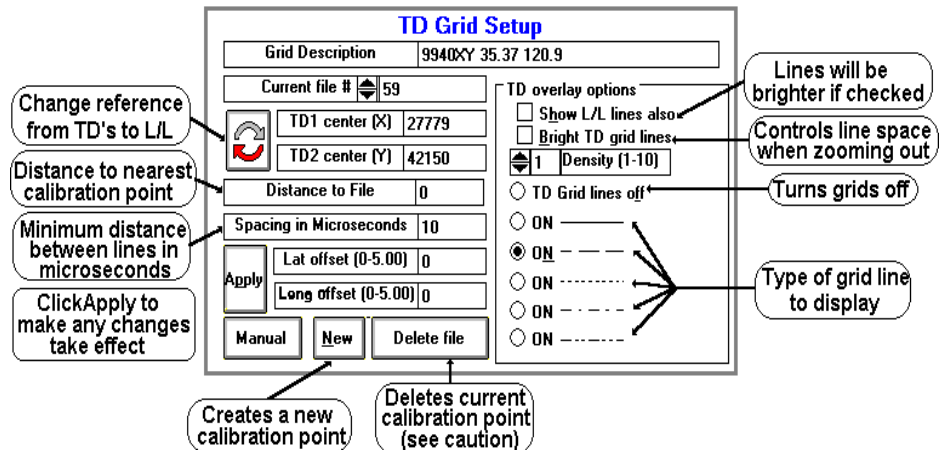
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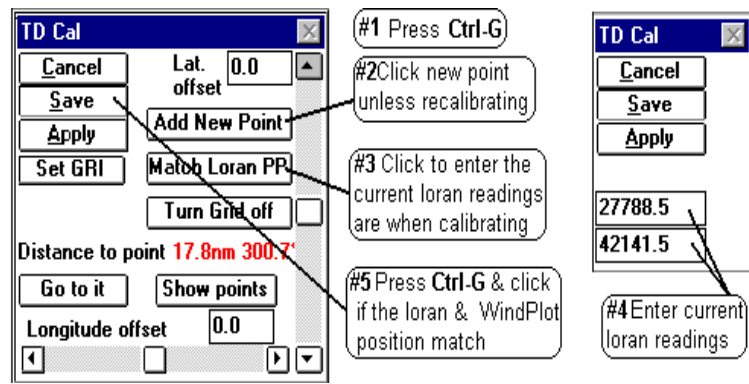
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1 Get your vessel to the position where you need the calibration done. You can have as many calibration spots (32000 max). We suggest calibrating where the vessel's is tied up for the first point. Make sure your computer is running and all NAV devices are locked in and press **Ctrl-G**. This will switch the present position readout to TD's if not already done and call up the window show above..



- 2 Note the **Distance to point**. If this is more than 2 miles from you, click the "Add New Point" button to create a new calibration spot. Once you have calibrated an area, the computer automatically switches to the nearest spot so you do not have to recalibrate the same area again.
- 3 Click the "Match Loran PP" button and enter in the TD's that your loran is presently reading.
- 4 When both loran numbers are set in, press the **Enter** key.
- 5 If present position readout of the plotter matches your loran, press **Ctrl-G** and click on **Save**.
- Hint:** Try slowing down the boat if the numbers are changing too fast. Do not worry about creating a new calibration point unless you have traveled quite a ways.

Changing an existing calibration point

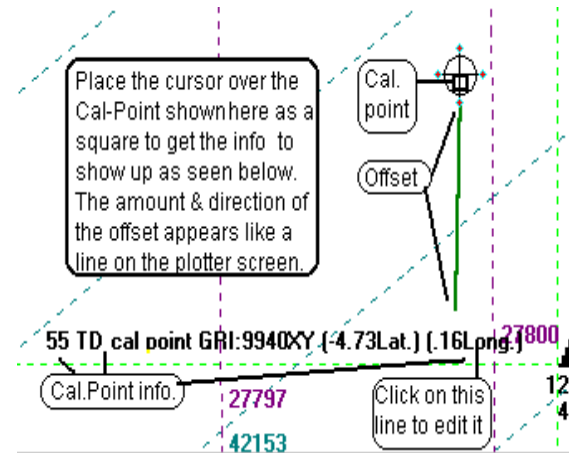
Any changes to the calibrations points description, line spacing, density, color, type of line, GRI and SLAVES are automatically put to the current calibration point when in the auto-grid mode as soon as you click on the *Apply* button in the convert TD to Lat/Log box. You can not however, change the reference point of any of the auto grid files. The only way to do that would be to delete the current file and start a new one **without exiting the grid setup**.

- 1 First, position the vessel or the cursor in the area where the calibration point is. Press **Ctrl-G** and click on *Show Points* button to see the calibration points on the screen and expand the plotter range if you have to.
- 2 Press **Ctrl-A** or click on *Options > Conv. TD to LL* to call the TD conv box.
- 3 If you need to set the GRI or Slaves, do so now by clicking the *Set GRI* button. Change the GRI and Slaves accordingly then make sure the Est. Lat/Long is correct.

- 4 Click on *Set Grid*
- 5 Click on *Apply* button for the changes you made to offsets, GRI or slaves to take effect.
- 6 Click on the *Exit* button and the calibration has been reset.

To edit a calibration point from the plot screen

By clicking on the “*Show Points*” button in the Loran Calibrator (**Ctrl-G**), you can visually see each calibration point as a box symbol, colored differently for each set of chain/slave combinations and the offsets for each depicted as a line. By placing the cursor over anyone of the boxes, you can see what the chain, slaves and actual Latitude/Longitude offsets are. Click this same readout to delete or move the calibration to a different file.



Turning the calibration point screen editor On or Off

- 1 Press **Ctrl-G** to call the calibration box.
- 2 Click the *Details* and then the *Show Points* button to turn the editor on
(or *Hide points* to turn off.)

The screen will redraw with boxes representing the calibration spots with white lines drawn out to zero compensation. Each box will be the same color if the GRI and Slaves are the same. Changing ranges will change box colors as more calibration points appear. It is best to do this with a black background so you can see them better.

Reading individual calibration point data

Turn on the cursor and place it over any calibration point. The calibration number, GRI, slave and offsets will display in the lower, middle of the screen.

Moving or Deleting a calibration point

Place the cursor on the calibration point to delete and click on its data display that appears in the mid-lower portion of the screen and click. Click on **Yes** to delete it, click on **No** to move it to another BIGTD file. If you decide to move it, you will be asked what file name to move it to. The file names allowed are BIGTD.DAT, BIGTD1.DAT, BIGTD2.DAT...BIGTD9.DAT.

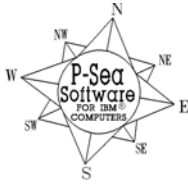
Turning the Grid on or off

- 1 Press **Ctrl-A** or click on *Options > Conv. TD to LL* to call the TD conv box.
- 2 Click on *Set Grid*.
- 3 If there is a button that says *AUTO* then click it so it says *MANUAL*.
- 4 Click the *TD Grid lines off* check box.
- 5 Click the *Exit* button.

NOTE: Turing the TD grid off also turns off any calibration offsets that are applied to marks made using TD's, present and cursor position TD readouts.

Classifying a mark/hang as a TD

When you enter a hang using TD's, the program converts it to Latitude and Longitude and that is what the computer uses to display the hang. Then, when you calibrate the area, a certain amount of Lat/Long is applied to offset any errors made in the conversion. Saving the present position as a hang/mark while using a GPS to drive the plotter must not have this offset applied to them or they will be in error. To accomplish the distinction between them we must identify which hangs were entered in TD's. This classification is actually done automatically when you do the conversion. Look at the mark search and edit list and you will note a column with “**TD**” as a header. Any mark with an “**X**” in this column is considered a TD by the program and offsets will be applied to these marks/hangs only. The computer tags this column when you enter a hang in TD's. Simply click on this column if you wish to change the TD classification of any hang but be careful not to X any hang made with a GPS.



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P-Sea WindPlot Ver.6.77 Loran Setup **(while connected to a GPS)**

Yes, you can efficiently use the plotter in full Loran-C mode while the program is connected to nothing but a GPS. This is not only true but a must if you want to continue using your TD hangs after Loran-C is shut down. When the program is properly setup, it will guide you back exactly over your old TD hangs. However, you must set it up BEFORE LORAN-C IS SHUT DOWN in order for it to be accurate. The reason for this is you will be using the readout from your Loran-C (it does not have to be connected to the program) to calibrate the plotter. It will require many calibrations as you move from area to area. It will be accurate ONLY in the areas you get calibrated. The program will save these calibrations and automatically call them back up as you go back to the areas you have already done.

Getting ready for calibration

If this is the first time you have used the program for Loran-C mode you will need to get a few things ready before you can calibrate it. First you must turn on the TD grid in order for the hangs you enter to be adjusted to the proper position. Second, you must setup the GRI and Slaves that you are use to using. Third, you must setup how you want the loran grid to be displayed. Fourth, you must set the plotters present position readout to show loran TD's.

1) Turn the TD Grid On

If the TD grid is not showing it will have to be turned on first. (Note: The grid lines never show up when WindPlot is first started. Change range once to get them to show)

- A Press and hold the **Ctrl** (control) key and tap on the key **G**. If your TD grid is off you will get a message box that says "The TD grid needs to be set to AUTO. Would you like this done for you?".
- B Click on "Yes" to turn the grid on. This will call the TD calibration dialog box. Click on "Cancel" at this point since we are not ready to do a calibration yet.

2) Set GRI and Slaves

If the GRI or Slaves are not the ones you normally use then you will need to set them up.

- A) Press **Ctrl-A** (hold the **Ctrl** key down then press the **A** key and let go) or click on *Options > Conv. TD to LL* to call the TD conv box.

Select only two of the slaves shown in this box

Click to select GRI station

Check this box for automatic est. position

- B) Click on *Set GRI* button. A panel should drop down labeled "GRI SETUP".
- C) Select the "Current GRI" by clicking on the down arrow and then click on the desired chain that appears in the list. Set the slaves you desire in the "Slave Selection" box. You may need to click on the one slave you do not want in order to check the one you want.
- D) Click on *Set Grid and* then *Apply* buttons from the "TD Grid Setup" panel that drops down. The Apply button is located in the lower left of the "TD Grid Setup" box. Click the "Exit" button and when the screen redraws, the TD lines for new GRI/Slaves should appear if they are turned on.

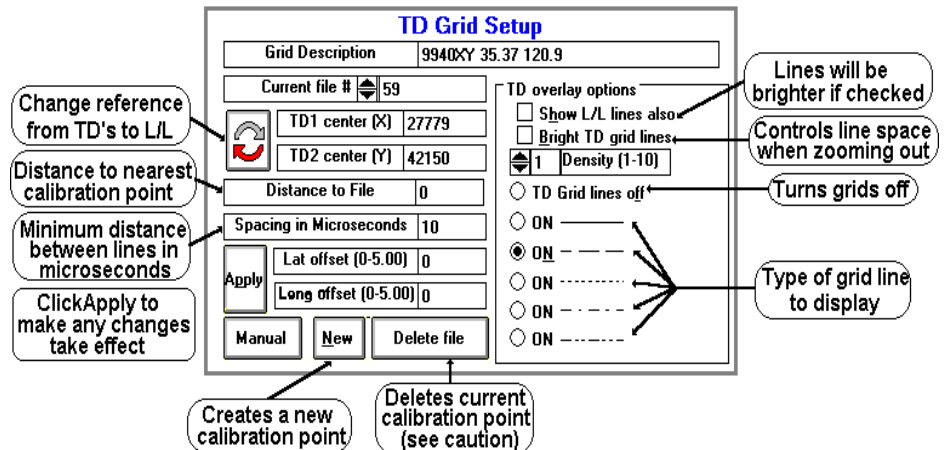
3) Adjusting the Grid line type, color, spacing and density

You have some control of how your grid lines are displayed. The way it is going to be setup will depend on what type of charts you want to display and your own personal preferences.

The setup window

TD line setup is all controlled from the "TD Grid Setup" window as seen below.

To call this window from the menu bar select "Convert TD to LL" item in the "Options" menu (or by pressing **Ctrl-A**). Then click the "Set Grid" button located in the lower right and window will expand downward to display the *TD Grid Setup* window.



Adjusting type of grid lines

To change the type of grid line call the *TD Grid Setup window* (press **Ctrl-A** then click the *Set Grid* button). You can adjust the type of line (dashed, solid, dotted...) you want simply by clicking on the appropriate option button located in front of the example in the *TD Grid Setup* window. Then click the *Apply* button located in the left section of the window and then click the "Exit" button.

Adjusting TD line brightens

The program is set using the standard TD line colors. You can only make them either bright or normal. When using BSB/Maptech charts, you will most likely want them bright. When using Vector charts you may want them at normal brightens.

To change brightness call the *TD Grid Setup window* (press **Ctrl-A** then click the *Set Grid* button). Click the second option on the right labeled **Bright TD grid lines** to change brightness or the lines. The lines will be brighter than normal when this option is checked.

Adjusting the TD grid line spacing

The spacing between the lines can be changed and it is based in microseconds. To change the spacing, call the *TD Grid Setup window* (press **Ctrl-A** then click the *Set Grid* button). Locate the box labeled "Spacing in Microseconds" and click on the white box to the right of it. Use the keyboard to enter in a number in whole microseconds then click the "Apply" button located just below it and then click the "Exit" button.

