



Index

Commands

- [File Menu](#)
- [Edit Menu](#)
- [Tools Menu](#)
- [Windows Menu](#)
- [Options Menu](#)
- [Help Menu](#)

Procedures

- [Understanding The Main View](#)
- [Playing Soundfiles](#)
- [Recording Soundfiles](#)
- [Selecting Edit Regions and Zooming](#)
- [Using The Overview Bar](#)
- [Using The Icon Bar](#)
- [Using The Numeric Display](#)
- [Keyboard Shortcuts](#)



File Menu

The **File Menu** selections provide basic file handling operations.

- New
- Open
- Save
- Save As
- Import
- Export
- Delete File
- Exit



Edit Menu

Selections in the **Edit Menu** will be performed on the selected area in the currently active window.

- Undo Last Edit
- Undo Enabled
- Use Windows Clipboard
- Cut
- Copy
- Paste Insert
- Paste Over
- Paste Fill
- Mix Paste
- Mute
- Delete
- Trim
- Audition Cut Buffer
- Grab Tempo
- Go To Marker
- Go To Select Start
- Go To Select End
- Select All
- Soundfile Info



Tools Menu

Operations performed from the **Tools Menu** can be performed on the entire file, the selected area, or between markers. Most of them can also be performed on individual channels of a stereo file as well.

- [Fade In](#)
- [Fade Out](#)
- [Gain Adjust](#)
- [Mute](#)
- [Equalize](#)
- [Frequency Analysis](#)
- [Mix](#)
- [Crossfade](#)
- [Reverse](#)
- [Invert](#)
- [DC Offset](#)
- [Time Compress/Expand](#)
- [Auto Stutter](#)
- [Distort](#)
- [Flange](#)
- [Digital Delay](#)
- [Reverb](#)
- [SpeedUp/Slow Down](#)
- [Normalize](#)



Windows Menu

The **Windows Menu** provides basic window organization functions.

- [Zoom Out](#)
- [Lock Y Res](#)
- [Center Y Resolution](#)
- [Save View](#)
- [Load View](#)
- [Cascade Windows](#)
- [Tile Windows](#)
- [Strip Windows](#)
- [Arrange Icons](#)
- [Delete All Markers](#)



Options Menu

Wave can be personally configured in the **Options Menu**. Driver and hard disk checks can also be performed here.

[Preferences](#)

[Display Setup](#)

[Set Dim Level](#)

[I/O Device Selection](#)

[PC Equipment Check](#)

[Hard Disk Check](#)



Help Menu

Obtain on-line Help and **Wave** version information in this menu.

[Index](#)

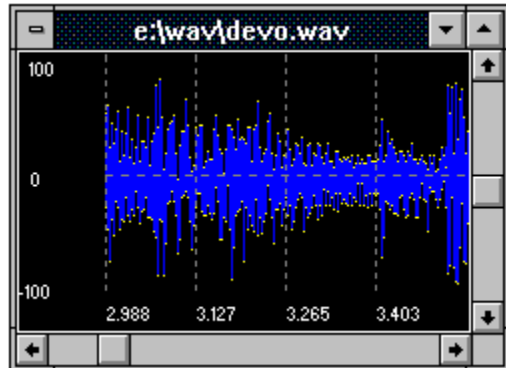
[Using Help](#)

[DLL Version](#)

[About Wave for Windows](#)



Understanding The Main View



The **Main View** of **Wave** displays the current soundfile as a waveform in a graphical form. The horizontal or X axis represents time, while the vertical or Y axis represents amplitude.

The horizontal scroll bar allows you to quickly scroll through the soundfile. The vertical scroll bar can be used to scroll to a different amplitude. This control is only enabled if you are not at 100% Y resolution.

The vertical dotted lines partition the viewing area into four regions. The horizontal lines divide each channel into two equal regions.

The numbers corresponding to each of these partitions can be calibrated according to the units of your choice in the **Display Setup**.

The color of the waveform plot is also entirely configurable in the **Preferences Dialog**.



Playing Soundfiles

Wave offers 4 flexible ways to play your soundfiles:

1. Click the left mouse button once on **The Play Icon** (the speaker button) to play the audio currently viewed on the screen, **or**, the selected area, if one exists.
2. Double click the left mouse button on **The Play Icon** to play the entire soundfile from beginning to end. You may stop the soundfile from playing at any time by clicking the mouse again or pressing the <Spacebar>.
3. Double click the left mouse button anywhere in the overview bar to play the soundfile from that position to the end. Again, you may click the mouse again or press the <Spacebar> to stop the play.
4. Double click the left mouse button anywhere in the main soundfile viewing window to play from that position to the last sample viewed on the screen.

Note: Pressing the <Spacebar> will perform the same function as number 1 above. Pressing <Shift-Spacebar> will perform the same function as number 2 above.



Recording Soundfiles

Wave's recording features are accessed by clicking on **The Record Icon** (the microphone button). If you do not have a soundfile open, a **File Selection Dialog** will appear requesting a name for the file you are about to record.

The **Record Dialog** allows you to select the format of the file to be recorded, if you are recording a new file. The highest quality possible on the installed sound board is chosen by default.

When you are finished recording, clicking on **Done** will automatically cause the newly created file to be plotted in the current window.



Selecting Edit Regions and Zooming

Selecting a region for editing in **Wave** is performed by clicking the left mouse button in the main view and dragging across the region. The display will reverse the video in this region, making the selected area very obvious.

Extending the selected area to the left or right is accomplished by pressing either <Shift> key and dragging the mouse. This function is very handy for selecting regions that are larger than that which is currently viewed on the screen.

You can **nudge** the start of the selected area one sample at a time by using the left and right arrow keys. Holding down the <Shift> key while pressing either arrow key will nudge the select end by one sample at a time.

Zooming in on a particular section of audio is done most easily by dragging across the area with the right mouse button pressed. You may find that zooming is much easier when the Y resolution remains constant. This can be set using the **LockY Res in Zoom** menu item.

Zooming can also be performed by dragging in the **Overview Bar** with the left mouse button pressed.



Using the Overview Bar



The Overview Bar can be used to quickly view a different portion of the current soundfile.

The current view of the soundfile is represented in **The Overview Bar** as a highlighted region. To move to a different area in the soundfile you can click the left mouse button in **The Overview Bar** and drag across the area you wish to view. The area will be truncated if you drag across an area larger than that set in the **Max Zoom** field of the Display Setup dialog.

If you wish to keep the length of the area viewed constant, click on the right mouse button in **The Overview Bar** and drag the highlighted area to the position you desire to view.

TURTLE BEACH SYSTEMS

Online Help System

Using the Icon Bar



The Play Icon



The Record Icon



The Select Icon



The Draw Icon



The Previous View Icon



The Left Tab Icon



The Marker Icon



The Right Tab Icon



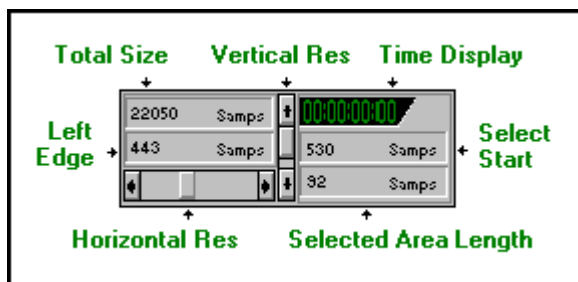
The Dim Button



Using the Numeric Display

Wave's numeric display can help you perform accurate edits by showing you the exact position of your viewing window and selected area.