Adjusting TD grid line density

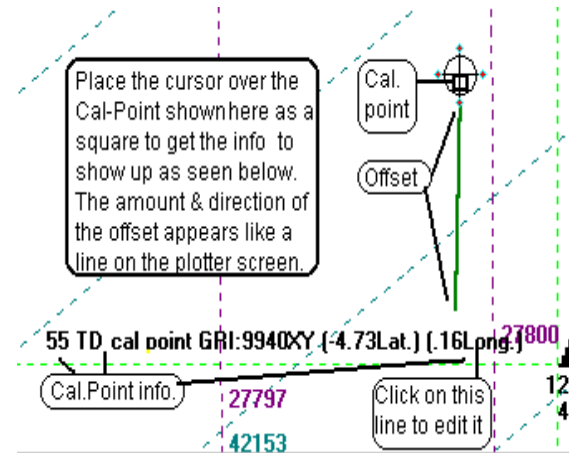
Grid line spacing is set at 10 microseconds from the factory when zoomed to lower levels (you can change this). As you zoom out you will get more and more lines and it will take longer to draw them. A control is provided that will automatically change the grid line spacing as you zoom out in range. It is call the density control and it has a value you can set from 1-10. 10 being the most dense and 1 the least.

To adjust the density call the *TD Grid Setup window* (press **Ctrl-A** then click the *Set Grid* button). Click the up or down arrows located near the middle that is labeled "Density (1-10)" to change the setting. Click the "Apply" button and then click the "Exit" button. We suggest you start with 3 and see how you like it.

- 4 Click on *Set Grid*
- 5 Click on *Apply* button for the changes you made to offsets, GRI or slaves to take effect.
- 6 Click on the *Exit* button and the calibration has been reset.

To edit a calibration point from the plot screen

By clicking on the “*Show Points*” button in the Loran Calibrator (**Ctrl-G**), you can visually see each calibration point as a box symbol, colored differently for each set of chain/slave combinations and the offsets for each depicted as a line. By placing the cursor over anyone of the boxes, you can see what the chain, slaves and actual Latitude/Longitude offsets are. Click this same readout to delete or move the calibration to a different file.



Turning the calibration point screen editor On or Off

- 1 Press **Ctrl-G** to call the calibration box.
- 2 Click the *Details* and then the *Show Points* button to turn the editor on
(or *Hide points* to turn off.)

The screen will redraw with boxes representing the calibration spots with white lines drawn out to zero compensation. Each box will be the same color if the GRI and Slaves are the same. Changing ranges will change box colors as more calibration points appear. It is best to do this with a black background so you can see them better.

Reading individual calibration point data

Turn on the cursor and place it over any calibration point. The calibration number, GRI, slave and offsets will display in the lower, middle of the screen.

Moving or Deleting a calibration point

Place the cursor on the calibration point to delete and click on its data display that appears in the mid-lower portion of the screen and click. Click on **Yes** to delete it, click on **No** to move it to another BIGTD file. If you decide to move it, you will be asked what file name to move it to. The file names allowed are BIGTD.DAT, BIGTD1.DAT, BIGTD2.DAT...BIGTD9.DAT.

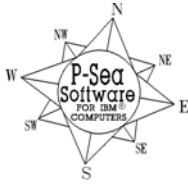
Turning the Grid on or off

- 1 Press **Ctrl-A** or click on *Options > Conv. TD to LL* to call the TD conv box.
- 2 Click on *Set Grid*.
- 3 If there is a button that says *AUTO* then click it so it says *MANUAL*.
- 4 Click the *TD Grid lines off* check box.
- 5 Click the *Exit* button.

NOTE: Turing the TD grid off also turns off any calibration offsets that are applied to marks made using TD's, present and cursor position TD readouts.

Classifying a mark/hang as a TD

When you enter a hang using TD's, the program converts it to Latitude and Longitude and that is what the computer uses to display the hang. Then, when you calibrate the area, a certain amount of Lat/Long is applied to offset any errors made in the conversion. Saving the present position as a hang/mark while using a GPS to drive the plotter must not have this offset applied to them or they will be in error. To accomplish the distinction between them we must identify which hangs were entered in TD's. This classification is actually done automatically when you do the conversion. Look at the mark search and edit list and you will note a column with “**TD**” as a header. Any mark with an “**X**” in this column is considered a TD by the program and offsets will be applied to these marks/hangs only. The computer tags this column when you enter a hang in TD's. Simply click on this column if you wish to change the TD classification of any hang but be careful not to X any hang made with a GPS.



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P-Sea WindPlot Ver.6.77 Loran Setup **(while connected to a GPS)**

Yes, you can efficiently use the plotter in full Loran-C mode while the program is connected to nothing but a GPS. This is not only true but a must if you want to continue using your TD hangs after Loran-C is shut down. When the program is properly setup, it will guide you back exactly over your old TD hangs. However, you must set it up BEFORE LORAN-C IS SHUT DOWN in order for it to be accurate. The reason for this is you will be using the readout from your Loran-C (it does not have to be connected to the program) to calibrate the plotter. It will require many calibrations as you move from area to area. It will be accurate ONLY in the areas you get calibrated. The program will save these calibrations and automatically call them back up as you go back to the areas you have already done.

Getting ready for calibration

If this is the first time you have used the program for Loran-C mode you will need to get a few things ready before you can calibrate it. First you must turn on the TD grid in order for the hangs you enter to be adjusted to the proper position. Second, you must setup the GRI and Slaves that you are use to using. Third, you must setup how you want the loran grid to be displayed. Fourth, you must set the plotters present position readout to show loran TD's.

1) Turn the TD Grid On

If the TD grid is not showing it will have to be turned on first. (Note: The grid lines never show up when WindPlot is first started. Change range once to get them to show)

- A Press and hold the **Ctrl** (control) key and tap on the key **G**. If your TD grid is off you will get a message box that says "The TD grid needs to be set to AUTO. Would you like this done for you?".
- B Click on "Yes" to turn the grid on. This will call the TD calibration dialog box. Click on "Cancel" at this point since we are not ready to do a calibration yet.

2) Set GRI and Slaves

If the GRI or Slaves are not the ones you normally use then you will need to set them up.

- A) Press **Ctrl-A** (hold the **Ctrl** key down then press the **A** key and let go) or click on *Options > Conv. TD to LL* to call the TD conv box.

Select only two of the slaves shown in this box

GRI SETUP	
Current GRI	
9940 U.S. WEST COAST CHAIN	
Slave Station Selection	
<input type="checkbox"/>	W 13796.9
<input checked="" type="checkbox"/>	X 28094.5
<input checked="" type="checkbox"/>	Y 41967.3
TD correction factors (Microseconds)	
X	0.00
Y	0.00
Est. Position (within 200 miles)	
Est. Latitude	35°22.000'N
Est. Longitude	120°54.000'W
<input type="checkbox"/> Use Present Position	
Setup TD grid	

- B) Click on *Set GRI* button. A panel should drop down labeled "GRI SETUP".

- C) Select the "Current GRI" by clicking on the down arrow and then click on the desired chain that appears in the list. Set the slaves you desire in the "Slave Selection" box. You may need to click on the one slave you do not want in order to check the one you want.

- D) Click on *Set Grid* and then *Apply* buttons from the "TD Grid Setup" panel that drops down. The Apply button is located in the lower left of the "TD Grid Setup" box.

Click the "Exit" button and when the screen redraws, the TD lines for new GRI/Slaves should appear if they are turned on.

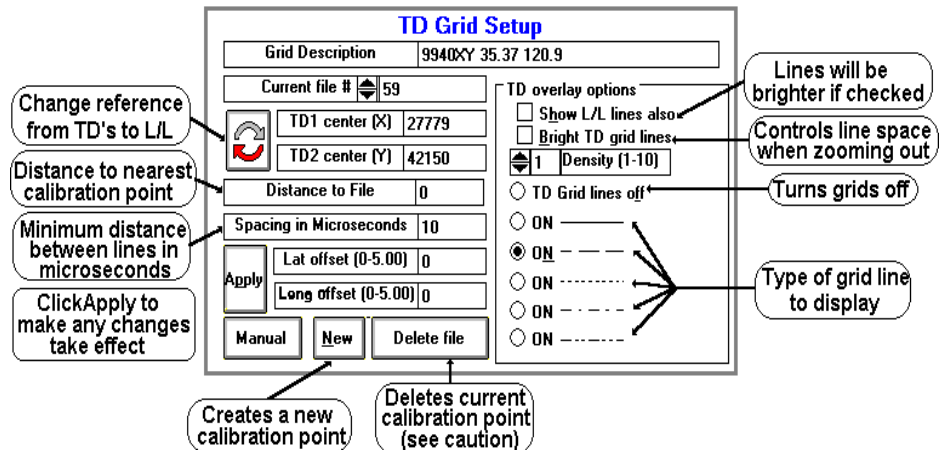
3) Adjusting the Grid line type, color, spacing and density

You have some control of how your grid lines are displayed. The way it is going to be setup will depend on what type of charts you want to display and your own personal preferences.

The setup window

TD line setup is all controlled from the "TD Grid Setup" window as seen below.

To call this window from the menu bar select "Convert TD to LL" item in the "Options" menu (or by pressing **Ctrl-A**). Then click the "Set Grid" button located in the lower right and window will expand downward to display the *TD Grid Setup* window.



Adjusting type of grid lines

To change the type of grid line call the *TD Grid Setup window* (press **Ctrl-A** then click the *Set Grid* button). You can adjust the type of line (dashed, solid, dotted...) you want simply by clicking on the appropriate option button located in front of the example in the *TD Grid Setup* window. Then click the *Apply* button located in the left section of the window and then click the "Exit" button.

Adjusting TD line brightens

The program is set using the standard TD line colors. You can only make them either bright or normal. When using BSB/Maptech charts, you will most likely want them bright. When using Vector charts you may want them at normal brightens.

To change brightness call the *TD Grid Setup window* (press **Ctrl-A** then click the *Set Grid* button). Click the second option on the right labeled **Bright TD grid lines** to change brightness or the lines. The lines will be brighter than normal when this option is checked.

Adjusting the TD grid line spacing

The spacing between the lines can be changed and it is based in microseconds. To change the spacing, call the *TD Grid Setup window* (press **Ctrl-A** then click the *Set Grid* button). Locate the box labeled "Spacing in Microseconds" and click on the white box to the right of it. Use the keyboard to enter in a number in whole microseconds then click the "Apply" button located just below it and then click the "Exit" button.

Adjusting TD grid line density

Grid line spacing is set at 10 microseconds from the factory when zoomed to lower levels (you can change this). As you zoom out you will get more and more lines and it will take longer to draw them. A control is provided that will automatically change the grid line spacing as you zoom out in range. It is call the density control and it has a value you can set from 1-10. 10 being the most dense and 1 the least.

To adjust the density call the *TD Grid Setup window* (press **Ctrl-A** then click the *Set Grid* button). Click the up or down arrows located near the middle that is labeled "Density (1-10)" to change the setting. Click the "Apply" button and then click the "Exit" button. We suggest you start with 3 and see how you like it.

4) Setting present position readout to Loran-C

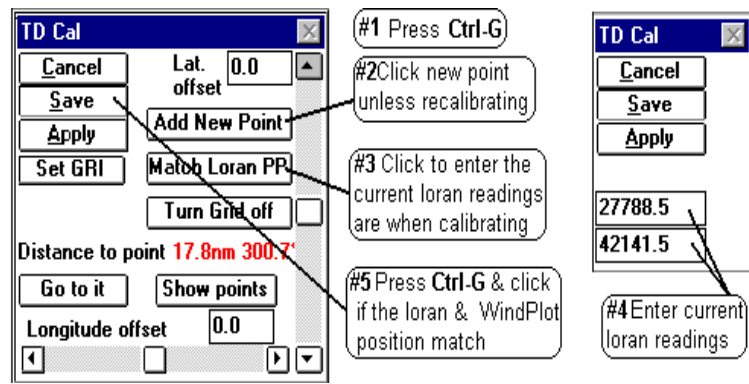
Click on the WindPlots Latitude readout. Select "No" when it asks if you want to set *Dead Reckoning*. In order for you to accurately calibrate your plotter for the proper TD positions, you must have the plotter setup to display what it thinks the TD position is. Doing so, you can monitor both what your loran and the Plotters TD's are. Then whenever they do not match within .2 to .3 microseconds, you can follow the procedure below and force the plotter to match your loran. When this is done the TD's are accurate. It is best to wait until there is at least .2 microseconds of difference before making a new calibration point. Loran's are known to flicker .1 microseconds and you would be putting down new points all of the time. After a while, your plotter would start to slow down when redrawing the screen as it searches for all of the calibrations while it is redrawing.

TD Calibration

There are two procedures used to for calibration points, either doing a NEW or RECALIBRATION point. Usually, if the loran does not match the plotter and your are in a an area you haven't calibrated before, you will want a NEW calibration point.

Loran calibration procedure (NEW point)

1 Get your vessel to the position where you need the calibration done. You can have as many calibration spots (32000 max). We suggest calibrating where the vessel's is tied up for the first point. Make sure your computer is running and all NAV devices are locked in and press **Ctrl-G**. This will switch the present position readout to TD's if not already done and call up the window show above..



- 2 Note the **Distance to point**. If this is more than 2 miles from you, click the "Add New Point" button to create a new calibration spot. Once you have calibrated an area, the computer automatically switches to the nearest spot so you do not have to recalibrate the same area again.
 - 3 Click the "Match Loran PP" button and enter in the TD's that your loran is presently reading.
 - 4 When both loran numbers are set in, press the **Enter** key.
 - 5 If present position readout of the plotter matches your loran, press **Ctrl-G** and click on Save.
- Hint:** Try slowing down the boat if the numbers are changing too fast. Do not worry about creating a new calibration point unless you have traveled quite a ways.