In the graphic below, click on the name of the item you would like to know more about.





The Play Icon

If a section of the recording is selected, then a single click with the left mouse button on **The Play Icon** will play the selected area.

If a selected area does not exist, then left-clicking on **The Play Icon** will tell **Wave** to play the material displayed in the active soundfile window.

The entire soundfile may be played by double-clicking on **The Play Icon**. Double-clicking at any location in the overview display will also play the soundfile, beginning at that point.

The <Spacebar> performs the same function as a single click on **The Play Icon**: Either the selected area plays if there is one, or the sound in the active soundfile window plays if not. <Shift-Spacebar> plays the entire soundfile. The <Spacebar> also stops playback.



The Record Icon

Wave's recording functions are accessed by clicking on the microphone-like **Record Icon** located in the iconbar.

If you start recording in an empty soundfile window, a file selection dialog will allow you to select an existing soundfile in which to record, or to enter the name of a new soundfile.

Once the name of the file to be recorded is determined, the **Record Dialog** will appear.



The Select Icon

When **The Select Icon** is active, the mouse may be used either to define a selected area or to place the insertion cursor.

The mouse cursor changes to an "I" beam shape when it is inside the active soundfile window in this mode.

Dragging the mouse selects an area. Clicking the mouse moves the blinking cursor to that position.



The Draw Icon

When this icon is active, the mouse can be used as a pencil, to draw new sound data. This is primarily useful for removing clicks, pops, and similar glitches in a recording.

When waveform drawing is enabled, the mouse cursor takes the form of a pencil when it is inside the active soundfile window. Dragging the mouse across the window draws in new sound data. When the mouse button is released, **Wave** will clean up the display, so don't be dismayed if your drawing seems a bit sloppy at first.



The Previous View Icon

The Previous View Icon is used to step through the last eight views of the soundfile. Clicking on this icon will bring up the last view of the current soundfile window. In this sense, a "view" includes the settings of both resolution sliders and the scroll bars. Selecting a previous view does not change the status of the selected area or insertion cursor.

You may wish to go back to a view that you passed by. Clicking the right mouse button on the Previous View Icon lets you go back through the view stack for these occasions.

If you hit the end of the stack of previous views in either direction, you will hear a beep.



The Left Tab Icon

The Left Tab Icon is used to jump to the previous marker. This function may also be accessed by using the <Shift-Tab> keys.



The Marker Icon

Markers are placed in a soundfile using **The Marker Icon**. To position a marker at a specific location, you simply drag this icon to that point in the main window, and release the mouse button.

Markers may be moved within a soundfile by dragging them around within the soundfile window.

A marker may be renamed by double-clicking on the marker. You can remove markers by simply dragging them from the soundfile window to any area outside of the window.



The Right Tab Icon

The Right Tab Icon is used to jump to the next marker. This function may also be accessed by using the <Tab> key.



The Dim Button

The Dim Button allows you to quickly lower the output volume of your Wave audio, even while it is playing. Double click on the **Dim Button** to bring up the **Dim Dialog** where you can adjust just how much you would like to reduce the output by. Once the **Dim Button** has been activated, click on it again to deactivate it.

Total Size Display

This display shows the total size of the active soundfile using the **X Axis Calibration Units** set in the **Display Setup** dialog.

Left Edge Display

This number shows where the plot of the active soundfile begins. The value is displayed using whatever **X Axis Calibration Units** have been set in the Display Setup dialog.

Time Display

The **Time Display** shows the time of the first sample on the screen when the file is not playing. When the file is playing, this display shows the time of the sample being played. This display uses the **Time Code Format** specified in the **Display Setup** dialog.

Select Start Display

The start of the selected area is shown here using the **X Axis Calibration Units** specified in the **Display Setup**. If no selected area exists, the position of the cursor is shown here.

Selected Area Length Display

The length of the selected area of the active window is displayed here using the **X Axis Calibration Units** specified in the **Display Setup**. If there is no selected area, this area shows the value of the sample located at the cursor position. If a stereo file is loaded, the left channel's value appears on the left and the right channel's value is on the right.

Vertical Resolution Slider

This slider controls the vertical or Y axis resolution. In most cases you will want this control at 100% and you may lock it there with the **Lock Y Res in Zooms** menu item.

Horizontal Resolution Slider

By controlling the horizontal or X axis resolution, this slider determines how many seconds of audio are displayed in the main view. The **Max Zoom** setting in the **Display Setup** can be exceeded by using this slider.



Keyboard Shortcuts

The following is a list of keyboard shortcuts available from the main editing screen of **Wave**:

Ctrl+O	Open a file
Ctrl+S	Save a file
Ctrl+A	Save a file under a new name
Alt+F4	Exit Wave
Alt+Backspace	Undo last edit
U	Toggle Undo on/off
Shift+Del	Cut selected area
Ctrl+Ins	Copy selected area
Shift+Ins	Paste Insert
Shift+O	Paste Over
Shift+F	Paste Fill
Shift+P	Mix Paste
Ctrl+M	Mute
Ctrl+Del	Delete
Ctrl+T	Trim
A	Audition Cut Buffer
T	Grab Tempo using selected area
Ctrl+G	Go to Marker
F9	Go to Select Start
F10	Go to Select End
Shift+S	Select entire file
I	Soundfile Info
G	Gain Adjust
E	Equalize
F	Frequency Analysis
M	Mix
X	Crossfade
D	DC Offset
C	Time Compress / Expand
N	Normalize
Z	Zoom Out
L	Lock Y Res In Zoom
Ctrl+C	Center Y Resolution
V	Save View
W	Load View
Shift+F4	Cascade Windows
Shift+F5	Tile Windows
Shift+F6	Strip Windows
Ctrl+P	Preferences
Ctrl+D	Display Setup
Shift+F1	Help Mode
Left Arrow	Nudge Select Start left one sample
Right Arrow	Nudge Select Start right one sample
Shift+Left Arrow	Nudge Select End left one sample
Shift+Right Arrow	Nudge Select End right one sample

Spacebar	Play selected area or current screen full
Shift+Spacebar	Play entire file
Backspace	Previous view (Zoom stack)
Shift+Backspace	Reverse direction previous view



New

This option removes the soundfile from the top window and sets the window's name to "Untitled". Because the soundfile is contained entirely in disk files, no data is lost when **New** is selected.



Open

This opens a soundfile and places it in the active window. A **File Selection Dialog** will present you with a list of the available soundfiles.



Save

The **Save** command updates the active window's backup file with all changes that have been made to that file. If the current window's file was not backed up with the **Make Backup** option when it was opened (see **File Selection Dialog**), **Save** will be disabled. In that situation, use the **Save As** command to make a separate copy of the file.



Save As

This option is used to make a copy of the soundfile in the active window. A **File Selection Dialog** will allow you to enter the name to save the soundfile under. In situations where a copy of the active file is needed, the **Save As** command should be used. Once the save has been completed, the newly created file will be loaded into the active window and the original file will be closed.



Import

Wave's Import feature allows you to import any of several types of sound files. .WAV files are standard Windows wave files which can be imported to a different sample rate, resolution, or channel format.

.SFI files are generated by Turtle Beach's SoundStage digital mastering system, and .SMP files are created by our original SampleVision sample editor. .VOC files are sounds created by and for Creative Labs' Sound Blaster; a wide variety of these can be found on BBS's and from other sources.

The four PCM file formats are simply raw, uncompressed audio files in a variety of sampling formats. Because these files contain no header or other helpful information, **Wave** cannot sense the sampling rate, resolution, or number of channels in these files. If you are attempting to import a soundfile from some unknown source, you may need to experiment with these import types. Macintosh sound files are usually in an 8 bit mono format, sampled at 11 or 22 kHz.

Microsoft ADPCM compressed .WAV files can be imported into a standard .WAV file. You may specify 8 or 16 bit resolutions on these files but the sampling rate and number of channels will be dictated by the original file.

The **anti-aliasing filter** may be helpful if the soundfile you are importing contains a lot of spurious high-frequency noise and the destination sample rate is lower than the sources.

After you click **OK**, **Wave** will ask for the name of the input file, followed by the name of the destination .WAV file.



Export

Wave's Export feature allows the soundfile in the currently active window to be saved in a completely different format.

Wave's Export feature allows you to export any of several types of sound files. .WAV files are standard Windows wave files which can be exported to a different sample rate, resolution, or channel format.

.SFI files are generated by Turtle Beach's SoundStage digital mastering system, and .SMP files are created by our original SampleVision sample editor. .VOC files are sounds created by and for Creative Labs' Sound Blaster; a wide variety of these can be found on BBS's and from other sources.

The four PCM file formats are simply raw, uncompressed audio files in a variety of sampling formats. Because these files contain no header or other helpful information, **Wave** basically just strips the header information from the .WAV file and writes only audio data.

You may export .a .WAV file to a Microsoft ADPCM compressed file. The resulting file will be about 1/4 the size of the original. The sample rate, resolution and number of channels will remain unchanged.

The **anti-aliasing filter** may be helpful if the soundfile you are exporting contains a lot of spurious high-frequency noise and is going to a lower sample rate.

The **Export** dialog box allows you to select the file format, sampling rate, resolution, and channel format. Once this is selected, a **File Selection Dialog** will request a name for the file to be created.



Delete File

Files can be deleted from your hard disk without leaving **Wave**. Just select the file you wish to delete, making sure that the file you choose is not currently open in one of **Wave**'s four windows.



Exit

The **Exit** command closes down **Wave** and any open soundfiles. If an open soundfile has been changed and has a backup (see **Make Backup**) you will be prompted to either save the changes or forget about them.



Undo Last Edit

The **Undo Last Edit** option can be used to undo the effects of any destructive editing operations, such as Cut, Paste, or any item in the Tools menu.

Undo Last Edit is only available when a check mark appears to the left of the Undo Enabled switch. Clicking on Undo Enabled will toggle the undo feature.

The <Alt-Backspace> key combination duplicates the **Undo Last Edit** function.



Undo Enabled

When **Wave** performs an editing operation, it first makes a copy of the section of the soundfile that will be edited. This copy is placed in a special file called the *undo buffer*. If you decide to undo an edit, **Wave** simply swaps the edited section of the soundfile with the undo buffer.

Since creating the undo buffer can be quite time-consuming, and may also involve a lot of hard disk space, we have given you the option of disabling the **Undo Last Edit** option.

We suggest that when you are preparing to make massive changes to an entire soundfile, you first make the change to a small section of the file with undo enabled. Once you are confident of the results you'll be getting, turn the undo feature off, and then edit the entire file.

The status of the **Undo Enabled** switch can be saved in the [WaveForWindows] portion of WIN.INI by setting it to the desired mode and then going into **Preferences** in the **Options** menu and saving your current settings (done simply by clicking the **OK** button in the **Preferences** dialog).

The <U> key can be used to toggle the **Undo Enabled** switch.



Use Windows Clipboard

When this item is checked, the program will attempt to use the Windows clipboard for storage of cuts and copies. These attempts may fail due to the size of the data you cut or copy exceeding Windows free memory. You will get an error message in this case.

If you have this item unchecked, **Wave**'s disk-based clipboard file will be used and the only limitation of clip size will be your disk's free space. Note that **Audition Cut Buffer** will only work on **Wave**'s clipboard disk file, not on the Windows clipboard.



Cut

This item removes the material in the selected area and places it in the cut buffer. The **Cut** function is duplicated by the <Shift-Del> key combination. If Use Windows Clipboard is enabled, the data will be cut to the Windows Clipboard. If not, the data will be cut to **Wave's** disk based cut buffer.



Copy

This item is similar to **Cut** except that the selected area is not deleted from the soundfile; it is simply copied to the cut buffer. Pressing <Ctrl-Ins> performs the same function.

If Use Windows Clipboard is enabled, the data will be copied to the Windows Clipboard. If not, the data will be copied to **Wave**'s disk based cut buffer.



Paste Insert

Paste Insert is used to place the contents of the cut buffer back in the soundfile at the current cursor position. It is only available if something has been placed in the cut buffer. Otherwise, this item is disabled.

If **Use Windows Clipboard** is enabled, the data will be copied from the Windows Clipboard. If not, the data will be copied from **Wave**'s disk based cut buffer.

Paste Insert can also be used to create a new soundfile. If you open an untitled soundfile window and then click on **Paste Insert**, **Wave** will present a file selector where you can enter the name of the new soundfile. The data in the cut buffer will then be pasted into the new soundfile.

Paste Insert is duplicated by <Shift-Ins>.



Paste Over

This option is similar to Paste Insert, except that it always replaces data in the soundfile, regardless of the existence of a selected area. The length of the replaced data is identical to the length of the cut buffer.

If Use Windows Clipboard is enabled, the data will be copied from the Windows Clipboard. If not, the data will be copied from **Wave**'s disk based cut buffer.

<Shift-O> duplicates this menu item.



Paste Fill

This function will repeatedly copy data from the cut buffer to the selected area, replacing any existing data. This is primarily useful for dialog editing, when you'd like to replace an extraneous sound with some ambient background noise. Simply copy a few seconds of background noise (or "room tone") to the cut buffer, then select the area you want to replace and select **Paste Fill**.

If Use Windows Clipboard is enabled, the data will be copied from the Windows Clipboard. If not, the data will be copied from **Wave's** disk based cut buffer.

The <Shift-F> key combination duplicates **Paste Fill**.



Mix Paste

This edit option allows you to quickly mix the current contents of the cut buffer with the active soundfile, starting at the current cursor position or start of the selected area. Regardless of the selected area, the entire contents of the cut buffer will be pasted into the file.

You can control the volume or gain level of the sound in the cut buffer by using the **Paste Level** control.

Mix paste is not available when using the Windows Clipboard.