Changing an existing calibration point

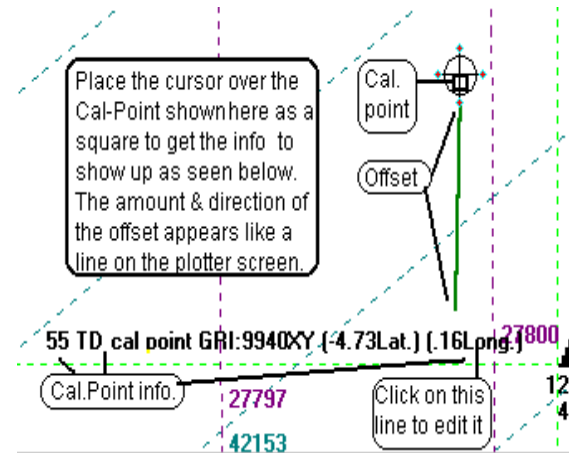
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- 1 First, position the vessel or the cursor in the area where the calibration point is. Press **Ctrl-G** and click on *Show Points* button to see the calibration points on the screen and expand the plotter range if you have to.
- 2 Press **Ctrl-A** or click on *Options > Conv. TD to LL* to call the TD conv box.
- 3 If you need to set the GRI or Slaves, do so now by clicking the *Set GRI* button. Change the GRI and Slaves accordingly then make sure the Est. Lat/Long is correct.

- 4 Click on *Set Grid*
- 5 Click on *Apply* button for the changes you made to offsets, GRI or slaves to take effect.
- 6 Click on the *Exit* button and the calibration has been reset.

To edit a calibration point from the plot screen

By clicking on the “*Show Points*” button in the Loran Calibrator (**Ctrl-G**), you can visually see each calibration point as a box symbol, colored differently for each set of chain/slave combinations and the offsets for each depicted as a line. By placing the cursor over anyone of the boxes, you can see what the chain, slaves and actual Latitude/Longitude offsets are. Click this same readout to delete or move the calibration to a different file.



Turning the calibration point screen editor On or Off

- 1 Press **Ctrl-G** to call the calibration box.
- 2 Click the *Details* and then the *Show Points* button to turn the editor on
(or *Hide points* to turn off.)

The screen will redraw with boxes representing the calibration spots with white lines drawn out to zero compensation. Each box will be the same color if the GRI and Slaves are the same. Changing ranges will change box colors as more calibration points appear. It is best to do this with a black background so you can see them better.

Reading individual calibration point data

Turn on the cursor and place it over any calibration point. The calibration number, GRI, slave and offsets will display in the lower, middle of the screen.

Moving or Deleting a calibration point

Place the cursor on the calibration point to delete and click on its data display that appears in the mid-lower portion of the screen and click. Click on **Yes** to delete it, click on **No** to move it to another BIGTD file. If you decide to move it, you will be asked what file name to move it to. The file names allowed are BIGTD.DAT, BIGTD1.DAT, BIGTD2.DAT...BIGTD9.DAT.

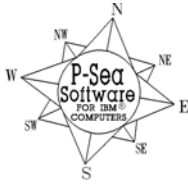
Turning the Grid on or off

- 1 Press **Ctrl-A** or click on *Options > Conv. TD to LL* to call the TD conv box.
- 2 Click on *Set Grid*.
- 3 If there is a button that says *AUTO* then click it so it says *MANUAL*.
- 4 Click the *TD Grid lines off* check box.
- 5 Click the *Exit* button.

NOTE: Turing the TD grid off also turns off any calibration offsets that are applied to marks made using TD's, present and cursor position TD readouts.

Classifying a mark/hang as a TD

When you enter a hang using TD's, the program converts it to Latitude and Longitude and that is what the computer uses to display the hang. Then, when you calibrate the area, a certain amount of Lat/Long is applied to offset any errors made in the conversion. Saving the present position as a hang/mark while using a GPS to drive the plotter must not have this offset applied to them or they will be in error. To accomplish the distinction between them we must identify which hangs were entered in TD's. This classification is actually done automatically when you do the conversion. Look at the mark search and edit list and you will note a column with “**TD**” as a header. Any mark with an “**X**” in this column is considered a TD by the program and offsets will be applied to these marks/hangs only. The computer tags this column when you enter a hang in TD's. Simply click on this column if you wish to change the TD classification of any hang but be careful not to X any hang made with a GPS.



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Getting ready for calibration

If this is the first time you have used the program for Loran-C mode you will need to get a few things ready before you can calibrate it. First you must turn on the TD grid in order for the hangs you enter to be adjusted to the proper position. Second, you must setup the GRI and Slaves that you are use to using. Third, you must setup how you want the loran grid to be displayed. Fourth, you must set the plotters present position readout to show loran TD's.

1) Turn the TD Grid On

If the TD grid is not showing it will have to be turned on first. (Note: The grid lines never show up when WindPlot is first started. Change range once to get them to show)

- A Press and hold the **Ctrl** (control) key and tap on the key **G**. If your TD grid is off you will get a message box that says "The TD grid needs to be set to AUTO. Would you like this done for you?".
- B Click on "Yes" to turn the grid on. This will call the TD calibration dialog box. Click on "Cancel" at this point since we are not ready to do a calibration yet.

2) Set GRI and Slaves

If the GRI or Slaves are not the ones you normally use then you will need to set them up.

- A) Press **Ctrl-A** (hold the **Ctrl** key down then press the **A** key and let go) or click on *Options > Conv. TD to LL* to call the TD conv box.

Select only two of the slaves shown in this box

Click to select GRI station

Check this box for automatic est. position

- B) Click on *Set GRI* button. A panel should drop down labeled "GRI SETUP".
- C) Select the "Current GRI" by clicking on the down arrow and then click on the desired chain that appears in the list. Set the slaves you desire in the "Slave Selection" box. You may need to click on the one slave you do not want in order to check the one you want.
- D) Click on *Set Grid and* then *Apply* buttons from the "TD Grid Setup" panel that drops down. The Apply button is located in the lower left of the "TD Grid Setup" box. Click the "Exit" button and when the screen redraws, the TD lines for new GRI/Slaves should appear if they are turned on.

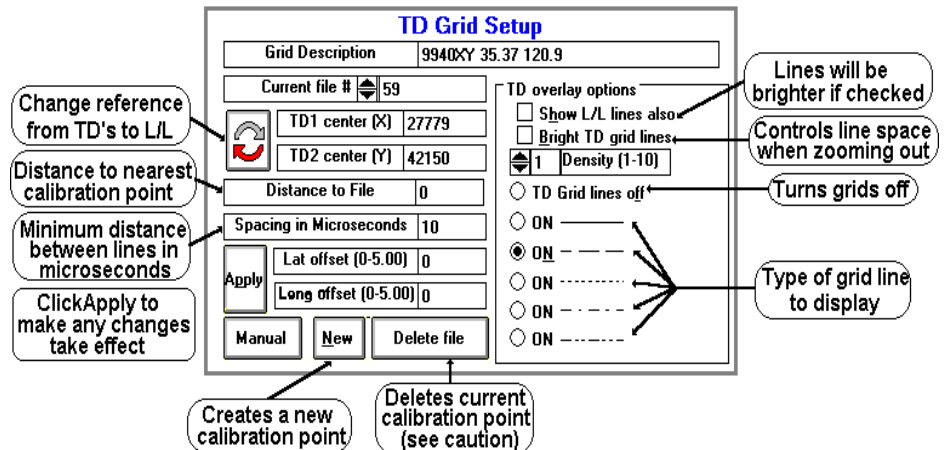
3) Adjusting the Grid line type, color, spacing and density

You have some control of how your grid lines are displayed. The way it is going to be setup will depend on what type of charts you want to display and your own personal preferences.

The setup window

TD line setup is all controlled from the "TD Grid Setup" window as seen below.

To call this window from the menu bar select "Convert TD to LL" item in the "Options" menu (or by pressing **Ctrl-A**). Then click the "Set Grid" button located in the lower right and window will expand downward to display the *TD Grid Setup* window.



Adjusting type of grid lines

To change the type of grid line call the *TD Grid Setup window* (press **Ctrl-A** then click the *Set Grid* button). You can adjust the type of line (dashed, solid, dotted...) you want simply by clicking on the appropriate option button located in front of the example in the *TD Grid Setup* window. Then click the *Apply* button located in the left section of the window and then click the "Exit" button.

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The program is set using the standard TD line colors. You can only make them either bright or normal. When using BSB/Maptech charts, you will most likely want them bright. When using Vector charts you may want them at normal brightens.

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The spacing between the lines can be changed and it is based in microseconds. To change the spacing, call the *TD Grid Setup window* (press **Ctrl-A** then click the *Set Grid* button). Locate the box labeled "Spacing in Microseconds" and click on the white box to the right of it. Use the keyboard to enter in a number in whole microseconds then click the "Apply" button located just below it and then click the "Exit" button.

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Grid line spacing is set at 10 microseconds from the factory when zoomed to lower levels (you can change this). As you zoom out you will get more and more lines and it will take longer to draw them. A control is provided that will automatically change the grid line spacing as you zoom out in range. It is call the density control and it has a value you can set from 1-10. 10 being the most dense and 1 the least.

To adjust the density call the *TD Grid Setup window* (press **Ctrl-A** then click the *Set Grid* button). Click the up or down arrows located near the middle that is labeled "Density (1-10)" to change the setting. Click the "Apply" button and then click the "Exit" button. We suggest you start with 3 and see how you like it.

4) Setting present position readout to Loran-C

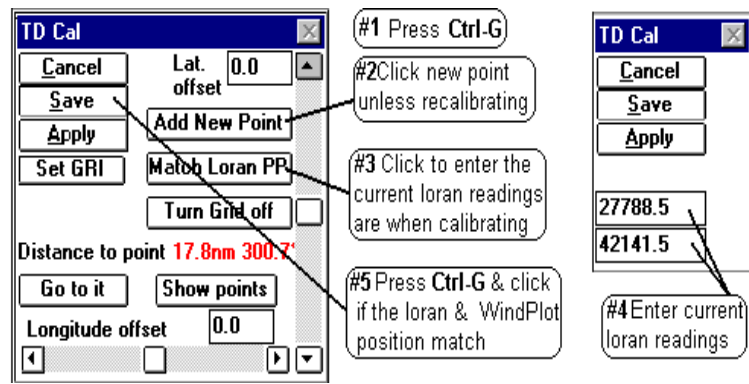
Click on the WindPlots Latitude readout. Select "No" when it asks if you want to set *Dead Reckoning*. In order for you to accurately calibrate your plotter for the proper TD positions, you must have the plotter setup to display what it thinks the TD position is. Doing so, you can monitor both what your loran and the Plotters TD's are. Then whenever they do not match within .2 to .3 microseconds, you can follow the procedure below and force the plotter to match your loran. When this is done the TD's are accurate. It is best to wait until there is at least .2 microseconds of difference before making a new calibration point. Loran's are known to flicker .1 microseconds and you would be putting down new points all of the time. After a while, your plotter would start to slow down when redrawing the screen as it searches for all of the calibrations while it is redrawing.

TD Calibration

There are two procedures used to for calibration points, either doing a NEW or RECALIBRATION point. Usually, if the loran does not match the plotter and your are in a an area you haven't calibrated before, you will want a NEW calibration point.

Loran calibration procedure (NEW point)

1 Get your vessel to the position where you need the calibration done. You can have as many calibration spots (32000 max). We suggest calibrating where the vessel's is tied up for the first point. Make sure your computer is running and all NAV devices are locked in and press **Ctrl-G**. This will switch the present position readout to TD's if not already done and call up the window show above..



- 2 Note the **Distance to point**. If this is more than 2 miles from you, click the "Add New Point" button to create a new calibration spot. Once you have calibrated an area, the computer automatically switches to the nearest spot so you do not have to recalibrate the same area again.
- 3 Click the "Match Loran PP" button and enter in the TD's that your loran is presently reading.
- 4 When both loran numbers are set in, press the **Enter** key.
- 5 If present position readout of the plotter matches your loran, press **Ctrl-G** and click on **Save**.
- Hint:** Try slowing down the boat if the numbers are changing too fast. Do not worry about creating a new calibration point unless you have traveled quite a ways.

Changing an existing calibration point

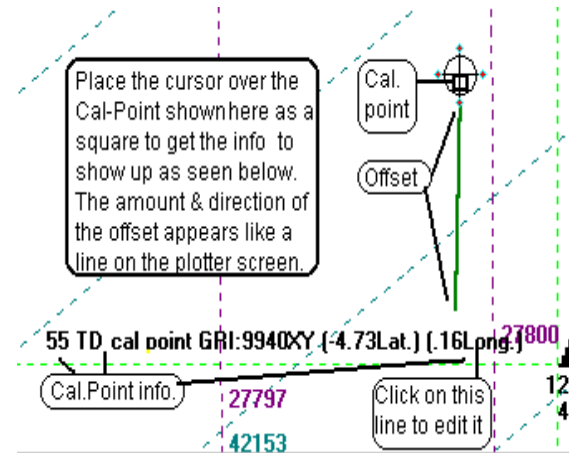
Any changes to the calibrations points description, line spacing, density, color, type of line, GRI and SLAVES are automatically put to the current calibration point when in the auto-grid mode as soon as you click on the *Apply* button in the convert TD to Lat/Log box. You can not however, change the reference point of any of the auto grid files. The only way to do that would be to delete the current file and start a new one **without exiting the grid setup**.