Mute (Edit)

The **Mute** option can be used to replace a portion of either or both channels with silence. Clicking here, or pressing <Ctrl-M>, will set the data in the selected area to zero, which is the computer's way of erasing audio.



Delete

Delete is like Cut without Copy: It deletes the selected area from the soundfile without saving it in the cut buffer. This is handy if you wish to delete something without disturbing the contents of the cut buffer.

Delete is duplicated by the <Ctrl-Del> key combination.



Trim

Use **Trim** to remove all audio outside of the selected area. This is useful if you have one phrase or sound in a file surrounded by silence or extraneous noise. Highlight the sound you wish to keep and select **Trim**. All of the unwanted noise will be deleted, leaving only the desired sound.



Audition Cut Buffer

Audition Cut Buffer plays back the sound stored in the cut buffer. This is useful if you forget exactly what is stored there. Playback can be stopped by pressing the <Spacebar> or clicking the mouse. **Audition Cut Buffer** is only available when **Wave**'s cut buffer is in use. It is unavailable when Window's Clipboard is in use.

The <A> key duplicates this function.



Grab Tempo

Grab Tempo is used to identify the length of one beat to be used when calibrating the X axis in beats or determining tempo.

To identify the length of one beat, select an area with a duration of exactly one beat. Click on **Grab Tempo** or press the <T> key. The tempo will now be set and can be viewed in **Soundfile Info**. The main window can also now be calibrated in beats by selecting **Beats** in the **X axis calibration** section of the **Display Setup**.



Go To Marker

The **Go To Marker** option may be used to position the soundfile window at any marker. After selecting this item, a dialog that is similar to the item selector will allow you to select a marker from a list. The markers are identified in this list by their names, which, unless you have renamed them, are their locations in the soundfile, using the current calibration units. The marker will appear about 1/4 of the way into the soundfile window.

No more than 16 markers may be displayed in one soundfile window at any time. If more than 16 are present in the soundfile window, only the first 16 will be shown.

<Ctrl-G> duplicates the function of **Go To Marker**.



Go To Select Start

This function is a fast way to get the start of the selected area into the main soundfile view. The **Select Start** will be shown approximately 1/4 of the way into the soundfile window.

This function is duplicated by the <F9> key.

This function is disabled if no selected area exists.



Go To Select End

This function is a fast way to get the end of the selected area into the main soundfile view. The **Select End** will be shown approximately 1/4 of the way into the soundfile window.

This function is disabled if no selected area exists.

Go To Select End can be performed by using the <F10> key.



Select All

The **Select All** function is a quick way to select the entire file. This is handy for exporting entire soundfiles to the Windows clipboard.

You may **Select All** by pressing the <Shift+S> keys.



Soundfile Info

The **Soundfile Info** option brings up a dialog which allows you to view important information about the current soundfile and to add **Comments** to the soundfile.

The **Sample Rate**, **Resolution**, and **Channels** fields show the obvious information. These values are determined when the soundfile is recorded, and cannot be changed from this dialog. **Block Align** and **Format Tag** are two data fields found in every Windows-compatible .WAV file, and are provided here solely for the interest of the tech-heads out there. (You know who you are.)

The **SMPTE Offset** field allows you to enter an offset time, in SMPTE units, that will be added to the time display. The **Tempo** field allows you to enter (or view) a tempo value that will be used when displaying time calibrated in beats. Note that the **Comments**, **Offset**, and **Tempo** information are saved in the soundfile.



Fade In

The **Fade In** option can be used to quickly fade in across the area chosen in the **Source Range Selector Dialog** or the current selected area if the Source Range Selector Dialog has been turned off in the **Preferences Dialog**.

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The audio in the selected region will increase in loudness from total silence to its original level, following a linear curve.



Fade Out

The **Fade Out** option can be used to quickly fade out across the area chosen in the **Source Range Selector Dialog** or the current selected area if the Source Range Selector Dialog has been turned off in the **Preferences Dialog**.

The volume of the audio in the selected range will be lowered to total silence, following a linear curve.



Gain Adjust

This option is used to change the level of the specified range. The change can either be a flat gain change to the entire section, or a fade up or down.

If the Source Range Selector Dialog has been turned off in the Preferences Dialog the Gain Adjustment will affect the selected area.

The two faders labeled **Start Level** and **End Level** are used to manually adjust the gain of the endpoints over a range of -96 dB to +10 dB.

The **Linear** and **Exponential** buttons determine the shape of the volume change. In most cases, you should select **Linear**.

The buttons labeled **Fade In** and **Fade Out** are used to set the endpoint gains to -96 dB and 0 dB or 0 dB and -96 dB, depending on the direction of the fade.

If either **Fade** button is highlighted, then the **Audio Taper** button may also be used. In this case, the fade is broken into two linear segments which approximate a logarithmic fade, resulting in a more natural change in volume. The shape should be set to **Linear** if **Audio Taper** is specified.

Note that if you specify a fade of some sort on a chunk of music in the middle of a soundfile, you will probably want to do a corresponding change to the material immediately before or after the specified range. For example, if you fade the middle of a song from 0 dB to -6 dB, you should do a gain adjust operation on the music from the end of the specified range to the end of the song, with both gains set to -6 dB.



Mute (Tools)

The **Mute** option is used to selectively erase a segment of audio in one or both channels. The **Source Range Selector Dialog** determines what section of the recording will be erased. If the Source Range Selector Dialog has been turned off in the **Preferences Dialog** the Mute will affect the selected area.

Note that **Mute** is duplicated by the **Mute** option in the **Edit** menu. These are functionally identical, but the **Edit** menu version can only be used on the selected area.



Equalize

The **Equalize** option brings up Wave's four-band parametric equalizer. After you select this option, a **Source Range Selector Dialog** will appear, determining what section of the recording will be equalized. If the Source Range Selector Dialog has been turned off in the **Preferences Dialog**, the EQ will affect the selected area.

The **Preset Dialog** allows you to perform the equalization without bringing up the EQ dialog by simply selecting a preset and clicking on the **OK** button. If you wish to 'tweak' a preset or create a new one, click on the **Advanced** button and you will be greeted by the EQ dialog.

Most of the controls in the EQ dialog will be self-explanatory if you've ever worked with an analog equalizer. The EQ algorithm simulates a four band stereo parametric equalizer. The **gain**, **center frequency**, and **bandwidth** of each band may be set by clicking on the knob that displays the current setting and adjusting it to the desired new setting. For precise setting of the knob you may click on the top of the numeric display of that knob to increment the value by one, or on the bottom of the display to decrement.

The **Amaze-O-Graph™** shows a graphic representation of the response of each of the four bands. If you're using a color monitor, the color of each band will match that of the corresponding set of controls.

The **Reset** button (located below the **Amaze-O-Graph**) sets the gains for all four bands, as well as the master gain for the equalizer, to 0 dB. It also resets the **bandwidth** and **center frequency** controls to their default values.

If you would like to save your settings for future use, click on the **Save Preset** button. Once the preset is named, you will be able to instantly recall those settings by clicking on the preset name in the **Load Preset** dialog box.

When things are set up to your taste, click on **OK**, and **Wave** will edit the soundfile. If you don't want to change the soundfile, click on **Cancel**.



Frequency Analysis

Unlike the other DSP functions in **Wave**, the **Frequency Analysis** option does not modify the soundfile, but is used to display a soundfile, or part of a soundfile, in terms of its component frequencies. Frequency analysis can be applied to one or both channels of the entire soundfile, the selected area, or the section between two markers.

About Frequency Analysis:

The sound plot in the soundfile window displays recorded audio data in what engineers call the *time domain*. Time is plotted on one axis, and the level, or amplitude, of the signal on another. This is the way sound exists in the air, and as electrical signals, but it is not the way our ears hear sound. Another way to analyze a sound is to look at it in the *frequency domain*, in which frequency is plotted on one axis, and amplitude on another. This is closer to what our ears hear, because it takes different frequencies into account, but it is still not perfect, because it doesn't take into account the importance of changes over time.

To really get a handle on what a sound "looks" like, it is necessary to view it in three dimensions--time, frequency and amplitude--simultaneously. This is what **Wave's Frequency Analysis** option is all about. This option divides the soundfile, or part of a soundfile, into several time slices, and then performs an FFT (Fast Fourier Transform) on each time slice, to determine the frequency content of that portion of the music. The different slices are then stacked one in front of the other.

Performing a Frequency Analysis:

After you select **Frequency Analysis** from the **Tools** menu, a range selector will let you specify what part of the soundfile you wish to analyze. After you select **OK** in the range selector dialog, your computer will crank out the FFT display.

Four buttons are located at the bottom of the Frequency Analysis dialog. The **Done** button brings back the soundfile window. **Browse** brings up the FFT Browser dialog with a single FFT page. The **Config** button is used to change the frequency analysis parameters. The **Help** button, as you probably know, brings up this help information.



FFT Configuration

The **From Band** and **To Band** sliders set the range of frequencies that will be analyzed. Wave divides the audio spectrum into 128 separate frequency bands, the frequencies of which depend on the sample rate. When the sample rate is 44.1 KHz, the lowest is centered at 172 Hz, and the highest at 22050 Hz. In most cases, you will want to look at the full spectrum initially, and then perhaps narrow the range of displayed frequencies if you want a closer look at a particular part of the spectrum.

The **Time Slices** slider determines how finely the soundfile or selected area is divided. More time slices provide a more detailed look at how the sound evolves over time, but also requires longer to draw.

The **Scaling** slider sets the visual gain of the plot. If set too high, some parts of the plot may "hit the ceiling", or if set too low, some detail will be lost. The choice is yours.

The radio buttons labeled **Time Direction** determine whether the beginning of the sound will appear at the back of the plot, or the front. This can be a highly emotional issue; we will leave it to you to make the decision.

The two **Plot** buttons determine the direction of the lines used in the plot. **Frequency** causes lines to be drawn connecting frequency bands (back to front), and **Time** causes the time slices to be connected (left to right). The plots look ultracool if both are turned on, but you may want to use only one in some cases. At least one must be turned on, or the plot will be blank.

If you're using a color system, the **Highlight** buttons cause the specified set of plot lines (**Time** or **Frequency**) to be drawn in the highlight color.

The **Browse Plot** buttons work in conjunction with the **Browse** button discussed in the next section. They determine whether the time slice plots will be drawn as a continuous contour (**Shape**) as they are in the main plot, or in bar graph format (**Lines**), which is similar to what you'd see with an audio spectrum analyzer.

The **Display Horizon** button turns on the horizon lines that appear behind the FFT plot. They enhance the three dimensional effect, and also make the picture look like a Salvador Dali painting.



Mix

This menu item is used to mix up to three soundfiles down to a fourth.

The three boxes in the left part of this dialog correspond to three of **Wave**'s soundfile windows. If any of these windows are empty, then the items in that box will be disabled, as in the box for window 3 in the above example.

The radio buttons labeled **Destination** determine where the mixed soundfiles will be placed. The soundfile in the destination window will be overwritten by the mix operation, so we suggest that you use an empty window as the destination.

The long vertical fader in each of the soundfile boxes sets the mix **Level** for that soundfile. If the level is set to -96 dB, that soundfile will not be included in the mix.

The buttons labeled **M**, **S**, and **All** are used to specify which part of the soundfile will be included in the mix. When you click on **M**, a list of the available markers will appear. The **S** button is used to specify the selected area, and is only available if an area is selected.

The fields labeled **Start Time** tell **Wave** where to place the specified chunk of music in the destination file. This time is specified in hours, minutes, seconds, and SMPTE frames, and does not include the effects of any offset times. As an example of how this works, the mix specified in the dialog shown above would result in the soundfiles 1 and 2 mixed into soundfile 4, with the second soundfile starting five seconds after the start of the first soundfile.

Once the mixer parameters are set properly, click on **OK**, and **Wave** will mix the specified soundfiles.



Crossfade

The **Crossfade** option is used to fade one soundfile into another. The **Source** soundfile is crossfaded into the **Destination** soundfile, and the result is then placed in the **Source** soundfile. The original **Destination** soundfile is not affected.

The length of the crossfade is determined by the shortest of the ranges specified. The crossfade point (the center of the crossfade) is set to one half the length of the shortest range.



Reverse

This option is used, oddly enough, to reverse a section of music in either or both channels.



Invert

This option is used to reverse the phase of one or both channels. Inverting both channels is pointless, but inverting one may result in some neat stereo enhancement. Another use for phase inversion is to fix recordings made by inferior sound cards that are out of phase.



DC Offset

This option is used to add a **DC offset** (that is, a zero-frequency component) to the specified portion of the soundfile. This is intended primarily as a way to fix data recorded with an improperly calibrated DAC, which may be found on some sound cards. This can result in serious distortion if the offset is extreme.

Here's how we recommend you use the **DC Offset** function to correct this problem. After you make sure that undo is enabled, select a short section of music that is fairly low in volume, then take a guess at the location of the segment's baseline (or average value). (It may be helpful at this point to set the **Y axis calibration units** to **Decimal** in the **Display Setup**. Use the **DC Offset** option to subtract the corresponding **DC offset** from this section, then visually inspect the section. If things look OK, click on **Undo Last Edit** to undo the change, then apply that **DC offset** to the entire file. If things need further tweaking, click on **Undo Last Edit**, then try again.

Note that your baseline does not have to be exactly zero--anywhere close is good, since **DC offset** problems aren't usually audible unless they are extreme.



Time Compress / Expand

This option allows you to stretch or compress a portion of your recording. After you click here, a **Source Range Selector Dialog** will appear if the Source Range Selector Dialog has been turned on in the **Preferences** dialog. If the selector option is not used, the selected area will be affected.

The **Time Compress / Expand** dialog contains only two controls: the **Percent of Original** knob and the **Accuracy** radio buttons.

The knob will allow you to specify a compression ratio of between 25% and 300%. For precise setting of the knob you may click on the top of the numeric display to increment the value by one, or on the bottom of the display to decrement.

The length of the adjusted soundfile is displayed in the **New Length** field. The **Accuracy** buttons allow you to balance the fidelity of the altered soundfile against the amount of time required for the operation. Use **Low** when someone is hanging over your shoulder waiting for results, and **High** for the final production.