- 1 First, position the vessel or the cursor in the area where the calibration point is. Press **Ctrl-G** and click on *Show Points* button to see the calibration points on the screen and expand the plotter range if you have to.
- 2 Press **Ctrl-A** or click on *Options > Conv. TD to LL* to call the TD conv box.
- 3 If you need to set the GRI or Slaves, do so now by clicking the *Set GRI* button. Change the GRI and Slaves accordingly then make sure the Est. Lat/Long is correct.

- 4 Click on *Set Grid*
- 5 Click on *Apply* button for the changes you made to offsets, GRI or slaves to take effect.
- 6 Click on the *Exit* button and the calibration has been reset.

To edit a calibration point from the plot screen

By clicking on the “*Show Points*” button in the Loran Calibrator (**Ctrl-G**), you can visually see each calibration point as a box symbol, colored differently for each set of chain/slave combinations and the offsets for each depicted as a line. By placing the cursor over anyone of the boxes, you can see what the chain, slaves and actual Latitude/Longitude offsets are. Click this same readout to delete or move the calibration to a different file.



Turning the calibration point screen editor On or Off

- 1 Press **Ctrl-G** to call the calibration box.
- 2 Click the *Details* and then the *Show Points* button to turn the editor on
(or *Hide points* to turn off.)

The screen will redraw with boxes representing the calibration spots with white lines drawn out to zero compensation. Each box will be the same color if the GRI and Slaves are the same. Changing ranges will change box colors as more calibration points appear. It is best to do this with a black background so you can see them better.

Reading individual calibration point data

Turn on the cursor and place it over any calibration point. The calibration number, GRI, slave and offsets will display in the lower, middle of the screen.

Moving or Deleting a calibration point

Place the cursor on the calibration point to delete and click on its data display that appears in the mid-lower portion of the screen and click. Click on **Yes** to delete it, click on **No** to move it to another BIGTD file. If you decide to move it, you will be asked what file name to move it to. The file names allowed are BIGTD.DAT, BIGTD1.DAT, BIGTD2.DAT...BIGTD9.DAT.

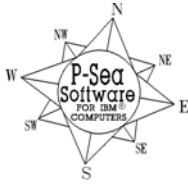
Turning the Grid on or off

- 1 Press **Ctrl-A** or click on *Options > Conv. TD to LL* to call the TD conv box.
- 2 Click on *Set Grid*.
- 3 If there is a button that says *AUTO* then click it so it says *MANUAL*.
- 4 Click the *TD Grid lines off* check box.
- 5 Click the *Exit* button.

NOTE: Turing the TD grid off also turns off any calibration offsets that are applied to marks made using TD's, present and cursor position TD readouts.

Classifying a mark/hang as a TD

When you enter a hang using TD's, the program converts it to Latitude and Longitude and that is what the computer uses to display the hang. Then, when you calibrate the area, a certain amount of Lat/Long is applied to offset any errors made in the conversion. Saving the present position as a hang/mark while using a GPS to drive the plotter must not have this offset applied to them or they will be in error. To accomplish the distinction between them we must identify which hangs were entered in TD's. This classification is actually done automatically when you do the conversion. Look at the mark search and edit list and you will note a column with “**TD**” as a header. Any mark with an “**X**” in this column is considered a TD by the program and offsets will be applied to these marks/hangs only. The computer tags this column when you enter a hang in TD's. Simply click on this column if you wish to change the TD classification of any hang but be careful not to X any hang made with a GPS.



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P-Sea WindPlot Ver.6.77 Loran Setup **(while connected to a GPS)**

Yes, you can efficiently use the plotter in full Loran-C mode while the program is connected to nothing but a GPS. This is not only true but a must if you want to continue using your TD hangs after Loran-C is shut down. When the program is properly setup, it will guide you back exactly over your old TD hangs. However, you must set it up BEFORE LORAN-C IS SHUT DOWN in order for it to be accurate. The reason for this is you will be using the readout from your Loran-C (it does not have to be connected to the program) to calibrate the plotter. It will require many calibrations as you move from area to area. It will be accurate ONLY in the areas you get calibrated. The program will save these calibrations and automatically call them back up as you go back to the areas you have already done.

Getting ready for calibration

If this is the first time you have used the program for Loran-C mode you will need to get a few things ready before you can calibrate it. First you must turn on the TD grid in order for the hangs you enter to be adjusted to the proper position. Second, you must setup the GRI and Slaves that you are use to using. Third, you must setup how you want the loran grid to be displayed. Fourth, you must set the plotters present position readout to show loran TD's.

1) Turn the TD Grid On

If the TD grid is not showing it will have to be turned on first. (Note: The grid lines never show up when WindPlot is first started. Change range once to get them to show)

- A Press and hold the **Ctrl** (control) key and tap on the key **G**. If your TD grid is off you will get a message box that says "The TD grid needs to be set to AUTO. Would you like this done for you?".
- B Click on "Yes" to turn the grid on. This will call the TD calibration dialog box. Click on "Cancel" at this point since we are not ready to do a calibration yet.

2) Set GRI and Slaves

If the GRI or Slaves are not the ones you normally use then you will need to set them up.

- A) Press **Ctrl-A** (hold the **Ctrl** key down then press the **A** key and let go) or click on *Options > Conv. TD to LL* to call the TD conv box.

Select only two of the slaves shown in this box

GRI SETUP	
Current GRI	
9940 U.S. WEST COAST CHAIN	
Slave Station Selection	
<input type="checkbox"/>	W 13796.9
<input checked="" type="checkbox"/>	X 28094.5
<input checked="" type="checkbox"/>	Y 41967.3
TD correction factors (Microseconds)	
X	0.00
Y	0.00
Est. Position (within 200 miles)	
Est. Latitude	35°22.000'N
Est. Longitude	120°54.000'W
<input type="checkbox"/>	Use Present Position

- B) Click on *Set GRI* button. A panel should drop down labeled "GRI SETUP".

- C) Select the "Current GRI" by clicking on the down arrow and then click on the desired chain that appears in the list. Set the slaves you desire in the "Slave Selection" box. You may need to click on the one slave you do not want in order to check the one you want.

- D) Click on *Set Grid* and then *Apply* buttons from the "TD Grid Setup" panel that drops down. The Apply button is located in the lower left of the "TD Grid Setup" box.

Click the "Exit" button and when the screen redraws, the TD lines for new GRI/Slaves should appear if they are turned on.

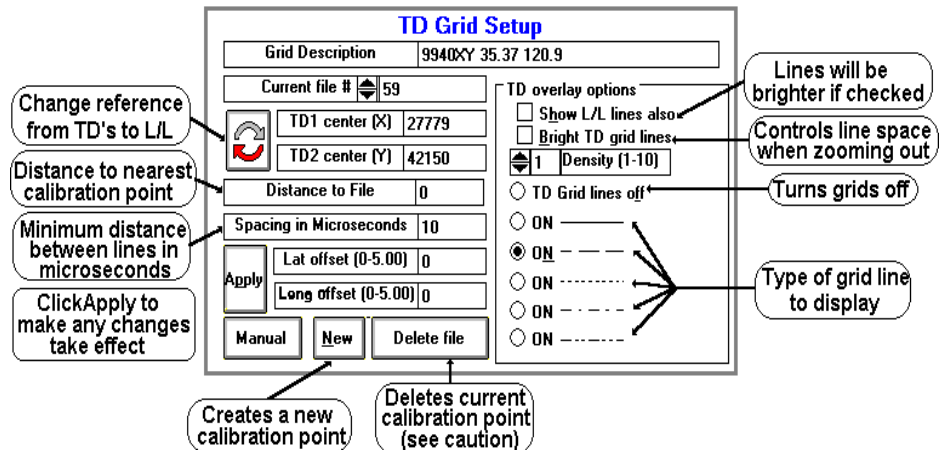
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Grid line spacing is set at 10 microseconds from the factory when zoomed to lower levels (you can change this). As you zoom out you will get more and more lines and it will take longer to draw them. A control is provided that will automatically change the grid line spacing as you zoom out in range. It is call the density control and it has a value you can set from 1-10. 10 being the most dense and 1 the least.

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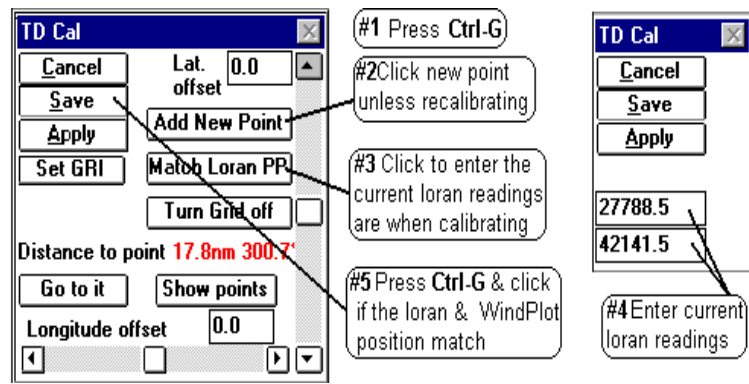
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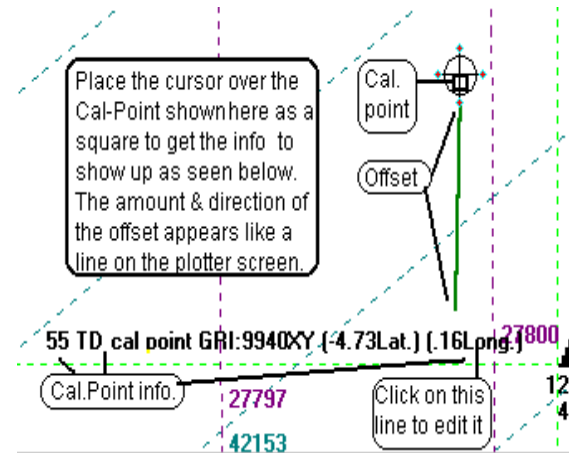
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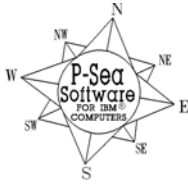
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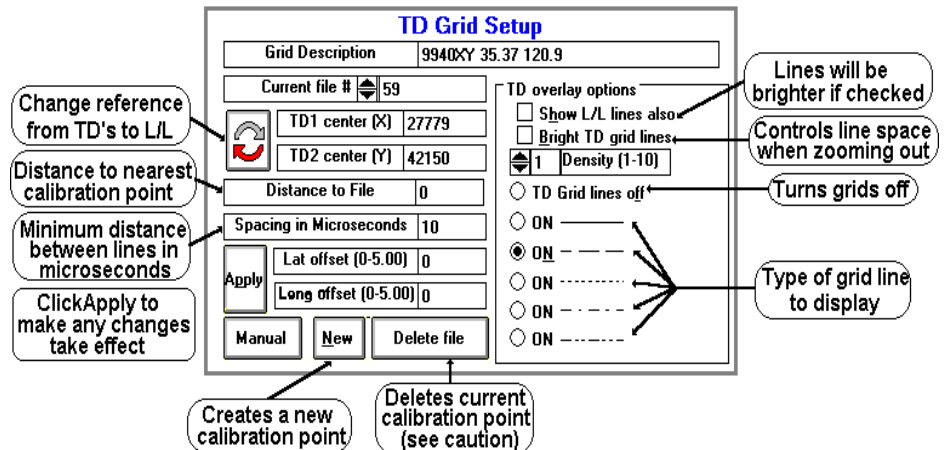
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4) Setting present position readout to Loran-C

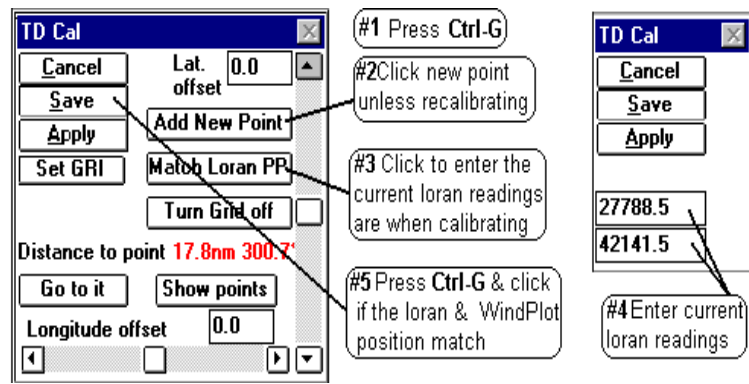
Click on the WindPlots Latitude readout. Select "No" when it asks if you want to set *Dead Reckoning*. In order for you to accurately calibrate your plotter for the proper TD positions, you must have the plotter setup to display what it thinks the TD position is. Doing so, you can monitor both what your loran and the Plotters TD's are. Then whenever they do not match within .2 to .3 microseconds, you can follow the procedure below and force the plotter to match your loran. When this is done the TD's are accurate. It is best to wait until there is at least .2 microseconds of difference before making a new calibration point. Loran's are known to flicker .1 microseconds and you would be putting down new points all of the time. After a while, your plotter would start to slow down when redrawing the screen as it searches for all of the calibrations while it is redrawing.

TD Calibration

There are two procedures used to for calibration points, either doing a NEW or RECALIBRATION point. Usually, if the loran does not match the plotter and your are in a an area you haven't calibrated before, you will want a NEW calibration point.