Auto Stutter

Included only for those times when you need the bizarrest of effects, The **Auto Stutter** option takes an area and chops it into a user-defined number of areas per second.

A **Source Range Selector Dialog** will appear if the Source Range Selector Dialog has been turned on in the **Preferences** dialog. If the selector option is not used, the selected area will be affected.

The **Preset Dialog** allows you to perform your favorite Auto Stutter effect without bringing up the Auto Stutter dialog by simply selecting a preset name and clicking on the **OK** button. If you wish to 'tweak' a preset or create a new one, click on the **Advanced** button and you the Auto Stutter dialog will open.

The Auto Stutter dialog box contains two controls. The **Percent of Original** knob determines how much blank space to insert between the chopped areas, while the **Stutters Per Second** knob allows precise control over how many chops are done every second. For precise setting of the knob you may click on the top of the numeric display to increment the value by one, or on the bottom of the display to decrement.

If you would like to save your settings for future use, click on the **Save Preset** button. Once the preset is named, you will be able to instantly recall those settings by clicking on the preset name in the **Load Preset** dialog box.

Since the **Auto Stutter** algorithm will change the size of the region on which it is performed, it cannot be performed on an individual channel in a stereo file.



Distort

Distortion can be tastefully added to a file with the **Distort** option. **Distort** allows you to select a region and a **Threshold** above which distortion will occur. The **Output** parameter lets you control the gain or volume of the sound that has been distorted (i.e., the sound that has reached the threshold and been clipped).

A **Source Range Selector Dialog** will appear if the Source Range Selector Dialog has been turned on in the **Preferences** dialog. If the selector option is not used, the selected area will be affected.

The **Preset Dialog** allows you to apply distortion without bringing up the Distort dialog by simply selecting a preset name and clicking on the **OK** button. If you wish to 'tweak' a preset or create a new one, click on the **Advanced** button and you will see the Distort dialog.

A typical setup for the distortion would be a **Threshold** setting of -18dB and an **Output** of -8dB. This setting will cause anything above -18dB to clip and be raised to -8dB in the output file.

If you would like to save your settings for future use, click on the **Save Preset** button. Once the preset is named, you will be able to instantly recall those settings by clicking on the preset name in the **Load Preset** dialog box.



Flange

Flanging is a 'whooshing' effect caused by mixing a sound with a time-delayed copy of the same sound. **Wave's** flanging function gives you the ability to create a wide variety of flanging effects and save the parameters for instant recall later.

A **Source Range Selector Dialog** will appear if the Source Range Selector Dialog has been turned on in the **Preferences** dialog. If the selector option is not used, the selected area will be affected.

The **Preset Dialog** allows you to perform a flange without bringing up the Flange dialog by simply selecting a preset name and clicking on the **OK** button. If you wish to 'tweak' a preset or create a new one, click on the **Advanced** button and you may create your own preset in the Flange dialog.

The sound of the flange is completely programmable through the following parameters:

Delay Time -- Sets the time difference between the delayed copy and the original. Shorter delays cause more of a high pitched 'whooshing' sound while longer delays cause a lower 'bouncy' type of sound, eventually becoming a chorus effect.

Feedback -- Adjusts how much of the effect output is returned to the effect input. A more pronounced and sometimes 'gritty' flange can be obtained with high levels of feedback.

Modulation Rate -- Determines how often the flanging effect will oscillate in one second. This control is represented in Herz (cycles per second) so larger settings mean shorter sweep times. For example, a rate of 0.2 Hz will take 5 seconds to sweep across its **Depth** while a rate of 2 Hz will only take half a second.

Modulation Depth -- Sets the range of the sweeping effect. A high **Depth** setting will result in a very wide sweeping sound, while a low depth setting will result in very little change in the sound of the sweep as it oscillates.

Mix Output -- Controls how much of the processed sound should be contained in the output. The mix control goes from -100 to +100, allowing you to change the phase of the processed sound. A **Mix Output** of -50% will mix 50% of the phase-reversed processed sound with 50% of the original. A **Mix Output** of +100% will yield entirely processed sound and, unless lots of feedback was used, will not sound very different (since flanging occurs primarily because two out of phase sounds were mixed together).

For precise setting of the knobs you may click on the top of the numeric display to increment the value by one, or on the bottom of the display to decrement.

The **Shape** of the modulation curve can be a sine, triangle or sawtooth. The **Direction** control sets whether the curve should begin in an upward motion (Normal) or in a downward motion (Inverted).

The checkboxes allow you to cut the flange at the end of the selected range or **Lo-Pass Filter** the delayed signal for a softer flange.

If you would like to save your settings for future use, click on the **Save Preset** button. Once the preset is named, you will be able to instantly recall those settings by clicking on the preset name in the **Load Preset** dialog box.



Digital Delay

Wave's **Digital Delay** function allows you to put echo, chorusing, and slapback effects right into your soundfiles.

A **Source Range Selector Dialog** will appear if the Source Range Selector Dialog has been turned on in the **Preferences** dialog. If the selector option is not used, the selected area will be affected.

The **Preset Dialog** allows you to add delay without bringing up the Delay dialog by simply selecting a preset name and clicking on the **OK** button. If you wish to 'tweak' a preset or create a new one, click on the **Advanced** button and you may create your own preset in the Delay dialog.

The delay effect can be altered by adjusting the following parameters:

Delay Time -- Sets the time difference between the delayed copy and the original. Delays of less than 100 ms give a *chorus* effect. Delays of 100-300 ms are usually referred to as *slapback*. Delays greater than 300 ms can be perceived as *echoes*.

Feedback -- Adjusts how much of the effect output is returned to the effect input. A fuller or more dense echo is achieved with higher levels of feedback.

Mix Output -- Controls how much of the processed sound should be contained in the output. The mix control goes from -100 to +100, allowing you to change the phase of the processed sound. A **Mix Output** of -50% will mix 50% of the phase-reversed processed sound with 50% of the original. A **Mix Output** of +100% will yield entirely processed sound.

For precise setting of the knobs you may click on the top of the numeric display to increment the value by one, or on the bottom of the display to decrement.

The checkboxes allow you to cut the delay at the end of the selected range or **Lo-Pass Filter** the delay for a more natural sounding echo.

If you would like to save your settings for future use, click on the **Save Preset** button. Once the preset is named, you will be able to instantly recall those settings by clicking on the preset name in the **Load Preset** dialog box.



Reverb

Reverb can be added at specific points in a file using **Wave's** flexible digital **Reverb** function.

A **Source Range Selector Dialog** will appear if the Source Range Selector Dialog has been turned on in the **Preferences** dialog. If the selector option is not used, the selected area will be affected.

The **Preset Dialog** allows you to add reverb without bringing up the reverb dialog by simply selecting a preset name and clicking on the **OK** button. If you wish to 'tweak' a preset or create a new one, click on the **Advanced** button and you may create your own preset in the reverb dialog box.

The reverb effect can be altered by adjusting the following parameters:

Pre Delay Time -- Sets the time difference between the initial reverberation and the original. Natural reverb can be simulated using a pre delay setting of 30 ms or less. For unnatural effects, try pre delay settings of over 100 ms.

Decay Time -- Adjusts how long it will take for the reverb to decay to an inaudible level. If this value exceeds the length of the file, the file will be lengthened to allow for the decay.

Mix Output -- Controls how much of the processed sound should be contained in the output. The mix control goes from 0 to 100 allow you to change the phase of the processed sound. A **Mix Output** of 50% will mix 50% of the processed sound with 50% of the original. A **Mix Output** of 100% will yield entirely processed sound.

Density -- Controls the fullness of the reverb. A higher density will take on the characteristics of a more reflective room, but will take longer to process,

For precise setting of the knobs you may click on the top of the numeric display to increment the value by one, or on the bottom of the display to decrement.

You may use the checkboxes to **Add Reverb in Selected Range Only** to create unnatural effects or simulate gated reverb, or **Lo-Pass Filter** the reverb to create a darker sounding room.

If you would like to save your settings for future use, click on the **Save Preset** button. Once the preset is named, you will be able to instantly recall those settings by clicking on the preset name in the **Load Preset** dialog box.



Pitch Shift

Not Yet Implemented.



Speed Up / Slow Down

This function will change the speed at which a soundfile is played back by adding or removing samples, much like changing the playback speed of a tape recorder. Since samples are added or deleted (incurring a file size change), this operation must be performed on both channels in a stereo file.

A **Source Range Selector Dialog** will appear if the Source Range Selector Dialog has been turned on in the **Preferences** dialog. If the selector option is not used, the selected area will be affected.

You may select the playback speed by setting the **Percent of Original** control. By setting the control at 50%, you will obtain a sound slowed down to half its original speed (and an octave lower in pitch). A setting of 200% will be twice as fast as the original and an octave higher in pitch.



Normalize

It is generally a good idea to try to use the maximum dynamic range when recording on any medium. With digital audio that can be extremely difficult, since any clipping at all sounds really nasty. The **Normalize** feature is intended to make life a little easier by automatically finding the highest peak in a file and then re-calcing the file with that peak at maximum dynamic range. **Wave** will scale the area selected so that the maximum dynamic range is utilized without clipping.

A **Source Range Selector Dialog** will appear if the Source Range Selector Dialog has been turned on in the **Preferences** dialog. If the selector option is not used, the selected area will be affected.

Don't be afraid to normalize several passages in the same file. When recording speech, different phrases can have very different gain levels. Normalizing the entire file would leave the quiet phrases still very low in comparison to the louder ones. If you desire an even gain level, you will need to normalize each passage separately.



Zoom Out

This menu item allows a fast way to zoom out to full resolution, according to the setting for **Main Zoom** in Display Setup. This can also be accomplished quickly by pressing the <Z> key at any time.



Lock Y Res in Zoom

Lock Y Res in Zooms disables zooming in the Y direction. If this option is checked, then the amplitude resolution will not change when using the zoom mode.



Center Y Resolution

Center Y Resolution is used to center the soundfile's zero line in the middle of the window. This is especially useful when you wish to zoom in on a zero crossing point, as it can be difficult to center the display vertically with the scroll bar.



Save View

You may save the current layout of your **Wave** windows at any time by using the **Save View** command. This will bring up the **Save View** dialog where you will be asked to give the current view a name. When you use the **Load View** command, **Wave** will automatically load the soundfiles that were loaded when the view was saved. All window positions are also retained. A maximum of 50 views can be saved in **Wave**. Use the **Delete** button to remove a view you no longer need.



Load View

Use the **Load View** command to recall a view that you have saved using the **Save View** command. When you load a view, all the currently loaded soundfiles will be closed down and replaced by the soundfiles associated with that view. If a soundfile had a backup when the view was saved, a backup will be made when that file is loaded. You may delete a view you no longer need from the **Load View** dialog by using the **Delete** button.



Cascade Windows

Cascade Windows places the open soundfile windows in an overlapping diagonal arrangement.



Tile Windows

Tile Windows places each open window against its neighbor, maximizing the available screen space.



Strip Windows

Strip Windows puts the windows in horizontal strips, one above the other.



Arrange Icons

Arrange Icons simply places the icons for any minimized soundfile windows in a convenient arrangement at the bottom of the main window.



Delete All Markers

Use this command to quickly delete all **markers** from the active window. Remember, individual **markers** can be deleted simply by dragging them outside of the window which they had been placed in.



Preferences

This menu item brings up the **Preferences** dialog, which is used to set many of **Wave**'s global operating parameters; that is, settings that affect the operation of the entire program. You shouldn't need to spend much time here; the usual procedure is to set these parameters once, then forget that this dialog even exists.

Insertion Cursor Blink Speed sets the rate at which the insertion cursor blinks.

The combo box labeled **Set Color of** and the buttons labeled **Colors** are used to change the colors used in the soundfile windows. The **Set Color of** list determines what part of the display will be changed by the **Colors** buttons. You may set a different waveform plot and highlight color for each soundfile window; all of the other color settings affect every soundfile window.

Soundfile Path

This setting tells **Wave** where to look for and store soundfiles. Remember that you can always override this in the file selection dialogs.

Temp File Path

Wave creates any necessary temp files in this directory. The current directory will be used if no path is specified. It is relatively important to always have hard disk space left on the disk that contains this path since the undo buffer will be maintained here.

Use Source Range Dialog

When this box is checked, the **Source Range Selector Dialog** box will be presented before any tool is performed. If the box is not checked, the selector dialog will not be used. If a selected area exists, the tool will be performed on that region. If not, the entire file will be processed.

Wave Logo

This switch displays or hides the **Wave** logo that appears in the iconbar.

Play Mode / Record Mode

These buttons tell **Wave** where it should position the beginning of the active soundfile window when playback or recording is finished. If **Hard Disk** is selected, the position of the window will not change when playback or recording is finished. This is the mode you'll want to use most often. If **Tape** is specified, the window will be positioned at the point where playback or recording stopped. This is handy if you want to locate a section of sound by ear.

In addition to the above items, the current modes of **Undo Enabled**, **Use Windows Clipboard**, and **Lock Y Res in Zooms** are saved to the WAVE.INI file when you click on **OK** in the **Preferences** dialog.



Display Setup

The **Display Setup** dialog is used to set several options pertaining to the soundfile windows.

X Axis Calibration Units

The **X Axis Calibration Units** setting determines how time is displayed in the overview, soundfile windows, and time displays. If set to **Time Code**, time is displayed in hours, minutes, seconds, and SMPTE frames. **Samples** and **Hex Samples** tell **Wave** to calibrate time in terms of sample frames, using either decimal or hexadecimal notation. **Film/Frame** displays times in terms of film feet and frames, at rates of 1.5 feet per second and 24 frames per second, and **Beat** causes times to be displayed in terms of beats. The X axis calibration lines may be turned off with the **X Calib Lines** button.

Y Axis Calibration Units

Y Axis Calibration Units sets the calibration used for amplitude in the soundfile windows. If set to **% Amplitude**, the units on the Y axis will range from -100 to 100. If set to **Decimal Samples**, the Y axis is calibrated in individual sample levels, from -32767 to 32768. **Hex Samples** is similar to **Decimal Samples**, except that a two's complement hexadecimal numbering system is used.