Loran calibration procedure (NEW point)

1 Get your vessel to the position where you need the calibration done. You can have as many calibration spots (32000 max). We suggest calibrating where the vessel's is tied up for the first point. Make sure your computer is running and all NAV devices are locked in and press **Ctrl-G**. This will switch the present position readout to TD's if not already done and call up the window show above..



- 2 Note the **Distance to point**. If this is more than 2 miles from you, click the "Add New Point" button to create a new calibration spot. Once you have calibrated an area, the computer automatically switches to the nearest spot so you do not have to recalibrate the same area again.
- 3 Click the "Match Loran PP" button and enter in the TD's that your loran is presently reading.
- 4 When both loran numbers are set in, press the **Enter** key.
- 5 If present position readout of the plotter matches your loran, press **Ctrl-G** and click on Save.
- Hint:** Try slowing down the boat if the numbers are changing too fast. Do not worry about creating a new calibration point unless you have traveled quite a ways.

Changing an existing calibration point

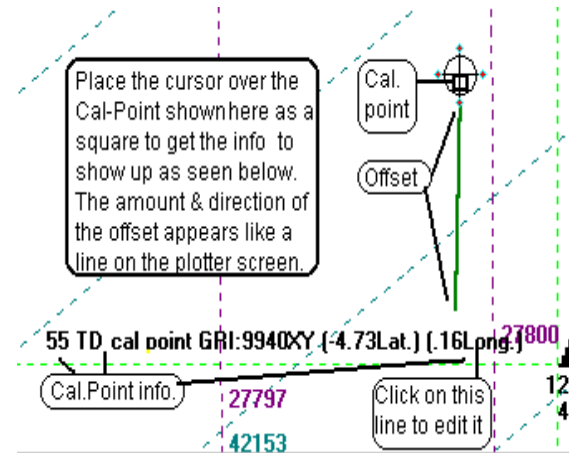
Any changes to the calibrations points description, line spacing, density, color, type of line, GRI and SLAVES are automatically put to the current calibration point when in the auto-grid mode as soon as you click on the *Apply* button in the convert TD to Lat/Log box. You can not however, change the reference point of any of the auto grid files. The only way to do that would be to delete the current file and start a new one **without exiting the grid setup**.

- 1 First, position the vessel or the cursor in the area where the calibration point is. Press **Ctrl-G** and click on *Show Points* button to see the calibration points on the screen and expand the plotter range if you have to.
- 2 Press **Ctrl-A** or click on *Options > Conv. TD to LL* to call the TD conv box.
- 3 If you need to set the GRI or Slaves, do so now by clicking the *Set GRI* button. Change the GRI and Slaves accordingly then make sure the Est. Lat/Long is correct.

- 4 Click on *Set Grid*
- 5 Click on *Apply* button for the changes you made to offsets, GRI or slaves to take effect.
- 6 Click on the *Exit* button and the calibration has been reset.

To edit a calibration point from the plot screen

By clicking on the “*Show Points*” button in the Loran Calibrator (**Ctrl-G**), you can visually see each calibration point as a box symbol, colored differently for each set of chain/slave combinations and the offsets for each depicted as a line. By placing the cursor over anyone of the boxes, you can see what the chain, slaves and actual Latitude/Longitude offsets are. Click this same readout to delete or move the calibration to a different file.



Turning the calibration point screen editor On or Off

- 1 Press **Ctrl-G** to call the calibration box.
- 2 Click the *Details* and then the *Show Points* button to turn the editor on
(or *Hide points* to turn off.)

The screen will redraw with boxes representing the calibration spots with white lines drawn out to zero compensation. Each box will be the same color if the GRI and Slaves are the same. Changing ranges will change box colors as more calibration points appear. It is best to do this with a black background so you can see them better.

Reading individual calibration point data

Turn on the cursor and place it over any calibration point. The calibration number, GRI, slave and offsets will display in the lower, middle of the screen.

Moving or Deleting a calibration point

Place the cursor on the calibration point to delete and click on its data display that appears in the mid-lower portion of the screen and click. Click on **Yes** to delete it, click on **No** to move it to another BIGTD file. If you decide to move it, you will be asked what file name to move it to. The file names allowed are BIGTD.DAT, BIGTD1.DAT, BIGTD2.DAT...BIGTD9.DAT.

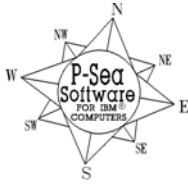
Turning the Grid on or off

- 1 Press **Ctrl-A** or click on *Options > Conv. TD to LL* to call the TD conv box.
- 2 Click on *Set Grid*.
- 3 If there is a button that says *AUTO* then click it so it says *MANUAL*.
- 4 Click the *TD Grid lines off* check box.
- 5 Click the *Exit* button.

NOTE: Turing the TD grid off also turns off any calibration offsets that are applied to marks made using TD's, present and cursor position TD readouts.

Classifying a mark/hang as a TD

When you enter a hang using TD's, the program converts it to Latitude and Longitude and that is what the computer uses to display the hang. Then, when you calibrate the area, a certain amount of Lat/Long is applied to offset any errors made in the conversion. Saving the present position as a hang/mark while using a GPS to drive the plotter must not have this offset applied to them or they will be in error. To accomplish the distinction between them we must identify which hangs were entered in TD's. This classification is actually done automatically when you do the conversion. Look at the mark search and edit list and you will note a column with “**TD**” as a header. Any mark with an “**X**” in this column is considered a TD by the program and offsets will be applied to these marks/hangs only. The computer tags this column when you enter a hang in TD's. Simply click on this column if you wish to change the TD classification of any hang but be careful not to X any hang made with a GPS.



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P-Sea WindPlot Ver.6.77 Loran Setup **(while connected to a GPS)**

Yes, you can efficiently use the plotter in full Loran-C mode while the program is connected to nothing but a GPS. This is not only true but a must if you want to continue using your TD hangs after Loran-C is shut down. When the program is properly setup, it will guide you back exactly over your old TD hangs. However, you must set it up BEFORE LORAN-C IS SHUT DOWN in order for it to be accurate. The reason for this is you will be using the readout from your Loran-C (it does not have to be connected to the program) to calibrate the plotter. It will require many calibrations as you move from area to area. It will be accurate ONLY in the areas you get calibrated. The program will save these calibrations and automatically call them back up as you go back to the areas you have already done.

Getting ready for calibration

If this is the first time you have used the program for Loran-C mode you will need to get a few things ready before you can calibrate it. First you must turn on the TD grid in order for the hangs you enter to be adjusted to the proper position. Second, you must setup the GRI and Slaves that you are use to using. Third, you must setup how you want the loran grid to be displayed. Fourth, you must set the plotters present position readout to show loran TD's.

1) Turn the TD Grid On

If the TD grid is not showing it will have to be turned on first. (Note: The grid lines never show up when WindPlot is first started. Change range once to get them to show)

- A Press and hold the **Ctrl** (control) key and tap on the key **G**. If your TD grid is off you will get a message box that says "The TD grid needs to be set to AUTO. Would you like this done for you?".
- B Click on "Yes" to turn the grid on. This will call the TD calibration dialog box. Click on "Cancel" at this point since we are not ready to do a calibration yet.

2) Set GRI and Slaves

If the GRI or Slaves are not the ones you normally use then you will need to set them up.

- A) Press **Ctrl-A** (hold the **Ctrl** key down then press the **A** key and let go) or click on *Options > Conv. TD to LL* to call the TD conv box.

Select only two of the slaves shown in this box

GRI SETUP	
Current GRI	
9940 U.S. WEST COAST CHAIN	
Slave Station Selection	
<input type="checkbox"/>	W 13796.9
<input checked="" type="checkbox"/>	X 28094.5
<input checked="" type="checkbox"/>	Y 41967.3
TD correction factors (Microseconds)	
X	0.00
Y	0.00
Est. Position (within 200 miles)	
Est. Latitude	35°22.000'N
Est. Longitude	120°54.000'W
<input type="checkbox"/> Use Present Position	

- B) Click on *Set GRI* button. A panel should drop down labeled "GRI SETUP".

- C) Select the "Current GRI" by clicking on the down arrow and then click on the desired chain that appears in the list. Set the slaves you desire in the "Slave Selection" box. You may need to click on the one slave you do not want in order to check the one you want.

- D) Click on *Set Grid* and then *Apply* buttons from the "TD Grid Setup" panel that drops down. The Apply button is located in the lower left of the "TD Grid Setup" box.

Click the "Exit" button and when the screen redraws, the TD lines for new GRI/Slaves should appear if they are turned on.

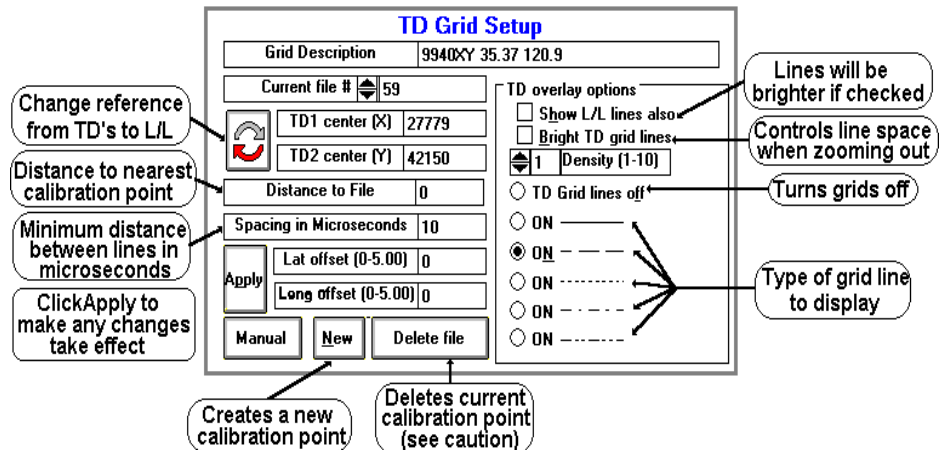
3) Adjusting the Grid line type, color, spacing and density

You have some control of how your grid lines are displayed. The way it is going to be setup will depend on what type of charts you want to display and your own personal preferences.

The setup window

TD line setup is all controlled from the "TD Grid Setup" window as seen below.

To call this window from the menu bar select "Convert TD to LL" item in the "Options" menu (or by pressing **Ctrl-A**). Then click the "Set Grid" button located in the lower right and window will expand downward to display the *TD Grid Setup* window.



Adjusting type of grid lines

To change the type of grid line call the *TD Grid Setup window* (press **Ctrl-A** then click the *Set Grid* button). You can adjust the type of line (dashed, solid, dotted...) you want simply by clicking on the appropriate option button located in front of the example in the *TD Grid Setup* window. Then click the *Apply* button located in the left section of the window and then click the "Exit" button.

Adjusting TD line brightens

The program is set using the standard TD line colors. You can only make them either bright or normal. When using BSB/Maptech charts, you will most likely want them bright. When using Vector charts you may want them at normal brightens.

To change brightness call the *TD Grid Setup window* (press **Ctrl-A** then click the *Set Grid* button). Click the second option on the right labeled **Bright TD grid lines** to change brightness or the lines. The lines will be brighter than normal when this option is checked.

Adjusting the TD grid line spacing

The spacing between the lines can be changed and it is based in microseconds. To change the spacing, call the *TD Grid Setup window* (press **Ctrl-A** then click the *Set Grid* button). Locate the box labeled "Spacing in Microseconds" and click on the white box to the right of it. Use the keyboard to enter in a number in whole microseconds then click the "Apply" button located just below it and then click the "Exit" button.

Adjusting TD grid line density

Grid line spacing is set at 10 microseconds from the factory when zoomed to lower levels (you can change this). As you zoom out you will get more and more lines and it will take longer to draw them. A control is provided that will automatically change the grid line spacing as you zoom out in range. It is call the density control and it has a value you can set from 1-10. 10 being the most dense and 1 the least.

To adjust the density call the *TD Grid Setup window* (press **Ctrl-A** then click the *Set Grid* button). Click the up or down arrows located near the middle that is labeled "Density (1-10)" to change the setting. Click the "Apply" button and then click the "Exit" button. We suggest you start with 3 and see how you like it.

4) Setting present position readout to Loran-C

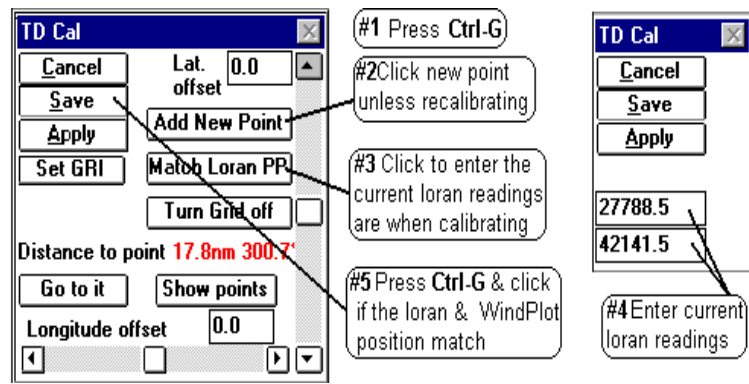
Click on the WindPlots Latitude readout. Select "No" when it asks if you want to set *Dead Reckoning*. In order for you to accurately calibrate your plotter for the proper TD positions, you must have the plotter setup to display what it thinks the TD position is. Doing so, you can monitor both what your loran and the Plotters TD's are. Then whenever they do not match within .2 to .3 microseconds, you can follow the procedure below and force the plotter to match your loran. When this is done the TD's are accurate. It is best to wait until there is at least .2 microseconds of difference before making a new calibration point. Loran's are known to flicker .1 microseconds and you would be putting down new points all of the time. After a while, your plotter would start to slow down when redrawing the screen as it searches for all of the calibrations while it is redrawing.