Calibration Lines

X Calibration Lines and **Y Calibration Lines** affect the grid lines that are drawn in the soundfile windows. The X axis (horizontal) lines can be turned on or off. For the vertical (Y axis) calibration lines, you have three choices: no lines at all (**Off**), short lines at the bottom of the display (**Baseline**), or full-height lines (**Full Height**).

Turbo Plot

The **Turbo Plot** button speeds up waveform plotting by telling **Wave** to skip some samples when drawing the waveform. This results in a slight loss of visual accuracy, which won't be a problem in most cases.

Max Zoom

The **Max Zoom** field determines the maximum size of the soundfile window when grabbing it from the overview. Note that you can still view longer sections of the soundfile by using the time resolution slider.



Set Dim Level

Selecting **Set Dim Level** or double-clicking on the **Dim Button** brings up the **Dim Dialog**.

The **Dim Dialog** lets you set the Wave Output Level that you would like the **Dim Button** to activate. For stereo soundboards, this level will affect both Left and Right output levels.

Since the value set represents an absolute value and not a relative value, the **Dim** function could be used as a boost if you set the Dim level higher than the normal output level.



I/O Device Selection

This option allows you to select from different wave audio devices that may be loaded in your system. This is useful for authoring sounds that must be played back on a variety of sound cards.



PC Equipment Check

This item displays important information about your computer. The dialog that appears after you select this option shows the amount of free memory available to Windows, the resolution of your video system, and the capabilities of your sound card.



Hard Disk Check

This menu option looks at the drive specified in the **Soundfile Path** field in the **Preferences** dialog and displays the amount of free space on that drive, along with the drive's total capacity.



Index

The **Index** option brings up the **Wave for Windows Help Index**. You can access information on any aspect of **Wave** by stepping through the help index. You may return to the index at any time by clicking the **Contents** button at the top left.



Using Help (Help Menu)

This menu item gives instructions on using the Help facility included in **Wave**.



DLL Version

Clicking on this item will bring up a dialog showing you what version of Wavemme.DLL is currently running. This DLL contains most of the playing, recording, and editing functions used by **Wave**. This version number really should not concern you, but is included for potential support issues.



About Wave

This menu item brings up the **Wave for Windows About** box, showing the version of **Wave** currently running.



Using Help

Help can be accessed in three ways in **Wave**:

- You may enter Help Mode by pressing <Shift+F1> at any time a dialog box is not open. This will change the cursor to a question mark. You may now obtain Help on any item by clicking on that item.
- When a dialog box has been opened, you may obtain Help on that dialog box by clicking on the Help button or by pressing the <F1> key.
- You can bring up the Help Index at any time by pressing the <F1> key from the main view or by selecting the Index command in the Help Menu.



File Selection Dialog

The **File Selection Dialog** contains a file list box on the left and a directory list box on the right. You may type the name of the file you desire to use in the edit text box at the top at any time.

When opening a file for editing, **Wave** gives you the option to **Make a Backup**. When **Make Backup** is checked, a copy of the file is made before it is opened for editing. All changes are done to the backup, leaving the original file intact. When you exit **Wave** and a backup exists, you will be prompted to decide whether or not to keep the changes or save the original.

Although this is the normal way for a Windows program to work, we made it optional because .WAV files can be huge in size, depending on length and format. If you are editing a huge file, uncheck the **Make Backup** box and any operations you perform will be to the original file. You will still have the use of Undo (assuming you enable it), but you will not be able to Undo more than one change. Note that when you record a file the first time, and when you Import, it is not backed up until you close and then reload it.

When the **Auto Audition** option is turned on, each file you click on in the dialog box will play until you click the mouse.

The settings of **Make Backup** and **Auto Audition** are saved to WAVE.INI and will default to whatever the last setting was.



Source Range Selector Dialog

This dialog lets you choose what area of your soundfile you would like to process.

The entire soundfile is always the default range. The function can also be applied to the selected area or the area between any two markers, by clicking on the appropriate button. When you select **Markers**, a dialog will ask you to specify a pair of markers which will determine the range of the edit.

Many of the DSP functions can also be applied to one or both channels of the recording. The **Left**, **Right**, and **Stereo** buttons are used for this, as you may have guessed. When the soundfile has only one channel, the **Mono** button will be the only available choice.

Those tools that affect the length of the area processed, such as **Time Compress** and **Auto Stutter**, can not be performed on individual channels of a stereo file.



Error Dialog



Wave may at times greet you with an error message if it comes across something unexpected. On these hopefully rare occasions, the thumbs down dialog will inform you of the nature of the problem.

The information included in the error dialog is laid out like this:

Line 1 : A general description of what event caused the error.

Line2 : A translation of a code that could be a more precise description of where the error occurred (this could also simply be 'Generic Error').

Line 3 : The extended error code - a value helpful if the problem is so severe that you must call customer support.

Line 4 : The position code - also helpful if the problem goes to customer support.



Record Dialog

The **Record Dialog** allows you to select the format of the file to be recorded, if you are recording a new file. The standard Windows **Sampling Rates** of 44100 Hz, 22050 Hz, and 11025 Hz are supported. **Resolutions** of 8 and 16 bits are available if the installed sound board supports them, as are Mono and Stereo **Channels**. The highest quality possible on the installed sound board is chosen by default.

The transport controls work just like they do on a tape recorder with the exception of **Pause**. Clicking on **Pause** when not playing or recording will turn on the level meters so that the input level can be adjusted without actually recording. Click on **Stop** to turn off the meters.

The meters will change their appearance for different formats. The full 16 segment meter pair is used for stereo 16 bit recording. Mono 16 bit recording uses only one 16 segment meter and 8 bit recording cuts the meter to 10 segments, since the resolution can only be measured to -48 dB.

The available disk space is shown in minutes, according to the format selected for recording. This figure will be recalculated each time you stop recording.

The **RTZ**, **GTE**, and **SEL** buttons are provided for jumping quickly to a position in the file:

Return To Zero - rewinds to the beginning of the file.

Go To End - forwards to the end of the file.

SElected Area - move to the start of the selected area in the file, if one exists.

The time display on the right shows the current position. Playing or recording will start at this position.

Note that **Play**, **Cue**, **Review** and **SEL** are not functional if you are recording into a new file.



Preset Dialog

The Preset Dialog is used to load and save presets for certain tools.

When using tools with more than one or two control parameters, you will first come upon the Preset Dialog. If you would like to use one of the included presets, just click on that name and hit **OK**. To see the settings of a particular preset, click on the name of the preset and then click on **Advanced**. The dialog box for the current tool will be loaded with the settings of the preset you have chosen. You can then 'tweak' the settings and save them as a new preset or go ahead and execute the tool.

The **Delete** button is included in case you ever get too many presets and you feel the need to do some house cleaning. Click on the preset name you want to delete and then click on **Delete**. If you accidentally delete a factory preset, you can always recopy the **.DAT** files from your install disk into your WAVE directory to get them back.