TD Calibration

There are two procedures used to for calibration points, either doing a NEW or RECALIBRATION point. Usually, if the loran does not match the plotter and your are in a an area you haven't calibrated before, you will want a NEW calibration point.

Loran calibration procedure (NEW point)

1 Get your vessel to the position where you need the calibration done. You can have as many calibration spots (32000 max). We suggest calibrating where the vessel's is tied up for the first point. Make sure your computer is running and all NAV devices are locked in and press **Ctrl-G**. This will switch the present position readout to TD's if not already done and call up the window show above..



- 2 Note the **Distance to point**. If this is more than 2 miles from you, click the "Add New Point" button to create a new calibration spot. Once you have calibrated an area, the computer automatically switches to the nearest spot so you do not have to recalibrate the same area again.
- 3 Click the "Match Loran PP" button and enter in the TD's that your loran is presently reading.
- 4 When both loran numbers are set in, press the **Enter** key.
- 5 If present position readout of the plotter matches your loran, press **Ctrl-G** and click on Save.
- Hint:** Try slowing down the boat if the numbers are changing too fast. Do not worry about creating a new calibration point unless you have traveled quite a ways.

Changing an existing calibration point

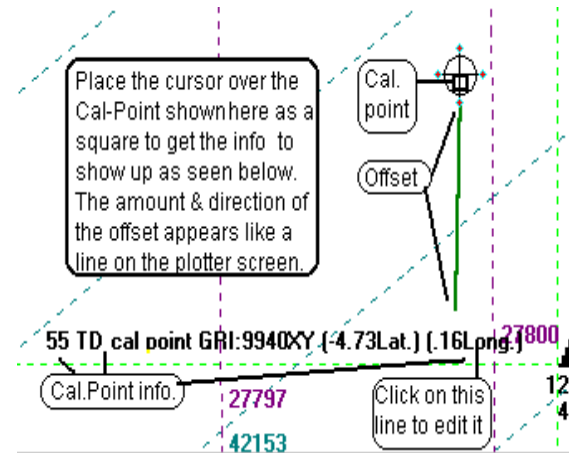
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- 2 Press **Ctrl-A** or click on *Options > Conv. TD to LL* to call the TD conv box.
- 3 If you need to set the GRI or Slaves, do so now by clicking the *Set GRI* button. Change the GRI and Slaves accordingly then make sure the Est. Lat/Long is correct.

- 4 Click on *Set Grid*
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Turning the calibration point screen editor On or Off

- 1 Press **Ctrl-G** to call the calibration box.
- 2 Click the *Details* and then the *Show Points* button to turn the editor on
(or *Hide points* to turn off.)

The screen will redraw with boxes representing the calibration spots with white lines drawn out to zero compensation. Each box will be the same color if the GRI and Slaves are the same. Changing ranges will change box colors as more calibration points appear. It is best to do this with a black background so you can see them better.

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Turn on the cursor and place it over any calibration point. The calibration number, GRI, slave and offsets will display in the lower, middle of the screen.

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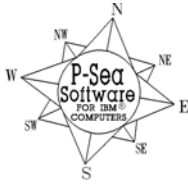
Turning the Grid on or off

- 1 Press **Ctrl-A** or click on *Options > Conv. TD to LL* to call the TD conv box.
- 2 Click on *Set Grid*.
- 3 If there is a button that says *AUTO* then click it so it says *MANUAL*.
- 4 Click the *TD Grid lines off* check box.
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When you enter a hang using TD's, the program converts it to Latitude and Longitude and that is what the computer uses to display the hang. Then, when you calibrate the area, a certain amount of Lat/Long is applied to offset any errors made in the conversion. Saving the present position as a hang/mark while using a GPS to drive the plotter must not have this offset applied to them or they will be in error. To accomplish the distinction between them we must identify which hangs were entered in TD's. This classification is actually done automatically when you do the conversion. Look at the mark search and edit list and you will note a column with “**TD**” as a header. Any mark with an “**X**” in this column is considered a TD by the program and offsets will be applied to these marks/hangs only. The computer tags this column when you enter a hang in TD's. Simply click on this column if you wish to change the TD classification of any hang but be careful not to X any hang made with a GPS.



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1) Turn the TD Grid On

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- A Press and hold the **Ctrl** (control) key and tap on the key **G**. If your TD grid is off you will get a message box that says "The TD grid needs to be set to AUTO. Would you like this done for you?".
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9940 U.S. WEST COAST CHAIN	
Slave Station Selection	
<input type="checkbox"/>	W 13796.9
<input checked="" type="checkbox"/>	X 28094.5
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TD correction factors (Microseconds)	
X	0.00
Y	0.00
Est. Position (within 200 miles)	
Est. Latitude	35°22.000'N
Est. Longitude	120°54.000'W
<input type="checkbox"/> Use Present Position	
Setup TD grid	

- B) Click on *Set GRI* button. A panel should drop down labeled "GRI SETUP".

- C) Select the "Current GRI" by clicking on the down arrow and then click on the desired chain that appears in the list. Set the slaves you desire in the "Slave Selection" box. You may need to click on the one slave you do not want in order to check the one you want.

- D) Click on *Set Grid* and then *Apply* buttons from the "TD Grid Setup" panel that drops down. The Apply button is located in the lower left of the "TD Grid Setup" box.

Click the "Exit" button and when the screen redraws, the TD lines for new GRI/Slaves should appear if they are turned on.

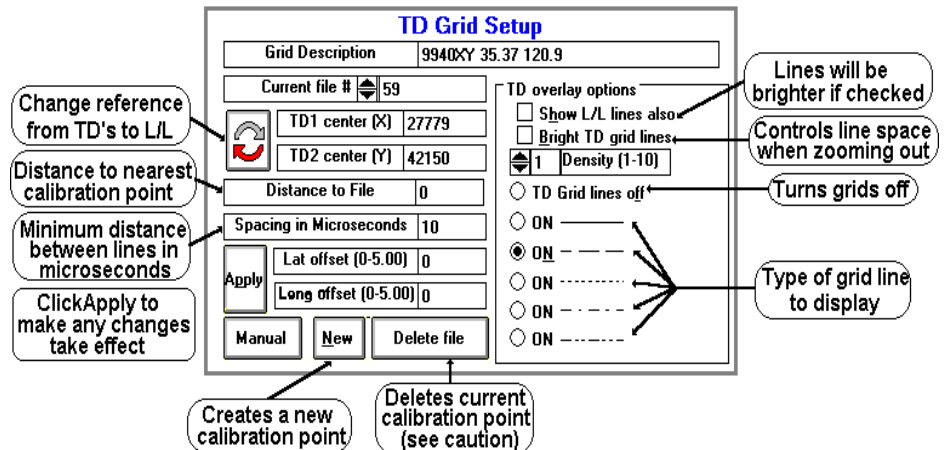
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Adjusting TD grid line density

Grid line spacing is set at 10 microseconds from the factory when zoomed to lower levels (you can change this). As you zoom out you will get more and more lines and it will take longer to draw them. A control is provided that will automatically change the grid line spacing as you zoom out in range. It is call the density control and it has a value you can set from 1-10. 10 being the most dense and 1 the least.

To adjust the density call the *TD Grid Setup window* (press **Ctrl-A** then click the *Set Grid* button). Click the up or down arrows located near the middle that is labeled "Density (1-10)" to change the setting. Click the "Apply" button and then click the "Exit" button. We suggest you start with 3 and see how you like it.

4) Setting present position readout to Loran-C

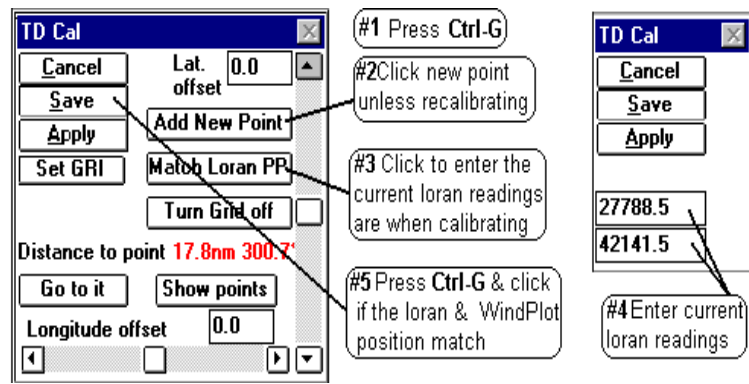
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- 3 Click the "Match Loran PP" button and enter in the TD's that your loran is presently reading.
- 4 When both loran numbers are set in, press the **Enter** key.
- 5 If present position readout of the plotter matches your loran, press **Ctrl-G** and click on **Save**.
- Hint:** Try slowing down the boat if the numbers are changing too fast. Do not worry about creating a new calibration point unless you have traveled quite a ways.

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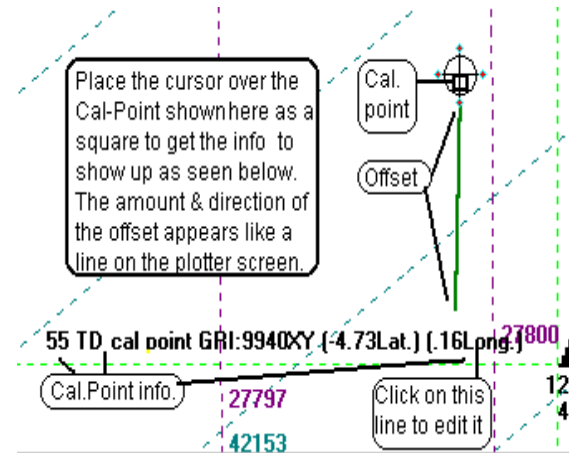
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- 4 Click on *Set Grid*
- 5 Click on *Apply* button for the changes you made to offsets, GRI or slaves to take effect.
- 6 Click on the *Exit* button and the calibration has been reset.

To edit a calibration point from the plot screen

By clicking on the “*Show Points*” button in the Loran Calibrator (**Ctrl-G**), you can visually see each calibration point as a box symbol, colored differently for each set of chain/slave combinations and the offsets for each depicted as a line. By placing the cursor over anyone of the boxes, you can see what the chain, slaves and actual Latitude/Longitude offsets are. Click this same readout to delete or move the calibration to a different file.



Turning the calibration point screen editor On or Off

- 1 Press **Ctrl-G** to call the calibration box.
- 2 Click the *Details* and then the *Show Points* button to turn the editor on
(or *Hide points* to turn off.)

The screen will redraw with boxes representing the calibration spots with white lines drawn out to zero compensation. Each box will be the same color if the GRI and Slaves are the same. Changing ranges will change box colors as more calibration points appear. It is best to do this with a black background so you can see them better.

Reading individual calibration point data

Turn on the cursor and place it over any calibration point. The calibration number, GRI, slave and offsets will display in the lower, middle of the screen.

Moving or Deleting a calibration point

Place the cursor on the calibration point to delete and click on its data display that appears in the mid-lower portion of the screen and click. Click on **Yes** to delete it, click on **No** to move it to another BIGTD file. If you decide to move it, you will be asked what file name to move it to. The file names allowed are BIGTD.DAT, BIGTD1.DAT, BIGTD2.DAT...BIGTD9.DAT.

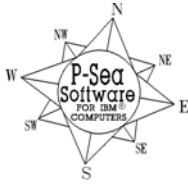
Turning the Grid on or off

- 1 Press **Ctrl-A** or click on *Options > Conv. TD to LL* to call the TD conv box.
- 2 Click on *Set Grid*.
- 3 If there is a button that says *AUTO* then click it so it says *MANUAL*.
- 4 Click the *TD Grid lines off* check box.
- 5 Click the *Exit* button.

NOTE: Turing the TD grid off also turns off any calibration offsets that are applied to marks made using TD's, present and cursor position TD readouts.

Classifying a mark/hang as a TD

When you enter a hang using TD's, the program converts it to Latitude and Longitude and that is what the computer uses to display the hang. Then, when you calibrate the area, a certain amount of Lat/Long is applied to offset any errors made in the conversion. Saving the present position as a hang/mark while using a GPS to drive the plotter must not have this offset applied to them or they will be in error. To accomplish the distinction between them we must identify which hangs were entered in TD's. This classification is actually done automatically when you do the conversion. Look at the mark search and edit list and you will note a column with “**TD**” as a header. Any mark with an “**X**” in this column is considered a TD by the program and offsets will be applied to these marks/hangs only. The computer tags this column when you enter a hang in TD's. Simply click on this column if you wish to change the TD classification of any hang but be careful not to X any hang made with a GPS.



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P-Sea WindPlot Ver.6.77 Loran Setup **(while connected to a GPS)**

Yes, you can efficiently use the plotter in full Loran-C mode while the program is connected to nothing but a GPS. This is not only true but a must if you want to continue using your TD hangs after Loran-C is shut down. When the program is properly setup, it will guide you back exactly over your old TD hangs. However, you must set it up BEFORE LORAN-C IS SHUT DOWN in order for it to be accurate. The reason for this is you will be using the readout from your Loran-C (it does not have to be connected to the program) to calibrate the plotter. It will require many calibrations as you move from area to area. It will be accurate ONLY in the areas you get calibrated. The program will save these calibrations and automatically call them back up as you go back to the areas you have already done.

Getting ready for calibration

If this is the first time you have used the program for Loran-C mode you will need to get a few things ready before you can calibrate it. First you must turn on the TD grid in order for the hangs you enter to be adjusted to the proper position. Second, you must setup the GRI and Slaves that you are use to using. Third, you must setup how you want the loran grid to be displayed. Fourth, you must set the plotters present position readout to show loran TD's.

1) Turn the TD Grid On

If the TD grid is not showing it will have to be turned on first. (Note: The grid lines never show up when WindPlot is first started. Change range once to get them to show)

- A Press and hold the **Ctrl** (control) key and tap on the key **G**. If your TD grid is off you will get a message box that says "The TD grid needs to be set to AUTO. Would you like this done for you?".
- B Click on "Yes" to turn the grid on. This will call the TD calibration dialog box. Click on "Cancel" at this point since we are not ready to do a calibration yet.

2) Set GRI and Slaves

If the GRI or Slaves are not the ones you normally use then you will need to set them up.

- A) Press **Ctrl-A** (hold the **Ctrl** key down then press the **A** key and let go) or click on *Options > Conv. TD to LL* to call the TD conv box.

Select only two of the slaves shown in this box

GRI SETUP	
Current GRI	
9940 U.S. WEST COAST CHAIN	
Slave Station Selection	
<input type="checkbox"/>	W 13796.9
<input checked="" type="checkbox"/>	X 28094.5
<input checked="" type="checkbox"/>	Y 41967.3
TD correction factors (Microseconds)	
X	0.00
Y	0.00
Est. Position (within 200 miles)	
Est. Latitude	35°22.000'N
Est. Longitude	120°54.000'W
<input type="checkbox"/> Use Present Position	
Setup TD grid	

- B) Click on *Set GRI* button. A panel should drop down labeled "GRI SETUP".

- C) Select the "Current GRI" by clicking on the down arrow and then click on the desired chain that appears in the list. Set the slaves you desire in the "Slave Selection" box. You may need to click on the one slave you do not want in order to check the one you want.

- D) Click on *Set Grid* and then *Apply* buttons from the "TD Grid Setup" panel that drops down. The Apply button is located in the lower left of the "TD Grid Setup" box.

Click the "Exit" button and when the screen redraws, the TD lines for new GRI/Slaves should appear if they are turned on.

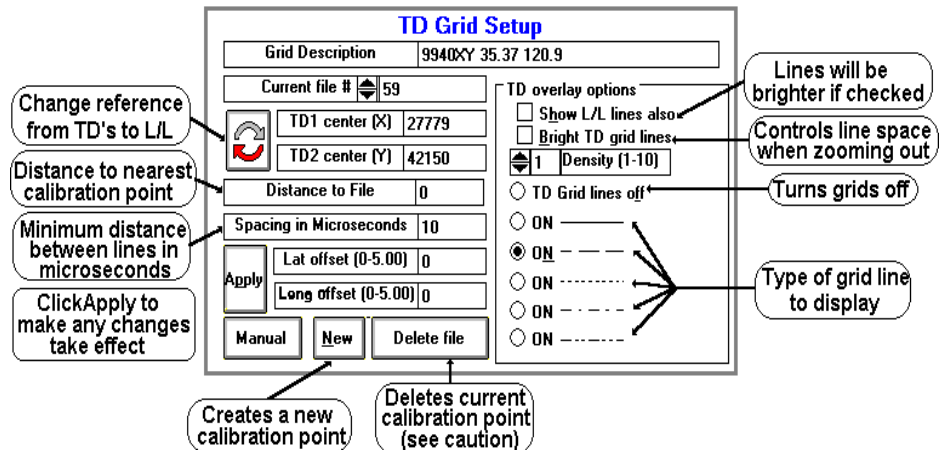
3) Adjusting the Grid line type, color, spacing and density

You have some control of how your grid lines are displayed. The way it is going to be setup will depend on what type of charts you want to display and your own personal preferences.

The setup window

TD line setup is all controlled from the "TD Grid Setup" window as seen below.

To call this window from the menu bar select "Convert TD to LL" item in the "Options" menu (or by pressing **Ctrl-A**). Then click the "Set Grid" button located in the lower right and window will expand downward to display the *TD Grid Setup* window.



Adjusting type of grid lines

To change the type of grid line call the *TD Grid Setup window* (press **Ctrl-A** then click the *Set Grid* button). You can adjust the type of line (dashed, solid, dotted...) you want simply by clicking on the appropriate option button located in front of the example in the *TD Grid Setup* window. Then click the *Apply* button located in the left section of the window and then click the "Exit" button.

Adjusting TD line brightens

The program is set using the standard TD line colors. You can only make them either bright or normal. When using BSB/Maptech charts, you will most likely want them bright. When using Vector charts you may want them at normal brightens.

To change brightness call the *TD Grid Setup window* (press **Ctrl-A** then click the *Set Grid* button). Click the second option on the right labeled **Bright TD grid lines** to change brightness or the lines. The lines will be brighter than normal when this option is checked.

Adjusting the TD grid line spacing

The spacing between the lines can be changed and it is based in microseconds. To change the spacing, call the *TD Grid Setup window* (press **Ctrl-A** then click the *Set Grid* button). Locate the box labeled "Spacing in Microseconds" and click on the white box to the right of it. Use the keyboard to enter in a number in whole microseconds then click the "Apply" button located just below it and then click the "Exit" button.

Adjusting TD grid line density

Grid line spacing is set at 10 microseconds from the factory when zoomed to lower levels (you can change this). As you zoom out you will get more and more lines and it will take longer to draw them. A control is provided that will automatically change the grid line spacing as you zoom out in range. It is call the density control and it has a value you can set from 1-10. 10 being the most dense and 1 the least.

To adjust the density call the *TD Grid Setup window* (press **Ctrl-A** then click the *Set Grid* button). Click the up or down arrows located near the middle that is labeled "Density (1-10)" to change the setting. Click the "Apply" button and then click the "Exit" button. We suggest you start with 3 and see how you like it.

4) Setting present position readout to Loran-C

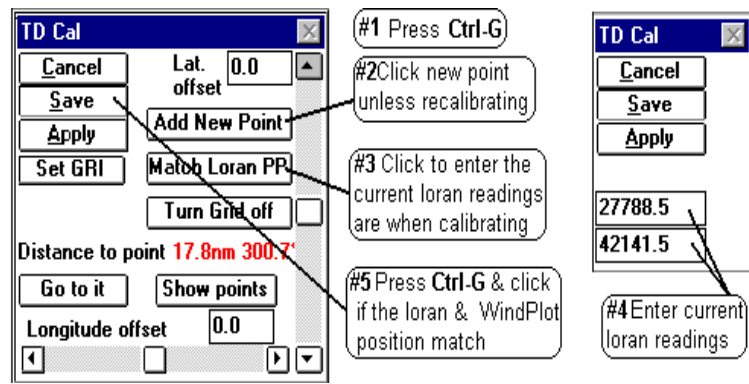
Click on the WindPlots Latitude readout. Select "No" when it asks if you want to set *Dead Reckoning*. In order for you to accurately calibrate your plotter for the proper TD positions, you must have the plotter setup to display what it thinks the TD position is. Doing so, you can monitor both what your loran and the Plotters TD's are. Then whenever they do not match within .2 to .3 microseconds, you can follow the procedure below and force the plotter to match your loran. When this is done the TD's are accurate. It is best to wait until there is at least .2 microseconds of difference before making a new calibration point. Loran's are known to flicker .1 microseconds and you would be putting down new points all of the time. After a while, your plotter would start to slow down when redrawing the screen as it searches for all of the calibrations while it is redrawing.

TD Calibration

There are two procedures used to for calibration points, either doing a NEW or RECALIBRATION point. Usually, if the loran does not match the plotter and your are in a an area you haven't calibrated before, you will want a NEW calibration point.

Loran calibration procedure (NEW point)

1 Get your vessel to the position where you need the calibration done. You can have as many calibration spots (32000 max). We suggest calibrating where the vessel's is tied up for the first point. Make sure your computer is running and all NAV devices are locked in and press **Ctrl-G**. This will switch the present position readout to TD's if not already done and call up the window show above..



- 2 Note the **Distance to point**. If this is more than 2 miles from you, click the "Add New Point" button to create a new calibration spot. Once you have calibrated an area, the computer automatically switches to the nearest spot so you do not have to recalibrate the same area again.
- 3 Click the "Match Loran PP" button and enter in the TD's that your loran is presently reading.
- 4 When both loran numbers are set in, press the **Enter** key.
- 5 If present position readout of the plotter matches your loran, press **Ctrl-G** and click on Save.

Hint: Try slowing down the boat if the numbers are changing too fast. Do not worry about creating a new calibration point unless you have traveled quite a ways.

Changing an existing calibration point

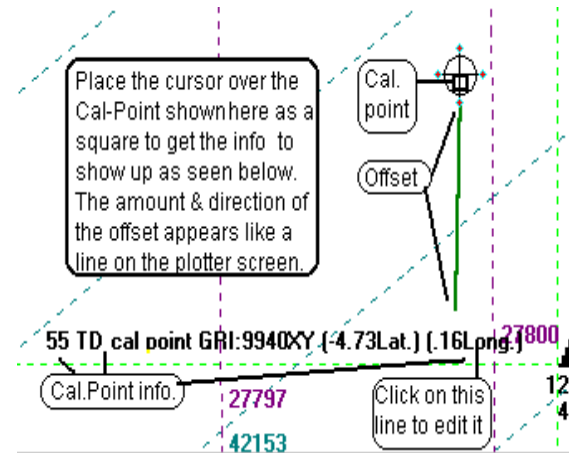
Any changes to the calibrations points description, line spacing, density, color, type of line, GRI and SLAVES are automatically put to the current calibration point when in the auto-grid mode as soon as you click on the *Apply* button in the convert TD to Lat/Log box. You can not however, change the reference point of any of the auto grid files. The only way to do that would be to delete the current file and start a new one **without exiting the grid setup**.

- 1 First, position the vessel or the cursor in the area where the calibration point is. Press **Ctrl-G** and click on *Show Points* button to see the calibration points on the screen and expand the plotter range if you have to.
- 2 Press **Ctrl-A** or click on *Options > Conv. TD to LL* to call the TD conv box.
- 3 If you need to set the GRI or Slaves, do so now by clicking the *Set GRI* button. Change the GRI and Slaves accordingly then make sure the Est. Lat/Long is correct.

- 4 Click on *Set Grid*
- 5 Click on *Apply* button for the changes you made to offsets, GRI or slaves to take effect.
- 6 Click on the *Exit* button and the calibration has been reset.

To edit a calibration point from the plot screen

By clicking on the “*Show Points*” button in the Loran Calibrator (**Ctrl-G**), you can visually see each calibration point as a box symbol, colored differently for each set of chain/slave combinations and the offsets for each depicted as a line. By placing the cursor over anyone of the boxes, you can see what the chain, slaves and actual Latitude/Longitude offsets are. Click this same readout to delete or move the calibration to a different file.



Turning the calibration point screen editor On or Off

- 1 Press **Ctrl-G** to call the calibration box.
- 2 Click the *Details* and then the *Show Points* button to turn the editor on
(or *Hide points* to turn off.)

The screen will redraw with boxes representing the calibration spots with white lines drawn out to zero compensation. Each box will be the same color if the GRI and Slaves are the same. Changing ranges will change box colors as more calibration points appear. It is best to do this with a black background so you can see them better.

Reading individual calibration point data

Turn on the cursor and place it over any calibration point. The calibration number, GRI, slave and offsets will display in the lower, middle of the screen.

Moving or Deleting a calibration point

Place the cursor on the calibration point to delete and click on its data display that appears in the mid-lower portion of the screen and click. Click on **Yes** to delete it, click on **No** to move it to another BIGTD file. If you decide to move it, you will be asked what file name to move it to. The file names allowed are BIGTD.DAT, BIGTD1.DAT, BIGTD2.DAT...BIGTD9.DAT.

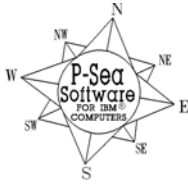
Turning the Grid on or off

- 1 Press **Ctrl-A** or click on *Options > Conv. TD to LL* to call the TD conv box.
- 2 Click on *Set Grid*.
- 3 If there is a button that says *AUTO* then click it so it says *MANUAL*.
- 4 Click the *TD Grid lines off* check box.
- 5 Click the *Exit* button.

NOTE: Turing the TD grid off also turns off any calibration offsets that are applied to marks made using TD's, present and cursor position TD readouts.

Classifying a mark/hang as a TD

When you enter a hang using TD's, the program converts it to Latitude and Longitude and that is what the computer uses to display the hang. Then, when you calibrate the area, a certain amount of Lat/Long is applied to offset any errors made in the conversion. Saving the present position as a hang/mark while using a GPS to drive the plotter must not have this offset applied to them or they will be in error. To accomplish the distinction between them we must identify which hangs were entered in TD's. This classification is actually done automatically when you do the conversion. Look at the mark search and edit list and you will note a column with “**TD**” as a header. Any mark with an “**X**” in this column is considered a TD by the program and offsets will be applied to these marks/hangs only. The computer tags this column when you enter a hang in TD's. Simply click on this column if you wish to change the TD classification of any hang but be careful not to X any hang made with a GPS.



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P-Sea WindPlot Ver.6.77 Loran Setup **(while connected to a GPS)**

Yes, you can efficiently use the plotter in full Loran-C mode while the program is connected to nothing but a GPS. This is not only true but a must if you want to continue using your TD hangs after Loran-C is shut down. When the program is properly setup, it will guide you back exactly over your old TD hangs. However, you must set it up BEFORE LORAN-C IS SHUT DOWN in order for it to be accurate. The reason for this is you will be using the readout from your Loran-C (it does not have to be connected to the program) to calibrate the plotter. It will require many calibrations as you move from area to area. It will be accurate ONLY in the areas you get calibrated. The program will save these calibrations and automatically call them back up as you go back to the areas you have already done.

Getting ready for calibration

If this is the first time you have used the program for Loran-C mode you will need to get a few things ready before you can calibrate it. First you must turn on the TD grid in order for the hangs you enter to be adjusted to the proper position. Second, you must setup the GRI and Slaves that you are use to using. Third, you must setup how you want the loran grid to be displayed. Fourth, you must set the plotters present position readout to show loran TD's.

1) Turn the TD Grid On

If the TD grid is not showing it will have to be turned on first. (Note: The grid lines never show up when WindPlot is first started. Change range once to get them to show)

- A Press and hold the **Ctrl** (control) key and tap on the key **G**. If your TD grid is off you will get a message box that says "The TD grid needs to be set to AUTO. Would you like this done for you?".
- B Click on "Yes" to turn the grid on. This will call the TD calibration dialog box. Click on "Cancel" at this point since we are not ready to do a calibration yet.

2) Set GRI and Slaves

If the GRI or Slaves are not the ones you normally use then you will need to set them up.

- A) Press **Ctrl-A** (hold the **Ctrl** key down then press the **A** key and let go) or click on *Options > Conv. TD to LL* to call the TD conv box.

Select only two of the slaves shown in this box

GRI SETUP	
Current GRI	
9940 U.S. WEST COAST CHAIN	
Slave Station Selection	
<input type="checkbox"/>	W 13796.9
<input checked="" type="checkbox"/>	X 28094.5
<input checked="" type="checkbox"/>	Y 41967.3
TD correction factors (Microseconds)	
X	0.00
Y	0.00
Est. Position (within 200 miles)	
Est. Latitude	35°22.000'N
Est. Longitude	120°54.000'W
<input type="checkbox"/>	Use Present Position
Setup TD grid	

- B) Click on *Set GRI* button. A panel should drop down labeled "GRI SETUP".
- C) Select the "Current GRI" by clicking on the down arrow and then click on the desired chain that appears in the list. Set the slaves you desire in the "Slave Selection" box. You may need to click on the one slave you do not want in order to check the one you want.
- D) Click on *Set Grid and* then *Apply* buttons from the "TD Grid Setup" panel that drops down. The Apply button is located in the lower left of the "TD Grid Setup" box. Click the "Exit" button and when the screen redraws, the TD lines for new GRI/Slaves should appear if they are turned on.

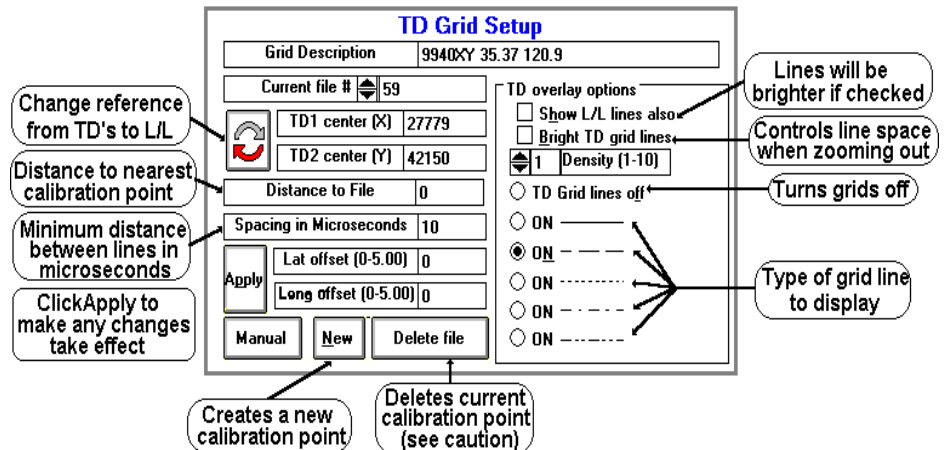
3) Adjusting the Grid line type, color, spacing and density

You have some control of how your grid lines are displayed. The way it is going to be setup will depend on what type of charts you want to display and your own personal preferences.

The setup window

TD line setup is all controlled from the "TD Grid Setup" window as seen below.

To call this window from the menu bar select "Convert TD to LL" item in the "Options" menu (or by pressing **Ctrl-A**). Then click the "Set Grid" button located in the lower right and window will expand downward to display the *TD Grid Setup* window.



Adjusting type of grid lines

To change the type of grid line call the *TD Grid Setup window* (press **Ctrl-A** then click the *Set Grid* button). You can adjust the type of line (dashed, solid, dotted...) you want simply by clicking on the appropriate option button located in front of the example in the *TD Grid Setup* window. Then click the *Apply* button located in the left section of the window and then click the "Exit" button.

Adjusting TD line brightens

The program is set using the standard TD line colors. You can only make them either bright or normal. When using BSB/Maptech charts, you will most likely want them bright. When using Vector charts you may want them at normal brightens.

To change brightness call the *TD Grid Setup window* (press **Ctrl-A** then click the *Set Grid* button). Click the second option on the right labeled **Bright TD grid lines** to change brightness or the lines. The lines will be brighter than normal when this option is checked.

Adjusting the TD grid line spacing

The spacing between the lines can be changed and it is based in microseconds. To change the spacing, call the *TD Grid Setup window* (press **Ctrl-A** then click the *Set Grid* button). Locate the box labeled "Spacing in Microseconds" and click on the white box to the right of it. Use the keyboard to enter in a number in whole microseconds then click the "Apply" button located just below it and then click the "Exit" button.

Adjusting TD grid line density

Grid line spacing is set at 10 microseconds from the factory when zoomed to lower levels (you can change this). As you zoom out you will get more and more lines and it will take longer to draw them. A control is provided that will automatically change the grid line spacing as you zoom out in range. It is call the density control and it has a value you can set from 1-10. 10 being the most dense and 1 the least.

To adjust the density call the *TD Grid Setup window* (press **Ctrl-A** then click the *Set Grid* button). Click the up or down arrows located near the middle that is labeled "Density (1-10)" to change the setting. Click the "Apply" button and then click the "Exit" button. We suggest you start with 3 and see how you like it.

4) Setting present position readout to Loran-C

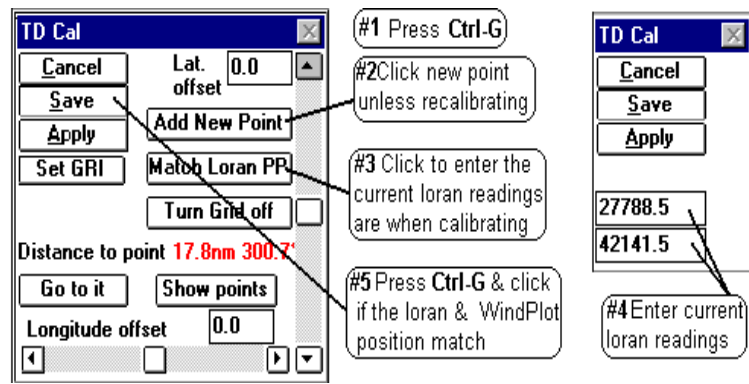
Click on the WindPlots Latitude readout. Select "No" when it asks if you want to set *Dead Reckoning*. In order for you to accurately calibrate your plotter for the proper TD positions, you must have the plotter setup to display what it thinks the TD position is. Doing so, you can monitor both what your loran and the Plotters TD's are. Then whenever they do not match within .2 to .3 microseconds, you can follow the procedure below and force the plotter to match your loran. When this is done the TD's are accurate. It is best to wait until there is at least .2 microseconds of difference before making a new calibration point. Loran's are known to flicker .1 microseconds and you would be putting down new points all of the time. After a while, your plotter would start to slow down when redrawing the screen as it searches for all of the calibrations while it is redrawing.

TD Calibration

There are two procedures used to for calibration points, either doing a NEW or RECALIBRATION point. Usually, if the loran does not match the plotter and your are in a an area you haven't calibrated before, you will want a NEW calibration point.

Loran calibration procedure (NEW point)

1 Get your vessel to the position where you need the calibration done. You can have as many calibration spots (32000 max). We suggest calibrating where the vessel's is tied up for the first point. Make sure your computer is running and all NAV devices are locked in and press **Ctrl-G**. This will switch the present position readout to TD's if not already done and call up the window show above..



- 2 Note the **Distance to point**. If this is more than 2 miles from you, click the "Add New Point" button to create a new calibration spot. Once you have calibrated an area, the computer automatically switches to the nearest spot so you do not have to recalibrate the same area again.
- 3 Click the "Match Loran PP" button and enter in the TD's that your loran is presently reading.
- 4 When both loran numbers are set in, press the **Enter** key.

5 If present position readout of the plotter matches your loran, press **Ctrl-G** and click on Save.

Hint: Try slowing down the boat if the numbers are changing too fast. Do not worry about creating a new calibration point unless you have traveled quite a ways.

Changing an existing calibration point

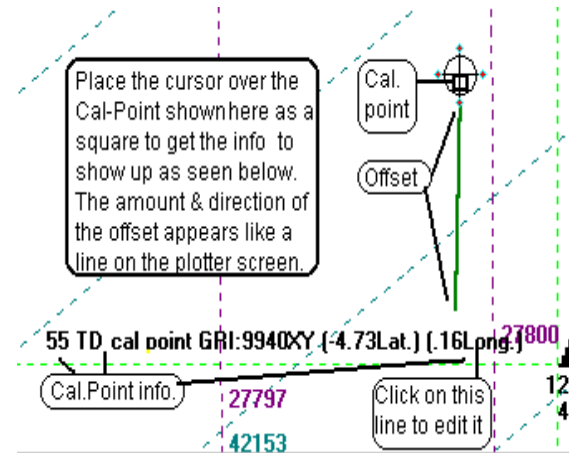
Any changes to the calibrations points description, line spacing, density, color, type of line, GRI and SLAVES are automatically put to the current calibration point when in the auto-grid mode as soon as you click on the *Apply* button in the convert TD to Lat/Log box. You can not however, change the reference point of any of the auto grid files. The only way to do that would be to delete the current file and start a new one **without exiting the grid setup**.

- 1 First, position the vessel or the cursor in the area where the calibration point is. Press **Ctrl-G** and click on *Show Points* button to see the calibration points on the screen and expand the plotter range if you have to.
- 2 Press **Ctrl-A** or click on *Options > Conv. TD to LL* to call the TD conv box.
- 3 If you need to set the GRI or Slaves, do so now by clicking the *Set GRI* button. Change the GRI and Slaves accordingly then make sure the Est. Lat/Long is correct.

- 4 Click on *Set Grid*
- 5 Click on *Apply* button for the changes you made to offsets, GRI or slaves to take effect.
- 6 Click on the *Exit* button and the calibration has been reset.

To edit a calibration point from the plot screen

By clicking on the “*Show Points*” button in the Loran Calibrator (**Ctrl-G**), you can visually see each calibration point as a box symbol, colored differently for each set of chain/slave combinations and the offsets for each depicted as a line. By placing the cursor over anyone of the boxes, you can see what the chain, slaves and actual Latitude/Longitude offsets are. Click this same readout to delete or move the calibration to a different file.



Turning the calibration point screen editor On or Off

- 1 Press **Ctrl-G** to call the calibration box.
- 2 Click the *Details* and then the *Show Points* button to turn the editor on
(or *Hide points* to turn off.)

The screen will redraw with boxes representing the calibration spots with white lines drawn out to zero compensation. Each box will be the same color if the GRI and Slaves are the same. Changing ranges will change box colors as more calibration points appear. It is best to do this with a black background so you can see them better.

Reading individual calibration point data

Turn on the cursor and place it over any calibration point. The calibration number, GRI, slave and offsets will display in the lower, middle of the screen.

Moving or Deleting a calibration point

Place the cursor on the calibration point to delete and click on its data display that appears in the mid-lower portion of the screen and click. Click on **Yes** to delete it, click on **No** to move it to another BIGTD file. If you decide to move it, you will be asked what file name to move it to. The file names allowed are BIGTD.DAT, BIGTD1.DAT, BIGTD2.DAT...BIGTD9.DAT.

Turning the Grid on or off

- 1 Press **Ctrl-A** or click on *Options > Conv. TD to LL* to call the TD conv box.
- 2 Click on *Set Grid*.
- 3 If there is a button that says *AUTO* then click it so it says *MANUAL*.
- 4 Click the *TD Grid lines off* check box.
- 5 Click the *Exit* button.

NOTE: Turing the TD grid off also turns off any calibration offsets that are applied to marks made using TD's, present and cursor position TD readouts.

Classifying a mark/hang as a TD

When you enter a hang using TD's, the program converts it to Latitude and Longitude and that is what the computer uses to display the hang. Then, when you calibrate the area, a certain amount of Lat/Long is applied to offset any errors made in the conversion. Saving the present position as a hang/mark while using a GPS to drive the plotter must not have this offset applied to them or they will be in error. To accomplish the distinction between them we must identify which hangs were entered in TD's. This classification is actually done automatically when you do the conversion. Look at the mark search and edit list and you will note a column with “**TD**” as a header. Any mark with an “**X**” in this column is considered a TD by the program and offsets will be applied to these marks/hangs only. The computer tags this column when you enter a hang in TD's. Simply click on this column if you wish to change the TD classification of any hang but be careful not to X any hang made with a GPS.